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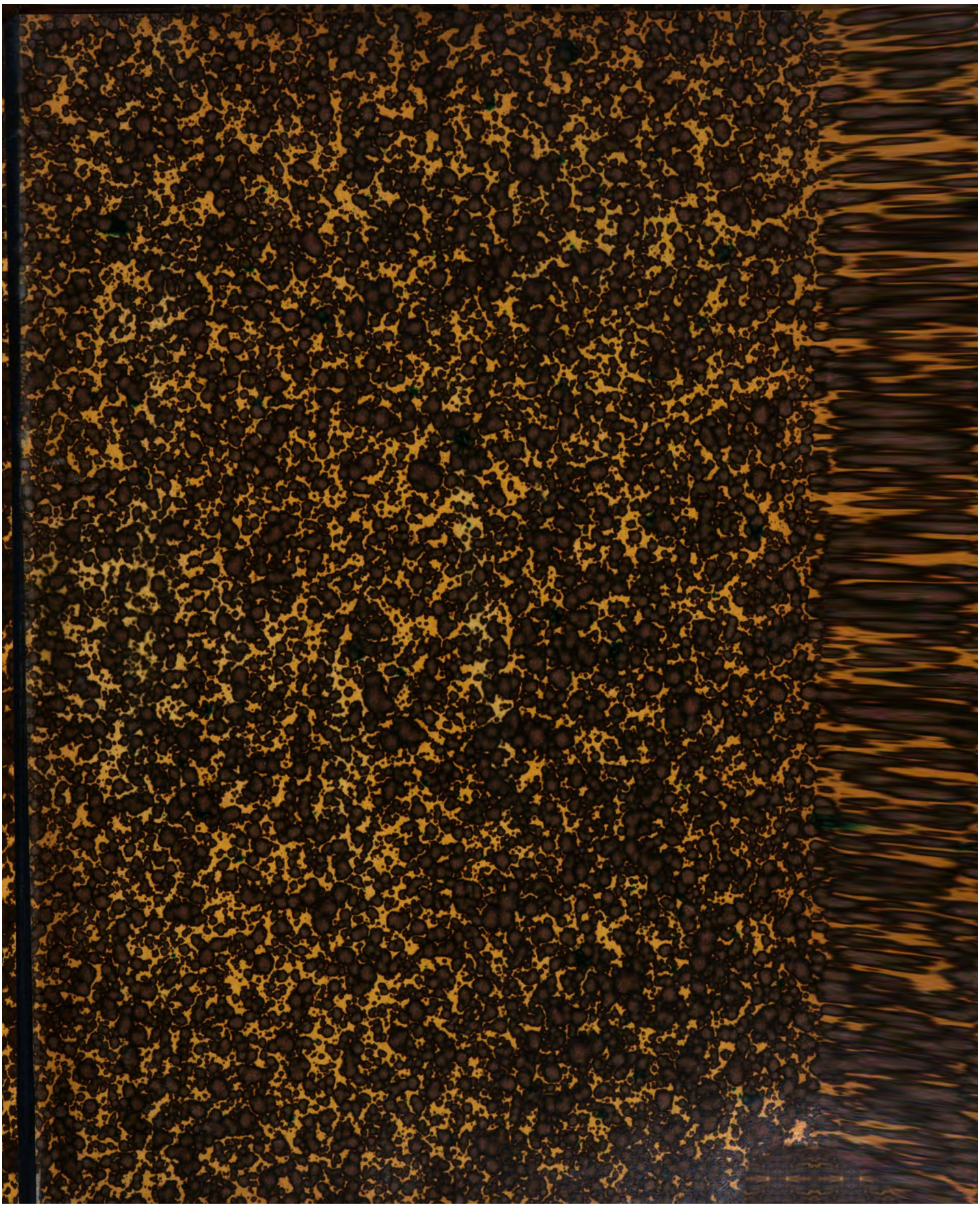

An Address
ON
MALIGNANT DISEASE OF THE NASAL PASSAGES: ITS DIAGNOSIS, PATHOLOGY, AND TREATMENT.

Delivered at the Medical Graduates' College and Polyclinic

BY W. STUART-LOW, F.R.C.S. ENG.,
SURGEON, CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL; AND LECTURER ON RHINOLOGY AND OTOLOGY, MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, CHENIES STREET, W.C.

LADIES AND GENTLEMEN,—My reasons for selecting this subject of malignant disease of the nasal passages, its diagnosis, pathology, and treatment, on which to address you this evening are: first, that you will find that in nearly all the writings of the authorities it is very unsatisfactorily and scantily dealt with, and many statements made with reference to it are very contradictory and unreliable; secondly, that I have recently met with cases which illustrate and emphasise the importance of clearly comprehending the urgent necessity for early diagnosis if the patient's life is to be saved, and again, founding my conclusions on cases I have actually come in touch with, I very much doubt if the urgent necessity for clearer views about malignant disease of the nose and the fatal results likely to happen if it is not diagnosed early are sufficiently grasped by those first seeing these cases—viz., the general practitioners.

MALIGNANT DISEASE OF THE NASAL PASSAGES AND ANTRUM: OPERATION BY THE CANINE FOSSA ROUTE.

CASE 1.—One of these cases which I have referred to was that of a young woman, 22 years of age, sent to my clinic from the Royal London Ophthalmic Hospital (Moorfields), and it serves to illustrate three points in the history of malignant disease of the nasal passages—that it may begin outside the nose—be of extrinsic origin; that the disease, while ultimately presenting quite characteristic symptoms, may in its early stages appear in unusual and obscure forms; and that, if operated upon in time, malignant disease of the nose is often readily amenable to surgical treatment. This young woman had been a patient at Moorfields, whither she had gone complaining of pain in the left eye, but not of a constant or severe character. The sight was not affected, but there was some watering of the eye, and the vessels looked congested. About three weeks before being sent to my clinic some swelling had supervened under the left eye, extending on the cheek. As nothing definitely wrong with the eye could be discovered, she was sent to me on the supposition that there might be something in the nose or its accessory sinuses to account for the symptoms. The only thing noticed on carefully examining the interior of the nose was enlargement and œdema of the middle turbinal on the left side, and some narrowing of the nasal passage on this side from bulging inwards of the outer wall; but on transillumination no infra-orbital crescent was discovered on this side, the whole cheek being uniformly dark. The pupil did not illuminate, and she said that she did not perceive the light shining into this eye as on the right side. It was clear, then, that the light was not being transmitted through the antral cavity, which was almost certainly occupied by thick fluid or some solid substance. The next step in the diagnosis consisted in exploring the antrum from the nose by means of Lichtwitz's puncturing trocar and cannula. On this being done a few drops of blood exuded from the cannula, but no pus; this pointed to something of the nature of a growth, which was made more likely still when on blowing air through the cannula only blood was forced out.

The bloody discharge was preserved and handed to the pathologist, who reported that it contained cells indicating the presence of a growth in the antrum—the most reasonable solution of the case. Iodide of potassium and liquor arsenicalis were prescribed, and being so young the patient was kept on these preparations for a fortnight in the hope that resolution of the growth might take place. No improvement resulted; indeed, the facial swelling steadily increased, almost closing the eye, and the nasal passage on the left side became narrowed and more blocked to respiration. She was therefore entered as an in-patient. I may mention with reference to this case that at the operation—to be detailed later—through the canine fossa the antrum was found to be almost completely occupied by a vascular and firm tumour; it was most firmly attached to the posterior wall from which it had originally sprung, and was pressing through the thin inner wall into the nose, this fact explaining the narrowing of the passage. Dr. Wyatt Wingrave, the pathologist, pronounced it to be a "spindle-shaped fibroid sarcoma."

This case serves to illustrate the fact that malignant disease may invade the nasal passage proper from without, from the cavity of the upper jaw—be, in fact, extrinsic in its origin as regards the nose. With reference to the diagnosis, the most likely conditions that you are apt to confound such a case with are cysts of the antrum (mucocele) and dental cysts. A very large dental cyst invading and expanding the antrum wall may very easily be confused with malignant disease of the upper jaw, and so might the superficial and facial swelling and expansion of the bone brought about by a mucocele of the antrum; but in both of these the pain would be slight, whereas in malignant disease it is commonly severe, of a sharp, shooting, radiating, neuralgic type. On transillumination, again, the cysts are clear and the malignant growth opaque or dark; and on puncturing the cysts clear fluid is found, while in tumours either no fluid is obtained or only a few drops of blood. It was decided to operate by the same method as was adopted in the following case, which I will first give an account of as it illustrates certain features of malignant disease of the nose that I am anxious to emphasise.

CASE 2.—The second case illustrates the fact that malignant disease may begin on the outer wall of the nose and invade the antrum secondarily.

A woman, 35 years of age, had suffered for two years from unilateral nasal bleeding, and the nasal passage had been gradually getting more and more blocked. The hæmorrhage had been more and more frequent during the last six months, and sometimes severe. She had suffered little or no pain in the nose or face and complained chiefly of a more or less constant sanious and serous discharge from the left side of the nose, and of stuffiness on this side. There was no swelling or visible symptom to be detected on the outside; but on inspecting the interior the left nasal cavity was found to be full of what proved on palpation to be a soft, vascular, pale, red mass of growth; it was filling up the cavity and obscuring the turbinals. On transillumination this side of the nose was quite dark, and the antrum on the same side was partially obscured also. Cocaine solution having been applied, a piece of the growth was snared away, when the hæmorrhage was very severe; indeed, necessitating repeated packing with adrenalin solution, and that the patient should rest in the horizontal position for over an hour before being able to return home.

The pathologist pronounced the tumour to be one of columnar-celled epithelioma. Operation was decided upon, and in view of the fact of the vascularity of the tumour large doses of calcium lactate were administered during the two following days, and a dose of one drachm was given the evening before the operation, which was performed very early in the morning. I am certain that patients withstand the shock of an operation much better if it is performed in the early morning, and if that time be chosen much may be placed to the credit side of the patient as regards rapid and sound recovery.

I would like to be emphatic about two points with reference to this case: one is the diagnosis, and the other the method of operation. This patient had suffered from unilateral bleeding from the nose for two years, and the passage had been gradually becoming more and more blocked. Hæmorrhage from the nose may go on for years, and yet the cause be quite an innocent and simple one, such as septic ulceration or encrustation; but, if progressive obstruction is a concomitant symptom, strict attention should be given to the diagnosis and causation, as it is much more likely to be of a serious nature. Pain is not to be relied on as a danger-signal. This patient had experienced little or no pain, and it may only be when damming up of secretions, tension and pressure upon and implication of nerves occur that pain is prominently manifest.

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At the operation, in anticipation of severe hæmorrhage, laryngotomy was first performed, and the pharynx and larynx packed with captive sponges, the head and shoulders being well raised so that a good view of the interior of the nose could be obtained. I decided not to incise the face and thus blemish the patient for life, but to try to remove the tumour by the canine fossa route. The gingivo-buccal fold was freely incised from beyond the middle line in front backwards to the canine ridge, and the soft structures raised upwards, including the periosteum and the lateral cartilages of the nose. In this way, and by forcible retraction, nearly the whole of the anterior and lateral surface of the superior maxillary bone can be well exposed. The anterior wall of the antrum was then almost entirely removed and the contents of the antrum evacuated. The outer wall of the nose was then freely taken away, the ascending process of the superior maxilla not being touched; this is not at all necessary, as perfectly satisfactory access can be obtained to the interior of the nose without one's doing so.

In this particular case I readily removed a large mass of growth which had extended up into the middle turbinal region. The canine fossa route into the interior of the nose is an excellent method of operation in extensive or malignant disease of the nose, and has the great recommendation that no mark is made or left on the face.

The operation I prefer and have described as employed successfully in both of these cases is a modification of Rouge's method, and is preferable to such external operations as Langenbeck's, where a flap is turned down from the outside of the nose.

SARCOMA OF THE NOSE, ETC.

The following case illustrates the occurrence of sarcoma in the nose, which most frequently arises in elderly people, but may occur at any age as a primary tumour. It is sometimes seen well forward on the septum as a single, soft, sessile, very vascular, and uniform swelling; it may be smooth or rough, and readily bleeds if touched. Frequent and severe epistaxis in a patient with a sessile polypus-looking growth on the nasal septum would suggest to the mind at once a sarcoma, and if such a tumour be removed early the prognosis is good.

CASE 3.—A young woman, aged 27 years, a domestic cook, came to the hospital complaining of severe unilateral nasal bleeding which had been going on at intervals of a few days for over a year. She had had occasional shooting pains up the side of the nose and the passage had been becoming more and more blocked. On examination a very vascular swelling of the size of a sixpenny-piece was seen on the nasal septum at about its middle. This was soft and very florid-looking and bled very much on being lightly touched. A piece was snared off, and the pathologist pronounced it to be small round-celled sarcoma.

The patient was admitted to the hospital, and a general anæsthetic having been administered and the posterior nares firmly plugged, the growth was curetted away. It was found to have eroded the bone; the cartilaginous septum was perforated, the tumour having invaded the soft tissue on the opposite side. The base of the cavity left after excavating the sarcoma was then touched with liquid acid nitrate of mercury and the nostrils packed with gauze. Two years have now elapsed, but no recurrence has taken place.

Sarcoma is the form of growth most frequently met with in the interior of the nose. It very rarely originates directly from the mucous membrane, but in the great majority of cases is apparently derived from the periosteum or perichondrium of the bony or cartilaginous framework of the nose.

Sarcoma may originate in any part of the nasal fossæ, especially in older patients. It may start at the base of the skull, from either the sphenoid or the cribriform plate of the ethmoid. From these positions the growth may extend to the fossæ, the accessory sinuses, and the naso-pharynx, and by pressure bring about that separation of the eyes and flattening of the nose likened to a frog's face, with hideous deformity.

The two varieties of sarcoma that preponderate over all others are the round-celled and spindle-celled. The round-celled are found most frequently springing from the boundaries of the maxillary antrum. They are also met with in the ethmoid region, originating in the bony cells of which this part of the nasal interior is largely composed. Sometimes round-celled sarcoma is encountered in the frontal sinus. The spindle-celled sarcomata are most often seen originating from the nasal septum.

Giant-celled sarcoma is very rare and has been observed in different parts of the nasal cavity.

LYMPHO-SARCOMA.

A form of sarcoma that is very rare is the lymphosarcoma, and this is met with almost exclusively in the naso-pharynx; it commences in the lymphoid structures found in the roof and sides of this cavity, and from these positions may invade the nose from behind. When present, this growth is mostly found associated with similar tumours in the faucial tonsils and accompanied by great enlargement of the cervical lymphatics. The following was a case of this kind sent up from the country to my clinic about two years ago.

CASE 4.—The patient was a man, 38 years of age, who complained of gradually increasing stuffiness of the nose, difficulty of swallowing, and deafness. He was found to have a forward bulging of the soft palate through which on palpation a firm elastic swelling was to be made out, and the growth was discovered to extend throughout the cavity of the naso-pharynx, quite filling it and protruding into the nose from behind. There was also direct extension laterally into the superior deep cervical glands, and posteriorly into the posterior triangle of the neck. The glands were first removed under local anæsthesia, as the breathing was too disturbed to warrant an anæsthetic. A few weeks later the tumour in the naso-pharynx was dealt with by first performing laryngotomy and plugging the larynx. The palate was then split and all the growth rapidly removed. The patient recovered satisfactorily, but in six months had a secondary growth in the liver which extended to the skin. There was no recurrence locally at the sites originally operated upon. There is no doubt that these cases ought always to be early and radically treated at the first seat of the trouble, and if this is done properly no recurrence will occur.

NASAL POLYPI BECOMING SARCOMATOUS.

The question as to whether nasal polypi, mucous and fibrous, are capable of, and given to, taking on a sarcomatous change is a much discussed and vexed one. There is no doubt, as I have often observed, that after mucous polypi have existed for many years (some patients suffer from these growths for a life-time) and have been frequently removed the polypi tend to become more and more vascular and fibrous. This suspicious change, sometimes symptomatic of impending sarcomatous development, commences at the deep parts of the growth, and when detected should ever suggest to the mind of the surgeon that malignant disease may be coming, and that one should make a certainty of this by removing a piece and having a pathological opinion upon its nature. There is little doubt, either, but that innocent and malignant polypi may co-exist, growing side by side, and if sufficient of the tumour is not taken for pathological examination a wrong conclusion may be arrived at by removing only the more manifest and abundant innocent growths. The following two cases lend support to the view that innocent mucous polypi may take on malignant change.

CASE 5.—A man, 70 years of age, came to the clinic of one of my colleagues some years ago complaining of nasal stuffiness and occasional nose-bleeding. The nostril on the left side was found to be packed with a fibrous, fleshy, hæmorrhagic-looking mass which bled freely on being probed. He gave a history, which was verified, of having attended for 25 years as a private patient at a well-known specialist's, and afterwards at his hospital, and of having had polypi snared away at intervals during this prolonged period. The tumour was now found to be sarcomatous, and as the maxillary antrum was quite dark on the same side on transillumination surgical treatment was decided upon. An extensive operation, in which the upper jaw was removed and the base of the brain exposed, was carried out, but the patient died the same evening. At the post-mortem examination the disease was found to have invaded the orbit, the antrum, and the cranium, and was proved to have become sarcomatous in its deeper parts.

CASE 6.—This case was one of my own, that of a man, 45 years of age, who had suffered from mucous polypi in the

nose all his adult life. These had been repeatedly snared away at varying intervals, but during the last year hæmorrhage had become a prominent feature of his case. The antrum on the left side being perfectly dark on transillumination, it was decided to enter the nose by the canine-fossa route and try to remove all the growth, which turned out to be a sarcoma, by this method. Excellent access was in this way obtained, but the disease was found to have extended well up into the ethmoid region, even involving the middle and posterior ethmoid cells. Unfortunately, meningitis commenced on the third day after operation and proved fatal in two days. This case, like the former one, emphasises the danger in attempting to carry out a complete operation when malignant growth supervenes upon or co-exists with nasal polypi.

CARCINOMA.

Carcinoma of the interior of the nose is most usually seen in the form of typical squamous cells, although originating in a mucous membrane covered with a ciliated epithelium. Such is perhaps to be explained by the fact that the appearance of a carcinoma is, in the majority of cases, preceded by an ozæna or an accessory sinus suppuration in which the ciliated epithelium undergoes a conversion into squamous, and so the way for the cancerous change is prepared. Most usually these carcinomata originate in the ethmoid region, practically from the roof of the nose.

In my opinion malignant disease of the nose is most liable to arise when the mucous membrane is thin and is a muco-periosteum, as in the sinuses and in the cells of the ethmoid region. If there is a state of desiccation and shrivelling of the protective mucous lining on the lower part of the nasal passages, and over the inferior turbinals, irritating, dry, and dusty air will be allowed to pass up into the higher regions, and so a chronic irritation will be maintained which becomes a primary factor in the causation of this diseased condition.

Those inheriting thin mucous membranes—for just as thick and thin cutaneous coverings are a matter of inheritance, so are thick and thin mucous membranes or inner skins—are most liable to cancer. Again, unfavourable surroundings and occupations such as necessitate the inhalation of dry, warm, and dust-laden air favour the development of cancer in the nose.

As distinguished from the nasal passages proper, in the accessory sinuses cylindrical-celled carcinomata are apparently more frequent than the squamous-celled variety. Carcinoma is more common in the antrum than in the frontal sinus. The following case will illustrate such a tumour.

CASE 7.—A woman, 45 years of age, came to my clinic complaining of severe pain of a month's standing, and of a swelling which was gradually increasing, situated on the left cheek. The swollen part was limited to a space of about the area of a half-crown, and was firm but elastic, and painful on deep pressure. This side was dark on transillumination, and on puncturing the antrum through the nose with Lichtwitz's trocar and cannula only blood exuded. On operating through the canine fossa the floor of the fossa was found to be eroded, and a mass of growth was seen protruding through the opening, spreading mushroom-like over the cheek under the cutaneous structures. The cavity of the antrum was found full of the tumour, which proved to be a columnar-celled epithelioma. It was freely removed, and the surrounding bony walls thoroughly scraped and rubbed with a strong solution of chloride of zinc. The patient did well, and no recurrence has taken place during the past two years.

SUMMARY.

In conclusion, there are some practical lessons to be learned from a study of this subject: 1. Pain is not to be relied upon as an indication of malignant disease in the nose. 2. Increasing and persistent stuffiness, especially if unilateral, is an important point as regards diagnosis. 3. Recurring and increasingly severe hæmorrhage, especially if unilateral, is always a suspicious symptom. 4. A combination of hæmorrhage and increasing stuffiness is often a serious indication of new growth existing. 5. The making of an early diagnosis is of great importance. 6. It is imperative to make a thorough and systematic examination in all obscure cases of nasal disease, and to remove early a piece of any obstruction in the nasal passages for a pathological report. 7. It is of great importance when there is malignant disease to operate as soon as possible after a diagnosis has been made to secure a successful removal. 8. It is advisable to adopt the canine-fossa route in operating for the extirpation of intra-nasal tumours. 9. Innocent and malignant polypi are likely to coexist.

THE ESSENTIAL CAUSE OF GASTRIC AND DUODENAL ULCER.

BY C. MANSELL MOULLIN, M.A., M.D. OXON., F.R.C.S. ENG.,

CONSULTING SURGEON TO THE LONDON HOSPITAL; VICE-PRESIDENT, ROYAL COLLEGE OF SURGEONS OF ENGLAND.

LEAVING upon one side cases that are due to tubercle or to other specific agents, the starting-point of what is commonly known as a gastric or duodenal ulcer is the destruction by a process of digestion of more or less of the thickness of the wall in one particular spot. This is the work of the gastric juice, aided by inflammation, unless, as sometimes happens, the destructive process is so sudden and so acute that there is no time for this to come into play. Everything that injures the tissues, or lowers their vitality, or interferes with their nutrition sufficiently renders them liable to this. It is evident, therefore, that there must be many different causes, and that in many instances, if not in all, more than one are at work at the same time.

Immunity.

Tissues that produce gastric juice or are normally bathed in it are not affected by it, so long as they are healthy and uninjured. They have acquired immunity in the course of development. Others are killed by it, but they are not. So long as the mucous membrane lining the stomach and the first part of the duodenum is living and healthy the gastric juice is not able to harm it. Lower down in the bowel the degree of immunity grows less and ultimately disappears. To what this immunity is due is not known. There is some reason to think that living tissues in general possess the power of resistance in a higher degree than dead ones, but other living tissues, with the exception of a few organisms, such as some parasitic entozoa, are soon killed and then at once digested. It may be that the power of resistance is dependent not so much upon the life of the cells as upon some property or substance that is contained in them, something, perhaps, of the nature of an antiferment. The blood undoubtedly does possess an antitryptic power that varies in strength under different conditions; and there may be some substance of a similar character in the cells of the gastric mucous membrane. But it must be understood that no such thing as an antiferment has been isolated, and that the name is little more than an expression to describe certain phenomena, the nature of which is not known. All that can be said is that if the power of resistance is not dependent upon the life of the tissues in question, at least it disappears with it; and that when killed or badly injured in any way, the mucous membrane of the stomach and first part of the duodenum does not appear to offer an appreciably higher degree of resistance to the gastric juice than any other similar tissue.

This immunity is not shared by the submucous and muscular coats. The deeper layers of the mucous membrane possess it to some extent, and it is reasonable to associate this with the deep extension of the epithelial layer. But if the whole thickness of the mucous membrane is destroyed at any one spot, so as to leave the submucous or muscular coat exposed to the gastric juice, the corrosive process continues, and either the wall gives way, or if there is sufficient time for inflammation to set in, a protecting barrier is formed by the thickening of the serous coat, or by its fusion with the corresponding layer of some neighbouring organ. When this occurs, a balance of a more or less fluctuating character is struck between the corrosive action of the gastric juice on the one hand, and the resistance of the inflamed and irritated tissues upon the other. Sometimes the one gains the upper hand; sometimes the other. The ulcer at one time grows deeper or wider; at another it remains stationary or even contracts; but when it has once reached this stage it has become chronic, and is to be regarded no longer as simply one of the results of a general morbid process, but as a disease of itself, requiring special treatment.

The site of a gastric or duodenal ulcer is always determined

by some local cause. The commonest situation, for instance, is either where the mucous membrane is thickest and softest, and the lymphoid tissue most abundant, or at those points where pressure is greatest or the surface most exposed to injury. But in certain cases gastric ulcers are due entirely to local causes, and these, because they are simpler, I shall deal with first.

Direct Causes.

Gastric ulcer, when of purely local origin, is nearly always due either to injury or to some gross vascular lesion, suddenly cutting off the blood-supply. It may, for example, be caused by direct violence. In several instances I have known hæmatemesis follow a blow upon the epigastrium, or a sudden muscular strain, in men whose previous history gave no reason to suspect the presence of an ulcer; and in one of these the diagnosis was subsequently confirmed by operation. In all probability there had been considerable bruising of the mucous membrane, with hæmorrhage into its substance; or perhaps a rent. Owing to the conditions present at the time the lesion did not heal, but developed into an ulcer, which at the time of the operation presented all the ordinary features of a chronic ulcer. Several similar cases have been recorded.

The degree of violence necessary to produce this result in any individual case naturally differs very widely. One factor of great importance is the state of the gastric circulation. When the stomach is actively engaged in the process of digestion the force need not be very great. If the mucous membrane is in that state of intense congestion which sometimes results from pathological causes the slightest touch is sufficient. It has even been suggested that the wearing of ill-fitting stays by women of the domestic class, who have constantly to be stooping at their work, may be one of the reasons why gastric ulcer is of such frequent occurrence among them.

Swallowing corrosive poison is another occasional local cause. In several cases under my care in which an attempt had been made to commit suicide by swallowing strong hydrochloric acid, ulcers were caused in the œsophagus and at the pylorus. The intermediate portion of the stomach escaped. If the patient survives, these ulcers may heal like ordinary wounds or may persist and become chronic. In either case they often leave behind them a serious degree of cicatricial contraction, for which I have twice had to perform gastro-enterostomy. It is a fair deduction from this that in ordinary circumstances, when the contents of the stomach are only slightly more irritating than usual, the pyloric portion is more liable to be injured than the rest of the interior; and for this reason, among others, is especially likely to become the seat of ulceration.

Embolism, cutting off the blood-supply from one particular section, is one of the best known local causes. In patients who have died with endocarditis, every stage of ulceration and every grade in the development of ulcers from early infarction of the mucous membrane to complete destruction may be found on post-mortem examination, and the whole process can be traced from beginning to end. The same thing has been proved experimentally by many observers, and in operating upon cases of recent gastric ulcer, I have often seen unmistakable evidence of this—flame-shaped patches of hæmorrhagic exudation, due to embolism, in the immediate neighbourhood of recent erosions. It was impossible to avoid the impression that both had originated from the same cause. In the one the protection of the epithelial layer had been preserved, so that there was merely an infarction of the mucous and submucous layers. In the other this had been lost and digestion had taken place, leaving an erosion or an ulcer, according to the depth to which the destruction had extended.

In all probability embolism is the immediate cause of the gastric and duodenal ulcers that occasionally develop after injuries and operations, especially those involving bones. There is evidence to show that, apart from sepsis and septic infection, embolism is much more common in these circumstances than is usually believed. Attention is not attracted to it because, as a rule, the arteries that are blocked are small, and cutting off the blood-supply does not involve any striking consequence. It is, for example, a matter of very old observation that infarcts due to embolism of minute branches of the hepatic artery are of common occurrence in the liver after fatal accidents and injuries. Owing to their locality they are not noticed during life, but if the gastric branch were involved instead of the hepatic, and the other conditions were suitable, it can easily be understood that a gastric ulcer would follow. I have shown elsewhere that fatty embolism of the pulmonary capillaries occurs in every fracture, and that the particles of fat are carried through the vessels of the lungs into those of other organs. If this is so frequent in the case of fat, it is probably scarcely less common with particles of fibrin from the coagula in the minute vessels which are bruised or severed in every injury or operation.

Embolism also plays a part in the production of the gastric and duodenal ulcers that occur in the course of acute infectious disorders and in septic infection and intoxication, though it is seldom possible, owing to the action of the gastric juice upon the affected area, to demonstrate the presence of the obstruction. Analogous changes in neighbouring organs leave no room for doubt. But here there are other influences at work as well, and the ulcers are not due to local causes only. The presence of septic poisons circulating in the blood, possibly excreted in part by the gastric mucous membrane, cannot but have a strongly predisposing effect. They lower the vitality and the power of resistance of all the tissues, and by causing the intense congestion of the mucous membrane ending in hæmorrhage, so often present in these circumstances, they lead to such a condition of things that the least irritant, one which in health would leave no trace behind, is sufficient to cause an ulcer. The superficial erosions, as distinguished from genuine ulcers, so often found in these cases, are probably all caused in this way.

Embolism, therefore, must be regarded as an important and a proved cause for gastric ulcer, but though its capacity cannot be doubted, and though it furnishes some of the most striking and characteristic examples, it is by no means certain that apart from such affections as endocarditis and the others I have mentioned it is a frequent or even a common cause. In a large proportion of cases it is not possible to find any evidence of embolism, or to suggest a locality whence an embolus could have come.

Arterial degeneration is frequently present in the walls of the stomach in association with gastric ulcer. It has been described as occurring in recent acute cases. In chronic ones it is so common as to be the rule. In operating upon such cases I have been struck by the frequency with which it occurs in the mucous and submucous coats. The walls of the arteries are thickened, the muscular coat practically replaced by fibrous tissue, and the lumen seriously reduced in size. A similar change has been described by Miller in the walls of the gastric arteries in chronic dyspeptics, associated with degenerative or chronic inflammatory changes in the mucous and submucous layers. It is not probable that a change of this kind could ever be the immediate cause of ulceration unless it progressed so far as to lead to arterial occlusion, but it must have a predisposing influence, and there can be little doubt that it tends seriously to delay the healing of any ulcer when once it has been formed and helps to make it chronic.

The same that was said of embolism may be said of thrombosis. It certainly can act as a cause. Miller[1] has described a case in which numerous shallow ulcers, smaller in area than those generally found when the arterioles are blocked, were present on the gastric mucous membrane, caused by changes in the endothelial lining of the gastric veins with consecutive thrombosis. The intima was rough, the cells scarcely recognisable, and the lumen was narrowed and filled with shreds of adherent clot. A similar change in the intestinal veins had led to gangrene of the bowel. But though thrombosis may possibly play some part in the gastric ulcers that occur in chlorosis, and in the lesions that are met with in cases of septic intoxication and infection, it cannot be regarded as common.

The gastric and duodenal ulcers that are occasionally found after injuries to the brain and spinal cord, and those which are caused experimentally by subphrenic section of the vagi, and by injuries of the splanchnics and of the cœliac plexus, are also the result of local vascular lesions. Hæmorrhages, at any rate, are met with more frequently than ulcers, and the bases of ulcers, when they are of recent origin, are nearly always infiltrated with blood. The same thing is true of ulcers that occur in patients with heart

[1] Archives of the Pathological Institute of the London Hospital, vol. i.

disease other than endocarditis; but those which are occasionally found in Bright's disease, advanced jaundice, hepatic cirrhosis, and the like, are the product of the general morbid condition, the local cause, whatever it may be, doing little more than determine the exact situation.

Indirect Causes.

These varieties of gastric and duodenal ulcer are, however, all of them exceptional, due to exceptional causes, and chiefly of interest from the light they throw upon the method of development of the rest. In the vast majority of cases of what is usually meant when speaking of gastric or duodenal ulcer local agencies do little more than determine the actual site. The essential factor is the morbid condition of the mucous membrane, of which the ulcer is little more than a local accentuation. Acute ulcer of the stomach and duodenum is often regarded as if it were a disease of itself. It may be so when due to purely local causes, such as those I have already described; but in all ordinary cases the ulcer is little more than a secondary consequence. An ulcer may make all the symptoms worse and perpetuate them, but no matter how prominent it appears to be it is not the primary element. The essential factor is the morbid condition of the mucous membrane. It is only when an ulcer refuses to heal and has become chronic that it can be regarded as a disease of itself.

Up to the present time the existence of this morbid condition of the mucous membrane has attracted but little notice. During life there is seldom anything to call attention to it but an alteration in the secretory activity of the gastric mucous membrane and an occasional outbreak of hæmatemesis. In some instances the amount of hydrochloric acid in the gastric juice is said to be increased. In others the gastric secretion is excessive and apparently continuous, independent of the stimulus of food, for if the patient's stomach is washed out in the morning after many hours of fasting, it still contains 50 or 100 cubic centimetres of thin bile-stained gastric juice. Post mortem the only sign that points to it is the presence of a few erosions with some blood-stained spots and interstitial hæmorrhages. These are very significant when they are properly interpreted and understood, but they do little more than suggest what has been happening. It is only since the recent improvement in the gastroscope, rendering direct inspection of the gastric mucous membrane easy, that definite evidence as to the real condition of the mucous membrane in these cases has been obtained. The lessons to be learnt from the account of the inspection of the interior of the stomach of Alexis St. Martin in varying conditions seem to have been almost forgotten.

The mucous membrane of the stomach after death is absolutely different in appearance, texture, thickness, and vascularity from what it is during life. During fasting again it is quite different from what it is during active digestion; and as may be imagined, if the bounds of physiological action are passed, and the mucous membrane is being spurred on with pathological energy, the difference is greater still. The vascular and other changes are carried much farther. The mucous membrane is swollen and congested to the utmost, especially in those parts where it is thickest, softest, and most vascular, and where the lymphatic follicles are largest and most numerous. It bleeds with the slightest touch and the blood pours from it. Hæmorrhages seem to break out everywhere in its substance. Its surface is so soft and tender that the slightest irritation causes it to give way. Erosions, which if circumstances are favourable, develop into ulcers, make their appearance wherever it is touched or squeezed by the powerful muscles that surround it; and when it becomes inflamed, as it always does around an ulcer or an abrasion, these consequences are carried farther still. The wonder in such cases is not that hæmorrhages and ulcers occur, but that the stomach and duodenum are ever free from them.

This extreme degree of congestion and œdema of the mucous membrane, which precedes ulceration and often leads to it, is the real cause of the trouble. It is this that in a large proportion of cases is responsible for the symptoms for which ulceration, whether present or not, so often gets the blame. Hæmatemesis, for example, is regarded by many as more or less evidence of the presence of an ulcer, but in all probability it is caused as frequently by minute lesions in the intensely congested mucous membrane as by the giving way of an artery on the floor of an ulcer. I admit that nothing is more easy than to overlook post mortem an opening in a gastric artery. I have myself drawn attention to this. The bleeding has ceased. The artery has contracted so that the opening is apparently closed; and even when the vessels have been injected and the stomach has been excised, so that it can be held up to the light for examination, the source of the hæmorrhage may be almost impossible to detect. But there are too many cases on record now in which thoroughly experienced observers have failed to find an opening in an artery for it to be doubted any longer that hæmorrhage sufficiently severe to lead to hæmatemesis may occur without one. Many times, too, when operating in cases of acute recent hæmatemesis, I have found that the bleeding points were multiple and scattered more or less all over the interior. And I have often been struck by the extraordinary way in which the bleeding in these cases so frequently ceases immediately after the operation without any vessel being tied, though it had been going on daily and almost hourly for weeks before. The fall of the blood pressure, consequent upon the shock of the operation, would account for this at once, if the oozing came merely from congested capillaries. It would have only a short-lived influence if there were an opening in the wall of an artery.

The same thing is true of the pain which is so often looked upon as characteristic of gastric ulcer, because it ceases at once as soon as the stomach is emptied. This, like hæmatemesis, owes its origin far more often to the general morbid condition of the mucous membrane than to the presence of a gastric ulcer, though this undoubtedly makes it worse by the inflammation it sets up in all the parts around. Contact of the acid contents of the stomach with sensory nerves exposed on the floor of the ulcer, the cause that is usually assigned, is certainly not the reason, for there are no sensory nerves there, and the pain may be equally severe when there is no ulcer at all. The immediate source of the pain (until the peritoneum becomes involved) is the spasmodic cramp of the muscles around the antrum and the pylorus; and this is started by the extreme sensitiveness of the mucous membrane, intensified by inflammation spreading from the erosions and abrasions that are so often present. The character of the pain, its severity, the way in which it comes on, the way it ceases, the bursting feeling of distension of which patients complain, the tenderness it leaves behind it, its locality, and, above all, the hardening of the pylorus coincident with the onset of the pain which Moynihan has described in cases in which the operation was performed under local anæsthesia, all bear out this view, until, that is to say, the peritoneum becomes involved in the inflammation and an additional factor is introduced.

In short, it is not the ulcer that is the cause of the symptoms so much as the exquisitely hypersensitive and hyperæmic condition of the mucous membrane, intensified by the inflammation that always complicates it sooner or later. Pylorospasm with the consequences it entails, retention of hydrochloric acid (the so-called hyperchlorhydria) and impaired motility, excessive secretion, hæmorrhages, erosions, and in many instances (perhaps with the aid of some trivial local cause) ulcers are all due to it. It is true that when these consequences follow they combine to make all the symptoms infinitely worse and perpetuate them in a kind of vicious circle; but the essential feature is the morbid hyperæmia of the mucous membrane which disappears almost entirely with the life of the patient and the cessation of the circulation, leaving behind it merely a few traces to show what it has been.

General septic poisoning.—The causes that give rise to this condition of the mucous membrane are the real causes of gastric ulcer. By far the most important and the most frequent is septic poisoning. In its acute form this has long been recognised. There is not a death that occurs from acute septic disease in which intense congestion of the mucous membrane of the stomach, often ending in capillary hæmorrhage, is not a prominent feature. In cases with septic symptoms of less severity it has not attracted so much attention, but recently many instances of appendicitis and of similar affections have been recorded in which hæmatemesis has occurred in what has been supposed to be an inexplicable and an extraordinary manner. In some of these an ulcer has been present, but in the majority nothing of the kind has

been found; and it is open to question whether, when there is an ulcer, this was the source of the hæmorrhage or whether it did not result from capillary oozing due to intense congestion. It is significant that in several instances in which coffee-ground vomiting has been present after septic operations for appendicitis I have found it cease abruptly when the poison had been sufficiently diluted by profuse saline infusion into the tissues.

Local septic poisoning.—The effect upon the gastric mucous membrane is the same when the septic poison, instead of being generated in some distant part of the body and carried to the stomach by the circulation, is swallowed in repeated minute doses. I am convinced that the real cause of the vomiting and hæmatemesis which occur so frequently in young women is poisoning of the mucous membrane of the stomach, caused by the persistent swallowing of septic toxins manufactured in the mouth and throat. The organisms themselves may be killed by the hydrochloric acid, which in these cases is often in excess owing to the spasmodic contraction of the pylorus, but the toxins are not. For a long time past I have made a point of investigating the condition of the teeth in these patients, and in the majority it is simply indescribable. I am convinced that the septic poison which is constantly being absorbed by the mucous membrane of the stomach is not only a powerful cause of the chronic ill-health and anæmia from which these patients suffer, but of the hyperæmia which so often ends in hæmatemesis (the gastrostaxis of Hale White), the enlargement of the lymphatic follicles, the small, round-celled infiltration of the mucous membrane, the erosions which are so common, and the ulcers which are so easily produced in these circumstances by some trivial local cause. Time after time have I seen the drastic remedy of clearing out all the decayed stumps followed by the disappearance of the anæmia and of the symptoms of gastritis with a rapidity which could not be accounted for by the effect of improvement in the power of mastication.

This is the explanation of the well-known fact that while "gastric ulcer" is exceedingly common in this class of patient duodenal ulcer is very rare. The action of the septic poison which is swallowed is local only; it only affects the stomach, not the duodenum. On the other hand, when the septic poison acts through the medium of the circulation, it affects both stomach and duodenum, for the duodenum (so far as its first part, at any rate, is concerned) is in far closer sympathy, genetically and pathologically, with the stomach than it is with the rest of the intestine.

In many of these instances, especially those which occur in young women, the effect of this chronic septic poisoning is intensified by the habit so many of them have of swallowing quantities of vinegar. Information with regard to this is very difficult to obtain, and is never volunteered. It has to be drawn out bit by bit, but I have met with many instances in which a pint a day has been consumed, and a few in which the quantity was occasionally much larger. The effect is probably greater because it is often taken between meals, on an empty stomach, under the curious impression that it will improve the complexion.

The action upon the gastric cells.—Whether septic poisons act in this way only, by causing intense congestion, or whether they may not have in addition a definite devitalising effect upon the cells of the gastric mucous membrane, is a question that cannot be answered yet. Dr. Bolton[2] has brought forward evidence that the latter at least is possible. He has shown that by injecting into the peritoneal cavity certain substances known as gastrotoxins lesions can be produced, limited to the stomach, consisting of blackened patches of necrosis in the mucous membrane, sharply defined and of variable size. These when they disappear leave sharply punched-out ulcers extending from the surface of the mucous membrane to variable depths. And he has proved that these lesions are caused, not by any destructive action on the capillary wall, but by the direct action of the poison on the gastric cells. It is not the result of the removal of any specific resisting power the cells possess: they are damaged, or in some way devitalised, and as a consequence undergo necrosis, disappear, and leave an ulcer indistinguishable from an ordinary acute gastric ulcer. Dr. Bolton has shown, too, that many other toxins possess the same power in a less degree; and he points out that it raises the question whether there may not be endogenous as well as exogenous poisons, which by their action on the gastric cells may produce this result.

Probably there are many other substances that are swallowed which act in the same way, only because they are not swallowed so constantly and persistently as these septic toxins are, every day and every minute in the day, their effect is not so apparent. Alcohol at once suggests itself, especially in the form of new and raw spirit taken upon an empty stomach. It is difficult not to associate the greater prevalence of gastric, and especially of duodenal, ulcer in the male sex after 30 years of age with the consumption of alcohol, particularly in this form.

Other Indirect Causes.

But septic poisons and substances which are swallowed are not the only causes that lead to congestion and impaired vitality. Everything that leads to continued irritation, foods of any kind that disagree or interfere with the work of the stomach, irregularity of meals, overloading the stomach after a period of comparative deprivation, are certainly contributory agents. Exposure to cold is enough in the case of many people, and in many more acts as a powerful accessory cause. The relation between cold and the recurrence of symptoms of gastric and duodenal ulcer after a respite of even many years has often been remarked, and is to be explained not by recurrence of the ulcer, nor by its persistence through the intermediate period, without manifesting its presence in any way, but by a return of that morbid condition of the mucous membrane, due to exposure, which so often ends in ulcer. A condition closely resembling this has been described in connexion with gall-stones, especially one large single one in the gall-bladder (Fenwick); chronic inflammation of the appendix (Moynihan and Paterson), in which the congestion has been sometimes so intense as to end in hæmatemesis; chronic gastric or duodenal ulcer, which though itself a consequence, is no less capable of acting as a cause; and pyloro-spasm, which often behaves in the same way. All of these are known to have been associated with this intensely sensitive and hyperæmic condition of the mucous membrane as causes; and I have myself met with two instances in which I believe it to have been dependent upon the presence of a moveable kidney, for all the symptoms disappeared as soon as this was fixed. Whatever may be the pathological connexion, there can be no question that this condition of intense hyperæmia and hyperæsthesia of the gastric mucous membrane, which hitherto, before the use of the gastroscope, was only a matter of inference, is a very real fact; and that it is the essential cause not only of most of the symptoms which are often attributed to gastric and duodenal ulcer, but, aided, perhaps, by some trivial local cause, in many instances of the ulcers themselves.

The effect of inflammation.—The inflammation that so often occurs in these cases plays a much more important part than is usually believed. It is scarcely ever wanting. The mucous membrane is so soft and vascular that the lightest touch is sufficient to make it bleed, even the pressure of the muscles around it; and if there is the least abrasion it becomes irritated at once by the gastric juice, so that inflammation follows. Only those ulcers show no trace of inflammation in which the death of the tissues is so rapid that there is no time for it to occur. The microscopic appearances show this unmistakably. In cases of acute gastric ulcer there is evidence of past congestion all over the interior of the stomach, especially along the lesser curvature and near the pylorus where the lymphoid tissue is thickest and most vascular. But in the immediate neighbourhood of the ulcer the changes are much more conspicuous. There are minute hæmorrhages everywhere around. All the interstices between the peptic glands and at their base are filled with a round-celled exudation. The lymphoid follicles are enlarged and swollen. Many of them are on the point of giving way. Sometimes they have burst already into the stomach, or through the basement membrane. Everywhere around, in short, there is the microscopic appearance of acute inflammation of the mucous membrane, fading away the farther the part examined is from the ulcer.

Unless there is some definite local cause, such as injury, the actual starting-point of an acute gastric ulcer is nearly always one of these enormously enlarged and inflamed lymphoid follicles. From their texture alone they would be

[2] Proceedings of the Royal Society of Medicine, 1909.

more likely to give way than any other part. As Miller has shown, they hardly exist at birth and do not attain any size until four years of age. From that time through adult life, until late middle age, they are present in abundance chiefly along the lesser curvature and near the pylorus, and there, too, they are larger than they are elsewhere. Wherever there is any irritation, such, for example, as is caused by the continued swallowing of minute doses of septic poisons, they increase in size until they may project far above the surface and become softer and more vascular. Then, if there is the least strain they give way. They are the most vulnerable points, and in them and immediately around them all the inflammatory changes are most obvious.

The same thing is true when the ulceration is chronic, instead of being acute, only then the appearances presented by the mucous membrane have undergone a further change. The lymphoid follicles are still enlarged, and there is still the same small, round-celled infiltration of the interstices in the mucous and submucous layers, but in addition there are thickening and condensation of all the fibrous tissue. The basement membrane is denser and more fibrous. The strands passing from it have lost their delicate character. The adventitia of the vessels is thickened. Sometimes there is thickening of the other coats as well. Everywhere there are stiffening and loss of mobility of the mucous membrane, and a disproportionate development of the lymphoid tissue. Everywhere, as Miller has shown, when there is a chronic ulcer, there are around it and over the rest of the mucous surface all the ordinary features of chronic inflammation, with here and there alterations in the walls of the blood-vessels, and, most important of all, with other chronic ulcers in the process of making.

The effect of hydrochloric acid.—Another point in the question of the causation of gastric and duodenal ulcers that is of considerable importance is the relation between them and the hydrochloric acid of the gastric juice. That ulcers are in a way dependent upon the presence of the acid is obvious, for they only occur in those parts of the mucous membrane that come into contact with it. It is therefore an essential factor in their production. Its assistance is needed for the digestion and removal of the tissues in the area that has been injured. But the strongest hydrochloric acid that is found in the human stomach is not capable by itself of causing an ulcer except under very special conditions. The action of the acid is probably best shown in such simple straightforward examples as the formation of a jejunal ulcer after gastro-enterostomy (Paterson) undoubtedly from auto-digestion; and the way in which an excess of acid helps gastrotoxins injected experimentally into the peritoneal cavity in causing the death and subsequent digestion of portions of the gastric mucous membrane (Bolton). Such instances as these, which are supported by numbers of other experiments, prove that hydrochloric acid, especially when in excess, lowers the vitality of, even if it does not directly kill, tissues which are not naturally immune or which have been injured, and ensures their digestion. They do not prove that hydrochloric acid, even when it is in excess, has any effect upon an uninjured gastric mucous membrane.

So far as clinical cases of gastric ulcer are concerned, it is well known that acid of much greater strength than is ever secreted by the gastric mucous membrane may be swallowed with impunity and without causing pain, even when an ulcer is present already; and while in many cases of ulcer hydrochloric acid appears to be in excess, this is certainly not so with all. There are many instances in which there is a decided deficiency. As a matter of fact, the excess of free hydrochloric acid, the so-called hyperchlorhydria, to which so much importance has been attached, is a secondary consequence of spasmodic contraction of the pylorus, or of hypersecretion of gastric juice, or of both together; and these are the result of the morbid condition of the mucous membrane induced by such causes as chronic septic poisoning or irritation spreading from an ulcer. The excess is due to accumulation in the stomach. There is nothing whatever to show that the strength of hydrochloric acid in gastric juice as secreted is ever raised in any way, though it may be lowered. So long as the epithelial lining of the stomach remains intact and uninjured hydrochloric acid in any strength that can be secreted has no effect. But if from any cause, whether it is the cause that gave rise to the pylorospasm and hypersecretion or any other, the protecting epithelial layer of the stomach is injured or the deeper tissues exposed, the acid at once comes into play; the injured tissues are injured further still; inflammation sets in; the débris is digested, and an ulcer left. Ulceration does not occur except where hydrochloric acid is present, for digestion does not; but hydrochloric acid, whether it has accumulated so as to be in excess or whether it has not, cannot cause an ulcer unless there is some other agent at work to initiate the lesion. Given this other agent the effect of the acid, as Bolton has shown, is in proportion to its strength.

Wimpole-street, W.

THE PHYSIQUE OF THE PHTHISICAL.

BY H. DE C. WOODCOCK, M.R.C.S. ENG., D.P.H.,
HONORARY PHYSICIAN TO THE TUBERCULOSIS HOSPITAL, LEEDS.

§ 1. THE tables appended to this article are in part the result of study in morbidity rather than in mortality among phthisical subjects. No notice has been taken in them of the ordinary and universally recognised physical signs of phthisis, such as ratio of depth of chest to width, presence of wing-like scapulæ, &c.; but an attempt has been made to call attention to certain other appearances coincident with phthisis, though not generally recognised, and to record somewhat fragmentary details rather than to build upon them. The figures here given have been verified by wide investigation since the tables were made; an immense number of cases not included in the tables have been examined in all classes except in No. 6 of Table I., the New York Life Assurance cases.

§ 2. There are one or two points to which it may be well to call special attention. First, and most important of all, there is the peculiar appearance of the soft palate, which I begin to look for with certainty in almost all cases o marked phthisis. The phthisical soft palate is of a pearly bluish-white tint, and is covered with a somewhat mucoid moisture. It certainly differs from the chlorotic palate. I place it as a sign of sinister import equal to the rapid phthisical pulse, or the temperature, pulse, and respiration reaction to fatigue.

§ 3. This fatigue reaction is worth referring to. The morning is the best time to commence the observation. The fatigue causes a rapid rise in temperature, followed by a slow descent lasting until, and merging in, the usual evening rise always expected in phthisical patients.

§ 4. The hand ratio is found by comparison of the length of the hand, from the ridge of the ulna in an oblique line to the end of the longest finger, with the breadth across the hand at the knuckles. This measurement is best taken by means of an instrument resembling that used by shoemakers for measuring feet; if a protractor is attached for measuring hyperextension, so much the better. Hyperextension of the fingers on the metacarpals or of the terminal on the penultimate phalanx is a sign commonly found in the cases of people in advanced or rapidly advancing phthisis. Doubtless other forms of hyperextension would show a similar condition. Much still remains to be done in this direction—for instance, in comparing the length of the phalanges with that of the rest of the hand. In the case of patients who have done much manual work hyperextension may be less than it would naturally be; and again in other cases, as, for instance, in violinists, it may be greater.

§ 5. Reference is made in No. 5 of Table I. to the clubbing and curving of the ends of the fingers. As the two conditions of phthisis and bronchiectasis so frequently coexist, it is not surprising that marked clubbing of finger-ends should often be seen at Armley. Moderate clubbing is frequently found where the signs are those of phthisis and not of bronchiectasis. Hence, clubbing as a means of diagnosis has in my opinion lost some of its value.

§ 6. Philip's glands—i.e., the enlarged deep glands just above the clavicle—are always found in phthisical children; but their presence does not necessarily indicate phthisis, since they are so frequently met with in apparently normal children. In the same way, enlargement of the other glands of the neck is so generally found in all classes of patients who consult the doctor for any and every illness that even if one found them in every phthisical patient the diagnostic

TABLE I.—*Men.*

Number.	Designation.	Number of cases.	Age.	Height.	Chest.	Ratio of chest to height.	Weight (1).	Hand ratio.	Hyper-extension.	Hard palate (2).	Soft palate.	Philip's glands.	Other glands of neck.	Teeth	Skin conditions.	Alimentary conditions.	Other notes.
			Years	ins.	ins.		lb.										
1	West Riding artisans, presumably healthy, members of one club, of 25 different trades.	80	20–40	65·58	39·9	0·562	152·5	—	—	30% defective.	—	—	—	70% defective.	Acne common.	—	Continental statistics show a greater height.
2	Jew artisans, presumably healthy, members of two clubs, mostly tailors—																
	(*a*) British born.	40	20–40	67·1	35·56	0·53	157·0	—	—	20% defective.	—	—	—	10% defective.	,,	Constipation very common.	The Jew has large nostrils, but the turbinates often trouble him, and operation on account of hypertrophy is frequent.
	(*b*) Foreign born.	40	20–40	66·8	36·6	0·55	159·5	—	—	22·5% defective.	—	—	—	20% defective.	,,	Constipation exceedingly common; dilatation of stomach rather common.	
3	Phthisicals (not advanced) at Gateforth Sanatorium.	150	20–40	65·2	32·8	0·503	133·3	0·5	Not present.	60% defective.	Normal.	Not found in the majority of cases.		90% defective.	Acne seldom present.	—	80% showed some nasal deformity.
4	Later cases at Gateforth of the same type.	—	20–40	67·0	32·9	0·491	133·4	0·49	20% marked.	—	20% showed marked pallor.	—	—	80% defective.	A few cases of acne and of tinea versicolor.	—	—
5	Advanced phthisicals at Armley Hospital.	20	20–40	65·6	32·0	0·487	115·5	0·45	Present in most cases.	In most cases higher than the average.	Anæmic in most cases.	Can be felt in most cases, but not markedly enlarged.	It is the exception to find any marked enlargement.	(*a*) Fine, handsome, but delicate teeth, not heavy, often seen in rapidly developing cases of very acute phthisis. (*b*) Badly decayed teeth in the majority of cases. (*c*) Strong, broad, coarse teeth, going with stumpy hand; always a sign of resistant type, often associated with clubbed finger-ends (4).	Acne seldom present. Pityriasis versicolor exceedingly common.	Dilatation of stomach quite common (5).	Average temperature at 4 P.M. 101°. Average pulse 96.
		10	20–40	65·0	33·0	0·49	123·5 (3)	0·55									
6	New York Life Assurance cases—																
	(*a*) Chronic.	150	20–40	69·55	35·46	0·509	147·5	—	—	—	—	—	—	—		—	—
	(*b*) Acute.	25	20–40	68·25	34·56	0·506	146·0	—	—	—	—	—	—	—	—	—	—
	(*c*) Above 6 ft.*	18	23–43	72·625	35·65	0·491	163·3	—	—	—	—	—	—	—	—	—	—

(1) The maximum weight in health was always asked for. In the Gateforth cases it averaged 8 lb. more, and in the Armley cases 19 lb. more, than the weights here given. (2) The Jewish palate is low and round; that of the Leeds artisan is high in comparison, while that of the West Riding phthisical shows a still higher *average*, being often high to deformity. (3) The average weight would be lower still but for the inclusion of athletes, of whom we have a considerable number at Armley. See § 9. (4) I have been careful not to confuse cases of simple bronchiectasis. As would be expected, we have many cases of curved finger ends in which there is no clubbing. (5) See § 8

* Death followed insurance after an interval averaging 5½ years.

TABLE II.—*Women and Children.*

Designation.	Age.	Height. Compared with average child.	Weight. Compared with average child.	Chest.	Teeth.	Lungs.	Nasal development.	Hard palate.	Neck glands.
Cases in home for neglected children—	Years.								
(1) Calmette positive (33½% of cases).	8–13	93%	72·4%	Abnormal signs in all; rhonchi in all; râles in a few cases.	Good in 40%, bad in 60%	Breath sounds normal in none.	Good in 50%	Good in 25%	Enlarged in every case.
(2) Calmette negative (66⅔% of cases).	8–13	96%	80·2%	Same as above	Good in 45%, bad in 55%	Breath sounds normal in 40%	Good in 70%	Well developed in 75%	Enlarged in every case.

	Designation	No. of cases.	Age.	Height.	Chest.	Ratio of chest to height.	Weight.	Hard palate.	Philip's glands.	Other glands of neck.	Teeth.	Tonsils.	Adenoids.
				ins.	ins.		lb.						
1	English boys of Leeds council schools.	60	12¼ to 12¾	54	23·6	0·43	70·5	25% defective.	50%	83⅓% enlarged.	Bad generally; 80% with decay.	13⅓% enlarged.	16⅔%
	Dr. Hall's figures from Gentile school in good district.		—	56·17	—	—	72·0	—	—	—	—	—	—
2	Jewish boys of Leeds council schools; not all from one school.	40	12 to 12⅞	56	25·5	0·44	78·0	7·5% defective.	35%	70% enlarged, not grossly.	Very good.	27·5% enlarged	12·5%
	Dr. Hall's figures from Jewish school in good district.		—	56·5	—	—	77·0	—	—	—	—	—	—
	County school.		—	56	—	—	75·0	—	—	—	—	—	—
3	Jewish girls, council schools.	60	12¼ to 13	55·5	25	0·45	82	8·3 defective.	50%	50% enlarged.	Good.	33·3% enlarged.	33·3%
4	Irish boys, council schools.	—	Variable.	Details not to be had.				Approaches Jewish type.	Common.	Common.	Better than English.	Uncommon.	Uncommon.
5	Out-patients (boys and girls) of the Leeds Consumption Hospital.	50	6–16	Almost average	11% below average.	—	10% below average. 14% below Leeds average.	—	Enlarged in nearly all cases.		Generally bad.	Common.	Common.
6	Women patients of the Leeds Consumption hospital, &c.	40	16–40	63·075 inches.	29·2 inches.	0·46	118·39 lb.	35% defective.	55%	60%	50% defective.	—	—

REMARKS.—*No. 1:* 23½% have physical signs compatible with phthisis. Localised percussion dulness apical and Grancher's signs. None had enlarged tonsils, some had abnormal palates; error from nasal intonation was possible. In nearly all cases there was intermittent febrility in personal history. Below average in height, weight, and chest measurement. Most had some defect of palate and bad teeth. *No. 2:* 2·5% have rickets. Localised pulmonary signs in 12·5%. Two gave Still's sign of mediastinal gland enlargement. *No. 3:* Four cases with doubtful signs; one of undoubted phthisis; in all 8·4%. Nostrils much larger than in English. No marked case of rickets. *No. 4:* Rickets is commoner than with Jews, but less common than with English. Signs of phthisis common; several cases are under treatment at Leeds General Infirmary. Afebrile bronchitis is common among Irish children. *No. 6:* Hand ratio 0·45. Hyper-extension slight in 45 %; marked in 35%.

value would not be great. If, for instance, a patient came to me with marked physical signs localised, with round palate and good teeth but *with anæmic soft palate and no enlarged glands*, I should have the fear, even if he had gained weight and improved, that the case might go rapidly wrong at any time. This is, of course, equivalent to saying that absence of enlarged glands helps me in some degree to an adverse prognosis.

§ 7. With regard to skin conditions of phthisicals, I can recall only one case of lupus in ten years among the patients under my care at Armley and Gateforth for pulmonary tuberculosis. Tinea versicolor is especially common at Armley Hospital, which harbours advanced cases, and not common at Gateforth, where only early cases are received. Marked acne is not common; indeed, it is hardly ever found among advanced phthisicals.

§ 8. Several of my phthisical patients with dilatation of the stomach were seen by Mr. B. G. A. Moynihan, who has helped me to the conclusion that this form of atony is of common occurrence among tubercular patients.

§ 9. In a footnote to No. 5 of Table I. I have referred to athletes. We have several in our wards, as well as soldiers, sailors, returned emigrants, and others who might be classed under the general name of "wanderers." It is impossible to shut one's eyes to the fact of their number, and I note that the United States returns (Osler, Rogers) give figures agreeing with this. Thus, mortality from phthisis in the United States is for native-born whites 155·4 per 100,000; among foreign-born whites it reaches the figure of 231·1 per 100,000, In Ireland the mortality from phthisis is 258 per 100,000; among recently immigrated Irish in the United States it amounts to 339·6 per 100,000. It must be borne in mind that few patients who die with pulmonary tuberculosis die from pulmonary tuberculosis; the cause of death is generally a mixed infection. Sooner or later everyone has pulmonary tuberculosis, but only a small minority die from it.

§ 10. In spite of the good figures obtained for Jewish artisans (see No. 2 of Table I.) I have not found Jewish physicians in Leeds enthusiastically impressed with the physical superiority of their people. The Jews descend a pathological incline of their own. They suffer very much, especially in Leeds, from

TABLE III.—*Comparison of Conditions in Phthisical and Non-Phthisical Children.*

—	Age.	Height.	Chest.	Ratio of chest to height.	Weight.	Hand ratio.	Hyperextension.	Hard palate.	Soft palate.	Philip's glands.	Other glands of neck.	Tonsils.	Adenoids.	Remarks.
English boys—		ins.	ins.		lb.									
Average	12–13	61	27	0·44	69	No difference.	—	No conclusions formed.		—	—	—	—	—
Phthisical	12–13	57	25	0·44	62		—			—	—	33½% enlarged.	—	These were children with no ordinary clinical picture of phthisis.
Jewish boys—														
Average	12¾	56	25	0·45	84	No difference.	—	No conclusions formed.		—	—	No conclusions formed.		—
Phthisical	12¾	56	24	0·43	75		—			—	—			See note above. Signs indicative of phthisis were: Grancher's signs, Philip's glands, percussion apical dulness, occasionally basal dulness.
Girls: Rapid cases of phthisis with marked signs.	About and after puberty	Varied.	Below average	—	Much below average	—	Generally present.	High, round.	Anæmic	—	—	No enlargement as a rule.	Not present	Family history generally bad; among these are four girls from one family.

TABLE IV.—*Comparison of Resistant and Non-Resistant Types among Phthisicals.*

Phthisis type.	Age.	Height to weight.	Chest to height.	Hand.		Palate.		Enlarged glands of neck.	Tonsils.	Nose.	Pulse.	Temperature.	Skin conditions.
				Width to length.	Hyper-extension.	Hard.	Soft.						
Resistant.	—	Low ratio.	High ratio.	High ratio.	Absent.	*Round*, with heavy teeth, or *irregular*, with bad teeth.	Red.	Present.	Enlarged tonsils are more often found in the resistant than in the non-resistant type.	Large.	Slow.	Generally low.	Acne if present is of good prognosis.
Non-resistant.	Puberty to 25 years showed most acute cases.	High ratio.	Low ratio.	Low ratio.	Present.	*Round*, with light fine teeth, not decayed, or *narrow*, with bad teeth.	Finely tinted, nearly white.	Generally not prominently present.	—	Narrow nostrils.	Quick.	Low or high; not indicative. See §3.	

TABLE V.—*Illustrative Cases.*

Designation.	Age.	Height.	Chest.	Ratio of chest to height.	Weight in pounds.	Hand ratio.	Hyper-extension.	Hard palate.	Soft palate.	Philip's glands.	Other glands of neck (enlarged).	Teeth.	"Tonsils" (i.e., enlarged tonsils).	Adenoids.	Remarks.
		ins.	ins.												
Miss M. ...	22	64	30	0·47	98	0·42	Present.	Rounded and dome-shaped.	Anæmic.	None.	None.	Beautiful and fine, not heavy.	None.	—	One patient with similar physique has lost three sisters from phthisis.
Mrs. W. ...	30	64	29	0·45	94	0·42	,,	,,	,,	,,	Not marked.	,,	,,	—	One brother died from phthisis; one has the disease now.
Mr. H. ...	20	69	31	0·45	98	0·42	Not regarded; affected by muscular work.	,,	,,	,,	Marked.	,,	,,	—	Extensive bilateral disease. Red line along gums. Alar chest. Ill less than a year.
Mary L. ...	12¾	55·25	23·5	0·43	67·5	—	—	—	—	,,	None.	—	None.	None.	Dulness left apex.
Selina B. ...	12¾	56 625	25	0·44	83·5	—	—	High Λ*	—	Present.	Present.	Many decayed.	,,	,,	Dulness left apex. Old pleurisy.
Herbert M.	12 5/12	48·75	25·5	0·52	75	—	—	—	—	—	,,	—	Present.	—	—
Abraham G.	13	49·375	23·5	0·47	61	—	—	High Λ	—	Present.	,,	Teeth good.	None.	None.	—
Flora B. ...	16	48	—	—	51	Low.	Present.	High O	Anæmic.	,,	None.	,,	,,	,,	A rapid case; she died in less than a year.

* Majority conform to the rule of Palate Λ in slow cases, O in rapid cases.

diseases of nervous origin, such as epilepsy, diabetes, &c. The tendency, also, is to tubercular morbidity, not to mortality. The Jews who have died in our hospitals at Gateforth and Armley have generally died with symptoms of meningitis. Among Jewesses I have found a frequent condition of floating kidney.

§ 11.—Cases of hæmoptysis form a class by themselves independent of physique. Many such cases are found among tall, fine, apparently robust men. I have with the matrons of Gateforth and Armley run over the list of deaths from sudden hæmoptysis; most of the men were above the average in height and in most cases above the average in weight. We have had few cases among women. To increase weight rapidly is to increase any present liability to hæmoptysis. (See No. 6 (*a*.) of Table I.)

§ 12.—With regard to the frequency of phthisis in young subjects, it may be pointed out that in Ireland phthisis does not account for such a number of deaths at an early age as in England and Scotland. Sir John Byers states that the highest death-rates in Ireland are between 15 and 45 years. He found that in 1906 there were in that country 152 deaths from phthisis of children under 5 years of age, 140 of children from 5 to 10 years, and 367 of children from 10 to 15 years. In Scotland Philip records the following deaths from phthisis among children [1]:—

Age.	Under 1 year.	1–4 years.	5–9 years.	10–14 years.
Number of deaths ...	50	175	150	294
Rate per 100,000 ...	4·2	4·1	3·0	6·2

Cummins remarks: "The mortality in the United States and in Great Britain, highest in the first year, sinks rapidly through childhood to rise after puberty." Philip's figures show a rise before puberty.

Leeds.

A SYMPTOM-COMPLEX IN RUPTURED ABDOMINAL HYDATID.

BY J. E. BARLING, M.B., CH.M. SYD.,
AND
D. A. WELSH, M.A., M.D. EDIN.,
PROFESSOR OF PATHOLOGY IN THE UNIVERSITY OF SYDNEY.

(*From the Laboratories of Pathology in the University of Sydney.*)

THE facts here presented have reference to a series of six cases of hydatid disease complicated by rupture or leakage of the cyst into the peritoneal cavity. In five of the cases the cyst was situated in the liver, in the remaining one in the spleen. The cases all occurred within a period of 18 months. The symptom-complex to which we would draw attention includes (1) eosinophilia, (2) peritonitis with effusion, and (3) urticaria.

1. *Eosinophilia.*—In our paper on the leucocytosis of hydatid disease [2] we showed that eosinophilia is by no means an invariable accompaniment of hydatid infection in the human subject. As a matter of fact we found that in 50 per cent. of the cases examined the blood change was a marked one, in another 25 per cent. the change was moderate, whilst in the remaining 25 per cent. it was entirely absent or so slight that it was of no use from a diagnostic point of view.

But so far as our present experience goes, we have found eosinophilia to be a marked feature of every case in which the cyst has ruptured or leaked into the abdominal cavity. This is, of course, precisely in accordance with what one would expect.

The number of eosinophiles present in the blood in the six cases varied considerably. In three of them the reaction was excessive, the actual figures being in the first case 8580 eosinophiles per cubic millimetre, or a number equal to 54 per cent. of the leucocyte content of the blood; in the second case 8200 eosinophiles per cubic millimetre, or a number equal to 47 per cent. of the leucocytes; and in the third case 5440 eosinophiles per cubic millimetre, or a number equal to 34 per cent. of the total leucocytes.

In two of the remaining cases the blood change was a marked one, there being in one of them 1628 eosinophiles per cubic millimetre, a number equal to 22 per cent. of the total leucocytes, and in the other 1320 eosinophiles per cubic millimetre, a number equal to 12 per cent. of the leucocytes present.

In the one remaining case the reaction, though slight, was definite, there being 354 eosinophiles per cubic millimetre, a number equal to 5·6 per cent. of the total leucocytes.

2. *Peritonitis with effusion.*—The second outstanding feature of these cases of ruptured abdominal hydatid is the peritonitis set up by the presence of the hydatid material in the peritoneal sac. The hydatid contents would seem to be very irritating to the peritoneum, so that whether the rupture be small, resulting only in the escape of a small amount of material, or whether the rupture be large, resulting in the escape of the whole cyst and its contents, an intense reaction on the part of the peritoneum is set up. The most noticeable feature of this peritonitis is the large amount of fluid poured forth. In two of the cases, where a periodic leakage had taken place, the most marked clinical feature was the large amount of fluid in the abdominal cavity, suggesting tubercular peritonitis. In one of these cases the history of abdominal swelling dated back for nearly three years; in the other for two months.

In two of the cases in which the rupture had been followed by the sudden projection of the whole of the contents of the cyst into the abdominal cavity, and in which some time had elapsed between rupture and operation, the omentum was found spread out over the intestines, having become converted into a thickened gelatinous membrane. In this way a sac had been formed between the anterior abdominal wall and the altered omentum, which contained bile-stained fluid, shreds of lymph, and broken-down hydatid membrane, whilst the remains of the cyst in the liver were becoming shut off by thick, fleshy adhesions.

3. *Urticaria.*—The third feature is the urticaria which attends the rupture of the hydatid cyst. The association between ruptured hydatid cyst and urticaria has long been recognised and is referred to as a sign of importance.

In the cases which have come under our observation it has not been invariably noticed. In two of the six cases no history of a rash could be obtained, although careful inquiries were made on this point. In the other four cases urticarial rashes were noticed by the patients, coming on soon after the rupture, lasting for a day or two, and then passing off. In one case there was a history of recurring attacks of urticaria, the attacks in all probability coinciding with a periodic escape of hydatid fluid into the abdominal cavity.

In reviewing the results of our examination of the leucocyte reaction in hydatid disease, we thought that these six cases of ruptured abdominal hydatid were of sufficient interest and importance to warrant us in placing them on record. We think, too, that we are justified in saying that the condition has a very definite and distinctive symptom-complex, the main points to be relied upon in coming to a diagnosis being (1) the eosinophilia, (2) the presence of free fluid in the abdominal cavity, and (3) the appearance of urticaria. Of these three phenomena the blood reaction and the peritoneal reaction are the most constant. Urticaria, also, is probably a constant phenomenon, but may pass unnoticed by the patient. In addition, we would point out that the presence or absence of eosinophilia is a matter of considerable importance in the differential diagnosis of certain cases where free fluid in the abdominal cavity is the most salient clinical feature.

We beg to thank the honorary and resident staff of the Royal Prince Alfred Hospital for their kind assistance.

[1] Byers and Philip, quoted in Kelynack's Tuberculous Diseases of Childhood. See also Dr. J. G. Emanuel, THE LANCET, May 15th, 1909, p. 1369.

[2] Australasian Medical Gazette, August 20th, 1906.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.—As the result of the examinations for entrance scholarships held on Sept. 19th, 20th, and 21st, the following awards have been made:—University Scholarships: 50 guineas, M. O. Raven, Trinity College, Oxford. Scholarship of 50 guineas divided: J. P. Davies, University College, Cardiff; and W. H. Edmunds, University College, Cardiff; bracketed equal. Open scholarships in Natural Science: £145, D. Menzies; £25, H. B. Taylor, St. Paul's. Epsom Scholarship (by nomination): R. M. Handfield-Jones.

CLINICAL SURGERY IN JAPAN.

BY YOSHIHIRO TAKAKI, M.R.C.S. ENG.,
PROFESSOR OF SURGERY, TOKYO CHARITY HOSPITAL MEDICAL COLLEGE.

(*Concluded from p. 933.*)

IV.—ACUTE APPENDICITIS.

IN this paper it is not my purpose to discuss the whole aspect of appendicitis, but from my experiences during the last four years (1906–10) I should like to call attention to the clinical aspects—especially the danger signs in the early stage and also the treatment of the acute cases.

Sex.	Years of age.	Previous history.	Appendix.	Result of treatment.	Condition.
M.	16	Nil.	Removed.	Cured.	Localised abscess.
M.	24	1 attack.	Not found.	Died.	Diffuse peritonitis.
M.	22	1 slight attack.	,,	Cured.	Adhesions.
F.	31	1 attack.	Not removed.	Fæcal fistula.	Adhesions with small abscess.
M.	25	Nil (typhoid fever).	Removed.	Cured.	Localised abscess.
M.	21	Nil.	,,	,,	,,
F.	31	,,	Not removed.	Died.	Diffuse peritonitis.
M.	25	Nil (typhoid fever).	Removed.	Cured.	,,
M.	32	Nil (diarrhœa).	,,	,,	Localised abscess.
M.	22	1 attack.	Not found.	Died.	Diffuse peritonitis.
M.	17	Nil.	Not removed.	Cured.	Adhesions with small abscess.
M.	11	,,	,,	,,	Localised abscess.
M.	18	,,	Removed.	,,	Adhesions.
M.	18	,,	,,	,,	,,
M.	16	,,	Not found.	,,	Localised abscess.
M.	34	1 attack.	Removed.	,,	Adhesions.
M.	24	Nil.	Not found.	,,	Abscess.
M.	25	1 attack.	Removed.	,,	Adhesions (pus in appendix).
M.	26	Nil.	,,	,,	Abscess.
F.	53	2 attacks.	Not removed.	,,	Abscess (spreading beneath the skin).
M.	35	Nil.	Removed.	,,	Adhesions.
M.	28	,,	,,	,,	Abscess.
F.	30	Several attacks.	,,	Died.	Tumour (T.B.).
M.	22	Nil.	,,	Cured.	Chronic appendix.
F.	33	1 attack.	Not seen.	Died.	Diffuse peritonitis.
M.	20	Nil.	Not found.	Cured.	Abscess.
M.	20	,,	Not removed.	,,	Chronic adhesions.
F.	14	,,	Removed.	Died.	Diffuse peritonitis.
M.	14	Nil (indigestion).	Not removed.	,,	,,
M.	21	Nil.	Removed.	Cured.	Abscess.
M.	26	,,	Not removed.	Died (consumption).	,,
M.	25	Nil (typhoid fever).	Removed.	Cured.	Diffuse peritonitis.
F.	12	Nil.	,,	Died.	,,
M.	25	Several attacks.	,,	Much improved.	T. B.
M.	35	Nil.	,,	Cured.	Abscess.
M.	21	Nil (indigestion).	,,	,,	,,
M.	57	Nil.	No operation.	,,	—
M.	31	,,	Removed.	,,	Diffuse peritonitis.
M.	32	Several attacks.	Not removed.	,,	Chronic adhesions.
M.	33	Nil.	Removed.	,,	Adhesions.
F.	16	,,	,,	Died.	Abscess.
M.	45	Nil.	Not found.	Cured.	Abscess.
M.	20	1 attack.	—	Much improved.	T.B.
M.	22	Nil.	No operation.	Cured.	No operation.
M.	22	1 attack.	,,	Much improved.	T.B.
M.	20	Nil (typhoid).	Not removed.	Cured.	Adhesions.
M.	22	Nil (gastritis).	Removed.	,,	Adhesions and small abscess.
F.	37	Nil.	No operation.	,,	No operation.
M.	21	,,	,,	Died.	Rupture of abscess.
M.	27	,,	,,	Cured.	No operation.
M.	27	1 attack.	Removed.	,,	Small abscess.
F.	23	Nil.	,,	,,	Diffuse peritonitis.
M.	35	Several attacks.	Not seen.	,,	Large abscess.
M.	27	Nil.	Removed.	,,	Adhesions.
M.	16	,,	,,	Died.	,,
M.	19	,,	Not seen.	,,	Diffuse peritonitis.
M.	28	1 attack.	Removed.	Cured.	Adhesions.
M.	31	Nil.	,,	,,	Abscess.
M.	11	Nil (intestinal catarrh).	,,	,,	,,
M.	46	Nil (typhoid dysentery).	,,	,,	,,
M.	25	Nil.	,,	,,	Diffuse peritonitis.
M.	29	1 attack (dysentery).	,,	Died.	,,
M.	38	Nil.	Not seen.	,,	,,
M.	20	2 attacks.	Not removed.	Cured.	Abscess.
M.	20	,,	No operation.	,,	No operation.
M.	26	Nil.	Removed.	,,	Abscess.
F.	10	,,	,,	,,	Diffuse peritonitis.
M.	23	,,	,,	,,	Abscess.
M.	24	Nil (typhoid fever).	,,	,,	Adhesions.
M.	18	,,	Not removed.	,,	Diffuse peritonitis.
M.	24	Nil (indigestion).	,,	,,	,,
M.	24	1 attack.	Not found.	,,	Adhesions.
M.	24	Nil.	Removed.	,,	Diffuse peritonitis.
M.	39	,,	Not removed.	,,	Adhesions.
M.	44	Nil (typhoid; indigestion)	Removed.	,,	Diffuse peritonitis.
M.	28	2 attacks.	Not seen.	Died.	,,
M.	18	Nil.	Removed	,,	,,
M.	41	Several attacks.	,,	Cured.	Adhesions.
M.	18	Nil.	,,	,,	Diffuse peritonitis.
M.	53	,,	,,	Died.	,,
M.	23	,,	Not removed.	Cured.	Abscess.
M.	29	,,	Removed.	Died.	Diffuse peritonitis.
M.	27	,,	Not removed.	Cured.	Adhesions.
M.	54	,,	No operation.	Died.	No operation.
F.	35	2 attacks.	,,	Cured.	,,
M.	25	Nil.	,,	,,	,,
F.	36	,,	,,	,,	,,
M.	20	,,	,,	,,	,,

15 other cases of acute or subacute appendicitis (9 males; 6 females total, 105 cases.

CASE 1.—A business man, aged 25 years, was admitted on Dec. 16th, 1906, and was discharged on Feb. 16th, 1907. Previous history.—Had suffered from typhoid fever in China in 1904. Present history.—He had a sudden pain in the lower abdomen on Dec. 14th. This was followed by general enlargement of abdomen with fever. On admission facies abdominalis was typical. The abdomen was generally distended, and the resistance was strong. The patient could not bear to be touched in the lower abdomen owing to pain. No action of bowels. Vomiting present, mostly bile. Tongue covered with white fur. There was loss of appetite. Temperature 36·2° C. Pulse 130, small, weak. Treatment.—Immediate laparotomy was performed. Two incisions were made—one in the mid-line and the other in the semilunar line. The appendix was swollen and red, almost gangrenous. There was a small perforation at its root. It was excised, and the stump was closed. The cavity was washed clean with normal saline solution owing to the extensive peritonitis, and the operation was finished by closing the mid-line incision and leaving the other open. The patient developed acute dilatation of the stomach a few days after the operation, and brought up a large quantity of greenish fluid several times. A stomach bougie was passed and the stomach was washed out several times. The patient, in spite of this complication, was completely cured.

CASE 2.—The patient, a female, aged 53 years, was admitted on Dec. 18th, 1906, and was discharged on Jan. 20th, 1907. Previous history.—She had suffered from general œdema at the age of 38 years and was cured in 50 days. About Jan. 5th, 1906, she had had a painful tumour in the appendix region without rigor, high fever, or vomiting She never left her work and got well in 10 days. Again the same painful tumour appeared in the middle of July and disappeared in 12 days. Present history.—On Nov. 25th it appeared again. The pain had been getting severe with increase in the size of the tumour. From about the 15th the fever became high and the tumour seemed to be getting softer. On admission the patient was somewhat anæmic and her appetite was diminishing. There was neither nausea nor vomiting. The bowels were constipated. There was a tumour extending from just above Poupart's ligament and the symphysis pubis below to the umbilicus above. It was limited by the anterior superior iliac spine outside and the linea alba on the inner side. The central portion was red and fluctuating. It was hot and tender and measured 9 centimetres long and 10 centimetres across. The hip was slightly flexed. The temperature was 37·6° C. and the pulse was 119. Immediate operation was proceeded with. The abscess contained a large quantity of greenish-yellow fæcal pus and turned out to be an appendix abscess breaking through a small hole in the abdominal wall into the subcutaneous tissues.

CASE 3.—The patient, a male, 35 years of age, was admitted on Feb. 16th, 1909, and was discharged on May 15th. Previous history.—During the previous four years he had had several acute attacks of appendicitis. Present history.—On Jan. 26th, 1909, he had slight lumbar pain, which got well in a week. On Feb. 7th the pain reappeared with rigor and fever. Besides there was noticed some dilatation of the appendicular region and the right flank. The pain became more severe and the patient came to the hospital. On admission he was found to be generally run down and anæmic. The abdomen was dilated on the right side, especially from the flank to behind more than in front. The swelling was tender, soft, and fluctuating. The temperature was 37·5° C. and the pulse was 104. The patient was immediately operated upon, an enormous quantity of fæcal, gaseous, yellow pus mixed with blood clot being let out through two incisions, one in front and one at the back. The appendix was not seen. Complete cure resulted after 91 days.

CASE 4.—The patient, a medical student, aged 23 years, was admitted on Nov. 29th, 1907, and was discharged on Jan. 25th, 1908. The previous history of the case was one of pleurisy, malaria, beri-beri, &c. Present history.—The illness had commenced with sudden fever and pain on Nov. 20th. There was also vomiting. The patient becoming worse he came to the hospital. On admission the abdomen was found to be generally distended and resistant. The appendix region was prominent and very tender. Fluctuation was felt. The skin was hypersensitive. The temperature was 39° C. and the pulse was 95. Treatment.—Immediate operation. A large abscess containing a fæcal purulent discharge was discovered. The appendix was nearly four inches long, and was thin, greenish white, and easily tearable. It was seen on opening the peritoneum, and by pulling slightly it came out of the wound without cutting. It contained seven fæcal stones. The wound was left open, gauze packing being employed. Fever persisted for a long time after the operation, but complete cure eventually resulted.

CASE 5.—The patient was a student, aged 24 years. He was admitted to hospital on March 12th, 1908, and was discharged on May 20th. He had had one attack in 1907, and had been treated in this hospital. He had left the hospital with a fæcal fistula on Dec. 6th, and had been attending as an out-patient. Present history.—On March 11th the patient experienced a sudden pain near the old would, and this was followed by rigor and fever with dilatation, so he at once came to the hospital again. On admission there was a large quantity of discharge from the sinus. Around the wound there was some distension and much tenderness. Treatment.—The sinus was enlarged and a fair quantity of pus was let out. It was impossible to find the appendix owing to dense adhesions, and so it was not removed. For a time the patient did well, but the fæcal fistula again opened, and in spite of several small operations it would not close. The patient left the hospital on May 20th Against my advice he underwent an extensive operation for radical cure in another hospital, and he died within 24 hours from diffuse peritonitis.

CASE 6.—The patient, who was 18 years of age, was a geta-maker. He was admitted on June 9th, 1909, and was discharged on July 26th. There was no previous history. Present history.—In the early morning of June 5th he felt a sudden severe pain in the appendix region, which gradually became more severe with the loss of appetite, rigor, and fever. Later there was vomiting with abdominal dilatation. On admission the patient's face wore a painful expression. The abdomen was generally distended and rigid. There was strong resistance with tenderness all over. No tumour was felt in the appendicular region. The temperature was 37·5° C., and the pulse was 102. Treatment.—Immediate operation. There was diffuse peritonitis. A large quantity of greyish-yellow pus was let out. The appendix was gangrenous and perforated. The patient had a suppurative parotitis seven days after operation, and it was opened on the 17th.

CASE 7.—The patient, a medical man, aged 53 years, was admitted on June 19th, 1909. There was no previous history. On June 15th he felt a sudden pain in the lower abdomen. On the next day, feeling a tumour in the appendicular region, he came to the hospital. On admission he was found to be suffering from loss of appetite and general malaise. There was a tender, hard tumour in the appendicular region. The temperature was 38·5° C. and the pulse was 104. Treatment.—The patient was advised to undergo the operation at once, but he being a medical man and feeling better after admission than when at home, unfortunately refused. So I had to treat him with an ice-bag, &c. The swelling seemed to get smaller and he was altogether improving, but on the 20th he got up himself, feeling well, and directly after he complained of very severe pain in the abdomen, with difficulty in breathing. So the operation was done at once. A thin purulent fluid was let out. The appendix, perforated, greyish-white, and gangrenous, was removed. The patient did not improve and he died on the 22nd. The case was one of sudden rupture of an abscess into the peritoneal cavity.

CASE 8.—The patient, who was a military officer, 54 years of age, was admitted on August 27th, 1909. The previous history of the case was one of hæmorrhoids, gonorrhœa, bubo, and epididymitis. Present history.—About a month previously the illness had begun with a sudden pain in the appendicular region and fever. Later a hard lump was felt. Under treatment the patient had been getting gradually better until about a week ago before admission. Since that time occasional rigor and high fever had appeared and he had not been getting worse. On admission the patient presented an anæmic and very much run-down appearance. The abdomen was not enlarged, except near the right costal margin. In the appendicular region there was a small tumour, which was slightly tender and hard. Some tenderness was present in the region of the liver. There were rigor and high temperature at intervals. Treatment.—After a few days' watching, seeing the gradual disappearance of the tumour and the enlargement of the liver, this case was diagnosed as an abscess of the liver secondary to acute appendicitis. So an incision was made through the semilunar line on to the liver, and by probing with a trocar a fairly large abscess was evacuated from the right lobe. Subsequently the temperature went down for a few days, but it rose again with rigor, and a small swelling was noticed over the left lobe. So another incision was made over this under local anæsthesia and the pus was let out. On and off six abscesses were evacuated altogether, but the patient at last succumbed to general weakness. The diagnosis was pyæmic multiple abscesses of the liver.

CASE 9.—The patient, a medical student, 25 years of age, was admitted on July 21st, 1907, and was discharged on Sept. 22nd. No previous history was obtained. Present history.—More than two months previously the illness had commenced with acute abdominal pain, and the patient had entered the Matsuyama Hospital. There his case was diagnosed as peritonitis following acute appendicitis. I was called in for consultation and he was transferred to the Tokyo Hospital. On admission it was found that there was an absence of appetite and the patient was thin and in a weak state. The abdomen was not enlarged, but there was tenderness in the lower abdomen. The bowels were not acting well and recourse was had to the enema. Treatment.—Seeing the very weak condition of the patient the operation was delayed until more general improvement took place. Luckily at the end o that time a large amount of pus was passed in the urine suddenly. The discharge of pus lasted for a week and the urine cleared. The patient showed a rapid improvement after this and was cured without an operation. The pus was probably due to the rupture of an abscess into the bladder.

Age.

Between 10 and 20 years of age	.....	18·8	per cent.
,, 20 ,, 30 ,,	.....	52·2	,,
,, 30 ,, 40 ,,	.....	20·0	,,
,, 40 ,, 50 ,,	.....	4·4	,,
,, 50 ,, 60 ,,	.....	4·4	,,

From this table it will be seen that over 90 per cent. of all cases occurred before the age of 40 years. The most frequent time is between 20 and 30 years of age (52·2 per cent.). The youngest was 10 years of age and the oldest 57 years.

Although the lowest age was 10 years in the above table, I have met with one case in which the patient was aged only 3 years and 5 months. It was not described with these cases, as the patient was operated on for the intestinal obstruction. The patient seemed to have suffered from occasional abdominal pain for about four weeks before admission. For the last five days the pain had been frequent and more severe. He had not passed a motion for a week. On admission the abdomen was found to be generally swollen, especially on the right side. He seemed to have frequent pain at intervals. There seemed to be an indefinite tumour in the right iliac fossa. The temperature was low. This case was diagnosed as intussusception, but on opening the abdomen it was found that the intestinal obstruction was due to the inflammatory adhesion of the tip of the appendix to the back of the cæcum. Into the loop formed by the appendix the small intestine slipped and was strangulated. The patient made an uninterrupted recovery.

The disease is most frequent at the most active period of life—the period when persons are liable to various exposures and to indiscretion in taking food. The non-frequency in old age is no doubt due to the gradual atrophy of the appendix, which takes place as age advances. The atrophic changes have been borne out by several well-known reports.

Sex.

Females	20	= 19	per cent.	Total 105.
Males	85	= 80·9	,,	

Percentage of Males.

Sonnenburg	1000	=	67	per cent.
Roux	670	=	53	,,
Deaver	300	=	61	,,

The percentage of my cases is larger than is that of others, but it is probably accounted for by the greater number of acute cases. Out of 105 cases there were only six chronic cases. Of the mild cases not operated on there were 24 cases:—

Female	9	=	37·5	per cent. } Total 24.
Male	15	=	62·5	,, }

Thus among the milder cases the percentage lessens. There is no doubt that the disease more often occurs in males than in females. Whether this is due to the anatomical condition of the blood-supply I cannot say. Perhaps it is partly due to that, but I think mainly to the less exposure to excitement and trauma, and also to less indiscretion in diet. Moreover, the lesser percentage in Japanese females may be accounted for by the less excitable and quieter life led compared with the lives of Europeans or Americans.

Previous History (Acute Cases only).

Of the 77 acute cases operated on the following is the list:—

Nil	47	Diarrhœa (obstinate)	2
One attack	10	Indigestion (habitual)	4
Two attacks	4		—
Several attacks	3	Total	77
Typhoid fever	7		

Etiology (Acute Cases only).

Trauma	2	Those who had some gastric or intestinal trouble	12
Constipation	2	Fæcal stone	10
Indiscretion in food	9	Worm	2
Those who had had attacks before	17		—
		Total	54

Two cases had the distinct history of a blow in the abdomen just before the attack, and in two other cases there was constipation for some time before operation. Nine cases were directly attributed to over-eating just before the attack. In 17 cases there had been a previous attack. In 12 cases the patients had suffered from some gastric or intestinal trouble previously, and in ten cases there had been one or more fæcal stones.

As regards the fæcal stone it seems to act as the cause in a few cases. I had one case in which the inflammation was limited to the tip of the appendix, where a fæcal stone was lodged. But I have seen many cases in which, although the stone was present in the appendix, yet no abnormal symptom showed itself during lifetime.

There is no doubt that the previous attacks and intestinal illnesses often lower the resisting power of the appendix and make it liable to an attack.

The indiscretion in taking food must be counted as one of the chief direct causes. But in the greater number I cannot find any immediate cause.

Twice I have seen a worm in the pus, but whether worms were the cause of the attack I cannot say.

As regards the bacteriological causes, unfortunately I have examined only 10 cases with the following results:—

1 case, bacillus coli.
1 ,, bacillus coli and staphylococcus aureus.
1 ,, ,, ,,
1 ,, ,, ,,
1 ,, bacillus coli and streptococcus pyogenes.
1 ,, bacillus coli.
1 ,, bacillus coli and staphylococcus aureus.
1 ,, ,, ,,
1 ,, bacillus coli.
1 ,, bacillus coli and staphylococcus.

From these it will be seen that the bacillus coli is generally present and that the mixed infection is more frequent. Also the presence of streptococcus is rare. These cases are very few and they must not be taken as definite. I hope to make a further study.

Symptoms and Signs.

1. *Pain.*—The pain is generally severe and commences in the right iliac fossa, but it may be indefinite abdominal pain, or may be felt around the umbilicus, in the epigastrium, or on the left side. I had one case in which the patient complained of pain in the vagina. Another patient complained of pain in the lumbar region at the commencement. The degree of pain varies in different individuals, but generally very severe pain denotes the bad cases. The pain may be continuous or may occur at intervals. The sudden disappearance of pain often means serious trouble with the appendix.

2. *Fever.*—In a few cases the fever does not rise much above the normal, but usually it is high at the commencement of illness and will then become lower in a few days. The continuance of high fever for over five days is not a good sign. The sudden fall of temperature after being high is a dangerous sign and denotes gangrene or perforation of the appendix—that is, if no other improvement is present. In some slight cases the patient's temperature did not rise above the normal.

3. *Rigor.*—This is not always present, but the presence of frequent rigors at the commencement ought to make us think of some serious complication.

4. *Vomiting.*—This also is not always present. Frequent vomiting at the beginning is usually a serious sign, and we must be ready to operate at once.

5. *Diarrhœa and constipation.*—In a few cases there was diarrhœa, but in most cases there was constipation.

6. *Tumour.*—At first the tumour is not felt and the abdominal wall is somewhat rigid over a more extensive area, but usually in a short time a hard tender tumour is felt in the appendix or right iliac region. This is due to inflammatory induration and adhesions. In a few cases the tumour was due to the dilatation of intestine owing to adhesions, but a hard tumour with extreme tenderness and high temperature meant the presence of pus. Of course, there are exceptions, but under those circumstances I have nearly always found pus. When there is fluctuation there cannot be any doubt. The tumour is dull on percussion when near the surface, but is resonant if covered over with intestines. The omentum as the protector of the peritoneal cavity usually forms part of the tumour. Several times I have found the omentum covering the appendix completely. Later, when suppurating, the tumour becomes soft and fluctuating.

7. *Rigidity.*—The abdomen is generally found to be held more rigid than usual. The area is more extensive at the commencement when the inflammation is not localised than at the later stage. This often misleads the inexperienced in diagnosing. Later, when localised the rigidity more or less is limited to the right iliac fossa or over the tumour. The movements of the abdominal wall in respiration are limited according to the extent of the inflammation. In very severe cases the respiration may be wholly thoracic, as in diffuse peritonitis or when the sudden rupture of an abscess takes place.

8. *Frequent micturition.*—In a few cases the patient complained of frequency of micturition. In these cases the appendix was present in the pelvis or the inflammation extended to the bladder.

9. *The flexion of the right leg.*—In diffuse peritonitis the patient usually holds his legs flexed, but in certain cases of acute appendicitis the right leg alone is often kept in that position, and owing to the pain the patient cannot stretch his leg. This was generally due to the presence of an inflamed appendix behind the ilio-psoas muscle.

10. *Hypersensibility of the skin.*—By some this sign is said to be diagnostic of acute appendicitis. The area of hypersensibility is usually extended over the right iliac fossa round the right flank to the lumbar region. Sometimes it may be beyond the linea alba to the left side. Even the lightest touch causes pain. It is said to be characteristic of this disease, and by this we can diagnose it from other inflammatory abdominal diseases. I have found this sign in a few cases, but not always.

11. *Rovsing's sign.*—This sign was only obtained in a few cases. Of course, in some cases it was very difficult to ascertain it owing to the tenderness.

12. *Leucocytosis.*—As I have not had much experience with this method I should like to give the conclusions arrived at by Dr. L. B. Wilson of Rochester, Minnesota.

1. Sondern's hypothesis, that the polynuclear percentage is an index of infection, the total leucocytosis an index of body reaction, and their proportional relationship an index of resistance, seems to be supported. The more important exceptions to this are in moribund cases, and perhaps in children.

2. As practically applied in early appendicitis cases the disproportional polynuclear increase indicates a more or less severe infection, which is not being properly cared for by the body. The higher and longer this line, the more serious the case.

3. A proportional polynuclear percentage or a disproportionate polynuclear decrease, if well marked, indicates mild or well-cared-for infection.
4. The value to the surgeon in early cases is but little, since most early cases are operated on. It may be of some value negatively in indicating that the supposedly acute exacerbations of chronic appendicitis are not present.
5. In cases between the fourth and fourteenth days, the resistance-line is of great value to the surgeon in indicating the patient's poor resistance and the necessity for immediate operation. The operative findings in these cases bear out the leucocyte determination with wonderful accuracy.
6. A horizontal or falling resistance-line indicates that the patient is taking care of the infection. If the infection is severe, as shown by a high though falling line, the patient may perhaps best be given medical treatment rather than submitted to operation.
7. In any severe case the resistance-line should be determined daily; and should the line begin to rise, the patient may be submitted to operation.

13. *Abscess.*—When the tumour does not end in resolution an abscess is generally formed. The occurrence of abscess may be indicated by the temperature persisting at its original high level, or more often by the increase in rapidity of the pulse while the temperature becomes lower. Fluctuation is rarely detected at first, but the presence of a hard tumour with extreme tenderness and high fever generally denotes the presence of pus. So it is bad surgery to wait for the fluctuation before interfering. Not infrequently the tension within the abscess may burst suddenly through the surrounding adhesions into the peritoneal cavity and set up diffuse peritonitis. Again, it may burst through the bladder wall and be evacuated with the urine, as in one of my cases, or may burst through the external abdominal wall or into the intestinal canal. When the abscess burrows outwards, the overlying skin becomes œdematous, tender, red, and raised. In two of my cases I found the abscess burrowing through a small hole in the wall beneath the skin and there forming a large subcutaneous abscess. In these cases I was not quite sure whether the abscess was connected with the peritoneal cavity or simply an extraperitoneal abscess until I opened and examined the inside. Again, the abscess is sometimes found in the pelvis. This case could not be distinguished from simple pelvic cellulitis until the operation.

In one case of mine the abscess appeared behind instead of in front, so that a fluctuating tumour was found in the lumbar region.

Undoubtedly in some cases, even when an abscess is formed, the patient gets well without the pus being evacuated. I have seen one case in which the presence of pus was confirmed by puncture and by a fair-sized fluctuating tumour, but it disappeared the next day. I think this case was evacuated through the intestinal canal. Unfortunately, the motion after puncture, although said to have been suspicious, was thrown away and the point could not be ascertained. But there cannot be any doubt that the presence of a small quantity of pus is not against resolution taking place.

Finally, I should like to mention the symptoms and signs of the sudden rupture of an abscess into the peritoneal cavity as I saw one at the time: (1) Sudden excruciating pain in the abdomen running across from the appendicular region to the epigastrium; (2) difficulty in breathing; (3) subnormal temperature; (4) rapid pulse; (5) the disappearance of the tumour in the right iliac fossa; (6) rigidity of the abdominal wall; (7) the abdomen contracted and not distended; and (8) cold sweat.

14. *Diffuse peritonitis.*—This is generally due to perforation or gangrene of the appendix and only occasionally to rupture of a localised abscess. The following conditions may be noted: (1) Usually sudden; (2) rigidity of abdominal wall; (3) pain and tenderness all over; (4) gradual disappearance of abdominal respiration; (5) no passage of gas or fæces; (6) nausea and vomiting; (7) temperature subnormal at first; (8) pulse rapid from the first; (9) the abdomen at first contracted and then rapidly distended; (10) lies in the typical position on his back with legs flexed; (11) facies Hippocratica (abdominalis); and (12) in most severe cases the patients die quickly with toxæmic symptoms. Diffuse peritonitis is the most serious complication of appendicitis, and the only remedy for it is to prevent its occurrence by an early operation in severe cases, and when it occurs by immediate operation except in cases with extreme shock. The course of these cases in which diffuse peritonitis has occurred is more rapid than other cases, as is shown in the danger table.

15. *Intestinal obstruction.*—The obstruction is sometimes caused by paralysis of the intestine or by inflammatory adhesions. I should like to give a brief history of one case. It was that of a young lady, aged 24 years, with a history of constipation of about a week's duration, gradual distension of the abdomen, abdominal pain, and tenderness with slight fever. On examination the abdomen was found to be enlarged generally, and there was a large tumour of the size of a fist just to the right of the umbilicus. It was tender, and although dull on percussion there was suspicion of fluctuation. The temperature was not above normal, but the pulse was rapid and above 100. Nothing was obtained by an enema. Nausea was present. The diagnosis was uncertain except that the case was one of intestinal obstruction. So laparotomy was performed. On opening the abdomen the

Sex.	Years of age.	The days between commencement and illness.	On admission.		Condition.
			Pulse.	Temperature. Centigrade.	
M.	22	12	90	36·5	Inflamed.
M.	20	14	80	36·5	Abscess.
M.	16	10	90	37·4	Big abscess.
F.	33	5	120	36·5	Diffuse peritonitis.
F.	14	5	115	37·7	,,
M.	14	10	120	37·8	,,
M.	24	3	98	36·2	,,
M.	25	3	130	37·7	,,
M.	31	5	120	37·7	Abscess.
M.	21	4	84	37·4	,,
F.	31	12	103	36·8	Inflamed.
M.	34	9	76	36·6	,,
M.	22	10	78	38·2	Gangrenous abscess.
M.	24	1 (within 24 hours. Only 19 hours.)	120	37·2	,,
M.	25	7	80	37·5	Diffuse peritonitis.
M.	33	Several attacks for some days.	130	36·6	,,
M.	37	10	120	37·0	,,
M.	27	7	90	37·5	Abscess.
M.	20	7	130	37·0	Diffuse peritonitis.
M.	23	7	110	38·0	Abscess.
M.	35	5	66	37·0	Inflamed.
F.	53	14	119	37·2	Diffuse peritonitis.
M.	26	6	80	37·0	Abscess.
M.	25	24	75	36·5	,,
F.	23	2	125	39·1	Diffuse peritonitis.
M.	27	9	80	37·8	Adhesions.
M.	18	14	65	37·3	,,
M.	18	8	80	36·5	Inflamed.
M.	11	10	120	38·2	Abscess.
M.	22	6	88	37·8	Gangrenous cæcum.
M.	32	3	100	37·5	Abscess.
M.	28	4	104	37·7	,,
M.	14	28	102	37·0	Adhesions.
F.	20	10	96	38·2	Abscess.
F.	33	4	120	37·4	Diffuse peritonitis.
M.	14	11	120	37·7	,,
F.	14	4	112	38·5	,,
M.	25	2	102	37·4	,,
F.	12	6	124	38·3	,,
M.	35	11	72	37·5	Abscess.
M.	21	4	98	36·4	Grangrenous abscess.
M.	57	—	80	37·5	No operation.
M.	31	10	125	38·5	Diffuse peritonitis.
F.	16	8	100	37·4	Gangrenous abscess.
M.	26	4	82	37·2	Abscess.
M.	20	8	84	38·0	Adhesions.
M.	22	2	124	37·5	Abscess.
F.	37	—	98	39·4	No operation.
M.	27	—	70	36·1	,,
M.	27	4	106	37·3	Small abscess.

tumour was found to be an abscess situated on the right side of the spine. No appendix was seen in the peritoneal cavity. The small intestine was paralysed and gangrenous patches were detected. As it was risky to incise from the front through the peritoneal cavity, another incision was made from the right side. Through the latter incision the abscess was reached and fæcal-smelling pus was evacuated. It was a post-peritoneal appendix abscess, placed wholly outside the peritoneum. This patient died three days afterwards without the obstruction being relieved. I think this case is one of those rare cases of obstruction due to the pressure on the superior mesenteric vessels, their constriction leading to the gangrene of the intestine. I have met two other cases of obstruction due to a similar cause.

Danger Symptoms and Signs.

1. Continual high fever at the commencement. 2. Frequent rigors at the commencement. 3. Early and frequent vomiting. 4. Sudden lowering of a high temperature without other sign of improvement. 5. Sudden disappearance of severe pain. 6. Abscess. 7. The discrepancy between the pulse and temperature. I mean by this that the proportion between pulse and temperature is abnormal. I consider this as one of the most important indications for operation and a sure sign of the approach of danger. On the preceding page I give a table of 50 consecutive cases of acute appendicitis to show the comparison of pulse and temperature. 8. Diffuse peritonitis.

These pulse and temperature rates were taken at the time of admission, and chiefly by this sign I have decided to operate at once or wait till the inflammation is localised.

It will be noticed in this table that the frequency of pulse in comparison to the temperature in the cases of diffuse peritonitis is striking. The more severe the case the more evident is the disproportion. Of course, this is not quite definite as there are exceptions, and before operation other facts must be also considered. Still, I think this is very important and must always be kept in mind.

Complications after Operation.

1. *Abdominal hernia.*—I had 4 cases of this condition. Two cases were operated on by the method of overlapping flaps and were quite cured; the other two were slight, and so far no operation has been done

2. *Fæcal fistula.*—Four cases. One case was completely cured by an operation. The perforation was near the surface and was sutured without much trouble. Another case was operated on three times without much success, but was cured completely in time by simple daily dressing and application of caustic. The two other cases would not heal for a long time, although several operations were done. The patients, getting impatient, asked for radical operation in another hospital, and they both died from diffuse peritonitis within a short time after operation.

I think that fæcal fistula, unless easily sutured, ought to be left to a more simple method than the radical operation, which separates the surrounding adhesions and often sets up diffuse peritonitis. I have seen many obstinate cases of fæcal fistula heal in time by simple methods. It certainly requires patience in patients and doctors, but it is undoubtedly safer.

3. *Parotitis.*—I have met with one case of one-sided parotitis occurring a few days after operation. It was incised and soon got quite well.

4. *Liver abscess.*—I have seen one case. As this case has been already fully described I will give only a brief account. The patient had multiple pyæmic abscesses in the liver, and although six abscess were opened yet he still had rigors with occasional high temperature and general weakness, the result of toxæmia.

5. *Cholecystitis.*—I have seen only one case. Shortly after operation the patient complained of pain in the right costal region with tenderness over the gall-bladder. He developed a slight jaundice with symptoms of indigestion. It was temporary and he quickly got over the trouble.

6. *Toxæmia.*—I have seen a few cases which showed symptoms of toxæmia and in which the patients died in spite of various forms of treatment. Generally in these cases I could find no bad signs in the operative field, and could account for no other reason than the absorption of toxin before the operation and its continual activity. In one case I was allowed to open the abdomen again to see the condition of the peritoneal cavity. There the peritonitis was subsiding and I could find no cause. Undoubtedly there are some cases which prove fatal from this cause. It is really very disappointing when, in spite of the improvement in the abdominal condition, the patient succumbs. The only safeguard against this complication is the evacuation of pus as soon as diagnosed.

7. *Intestinal obstruction.*—Several cases had partial obstruction after operation, especially cases where the adhesions had been extensive. In some cases of diffuse peritonitis, owing to paralysis of the intestine, the obstruction was more pronounced, but mostly these cases were temporary and amenable to treatment.

8. *Acute dilatation of the stomach.*—I had three cases. One case was slight and presented a moderate epigastric dilatation with nausea. By the passing of a bougie once and by withdrawing a small quantity of green fluid the patient was at once relieved and there was no recurrence. So whether the case was one of this condition or not is uncertain. The other two cases presented much dilatation of the stomach with frequent vomiting of a large quantity of green fluid at intervals. Passing a bougie and washing the stomach were done; one patient recovered and the other died. The last case was confirmed by post-mortem examination directly after death. It was wonderful how the patients were immediately relieved by the withdrawal of fluid and washing out the stomach. In later cases where there was any suspicion of stomach dilatation I at once passed a bougie and if necessary washed out the stomach. I think this preventive method would be the best guard against the occurrence of this serious complication.

9. *Ligature abscess.*—I have met with three cases in which a small abscess was found at the site of the wound and a ligature was discharged. Every time it was due to silk and in consequence I use catgut now.

10. *Diarrhœa.*—I have met with two cases, in both of which there was obstinate diarrhœa after operation.

11. *Secondary abscess.*—In one case, although I evacuated an abscess at the time of operation and could find no other, yet the temperature rose again and another abscess was found. The patient had a large abscess extending from the right pelvis to the level of the umbilicus on the right side and it was evacuated. A few days later the temperature rose again and I found another large abscess in the left iliac fossa.

The Condition of the Field of Operation.

In simple acute appendicitis I found the appendix generally swollen, red, congested, and adherent to surrounding tissues—especially to the cæcum and great omentum. In some cases a small quantity of pus existed in the appendix. In two cases I found the tip of the appendix cut off as if by the previous attack, so that it was very much shortened. In gangrenous appendix, the gangrene is usually partial, but may be quite complete. Perforation may take place anywhere, but it seemed to occur more often nearer the root than the tip. The perforation was usually one, but in a few cases it was multiple. I saw two cases in which I never expected recovery, and simply left the wounds with gauze packing, but these cases both recovered completely, although one for a time showed symptoms of partial obstruction. I think that in these cases it is better to leave the repair to nature and not to interfere, as by the removal of the gangrenous portion. In some cases I never found the appendix, although I systematically searched for it. Some surgeons have said that the appendix never disappears, but I could not quite agree with them because I have seen the appendix almost like a thin thread of tissue, and also could not find it in its proper situation by the cæcum or anywhere else. I have at the same time found a perforation at the site of the normal appendix. Again, in the two cases of shortened appendix which I quoted before there had been previous attacks, and I did not find the tip anywhere. So I should think that the appendix may be completely disorganised and may disappear in severe attacks. In one case where a perforation was present without the presence of appendix in the pus or anywhere, a worm was protruding through the hole. (This case was not operated on by me, but by my former assistant, Dr. Hanaoka). At first sight it was mistaken for the appendix. The adhesions in some cases are dense and make the operation most difficult. In diffuse peritonitis the pus may be anywhere, but most frequently it is in large quantities in the lower abdomen. A small abscess is usually situated round

the appendix. The pus may be thick or thin, yellow, watery, dark, &c.

Diagnosis.

The diagnosis is not usually difficult. I will now describe the experiences I have had.

1. *Localised peritonitis due to perforation of the cæcum.*—The case was diagnosed as acute appendicitis owing to its having (*a*) sudden acute pain in the appendix region occurring after eating a large quantity of green vegetables at dinner; (*b*) high fever; and (*c*) localised tender tumour. At the operation it was found to be perityphlitis due to the perforation of the cæcum close to the appendix by a stalk of the green vegetable. The appendix was normal.

2. *Tuberculous peritonitis.*—In this case the symptoms were acute with sudden pain in the right iliac fossa and with high fever and rapid dilatation of the abdomen. Tenderness was present in the appendicular region, but at the operation it was found to be tuberculous peritonitis with acute symptoms and with swelling in the region of the appendix.

3. *Pneumonia.*—The subject of this case was a man 30 years of age suffering from high fever, slight pain, and tenderness on the right side of the abdomen and a rigid lower abdominal wall. At first sight it looked like an attack of acute appendicitis, but the rigidity was not constant and only occurred at intervals. While waiting the patient brought up a large quantity of blood and passed over the pneumonic crisis.

4. *Ruptured gall-bladder.*—This patient was not operated upon by me, but I saw the case. There were high fever, a large tender tumour in the appendix region, and a previous history of pain on the right side of the abdomen. On opening the abscess a large quantity of purulent bile came out. A short time after operation two gall-stones were discharged through the sinus. Later the patient died and rupture of the gall-bladder was confirmed by the post-mortem examination.

5. *Typhoid fever.*—A few cases of typhoid fever were sometimes suspected of being acute appendicitis at first. When the conditions are combined diagnosis is difficult.

The Results of Treatment (Operations in Acute Cases).

Adhesions	19
Localised abscess	28
Diffuse peritonitis	25
Total	72

By adhesions I mean those early cases where only inflammatory adhesions are present and no pus. Of the 72 cases, 55 were cured and 17 proved fatal. Of the 19 cases of adhesions 18 were cured and one patient died. In the last-mentioned case the patient died five days after operation with high temperature and cerebral disturbance which commenced two days previously. No cause was found in the abdomen, and the wound was getting on well. Whether this was due to cerebral embolism or toxæmia I could not say. Of the 28 cases of localised abscess, 26 were cured and 2 patients died. Of these two fatal cases one patient had suffered from tuberculosis of the apices of both lungs, and his death was no doubt accelerated by it, while the other patient represented a very severe case of a large abscess having the appendix gangrenous and separated from the cæcum, so that it was floating in the pus, and there was a hole in the cæcum. This patient died from toxæmia two days after the operation. Of the 25 cases of diffuse peritonitis 11 were cured and 14 proved fatal. This shows a mortality of 56 per cent., but this has been lessened among the later cases. The first six cases were all treated by washing out the peritoneal cavity with warm saline solution. Of these only one case was saved, showing a mortality of 83·3 per cent. The other 19 cases were treated by simple wiping of the peritoneal cavity, with Fowler's position and Murphy's saline post-operative treatment. Of these, 11 were cured, showing the reduced mortality of 42·1 per cent. There is no doubt whatever that the wiping method, combined with the Fowler's position and Murphy saline treatment, has brought about a radical change for good in peritonitis.

As regards the appendix, 44 were removed and 28 were not excised.

The above figures show the good results obtained in both simple or non-suppurative and localised cases, but although improved by the recent advance in the peritonitis treatment, the mortality is still high in the diffuse cases, showing 42·1 per cent.

Treatment.

Much has been written and said about the treatment of acute appendicitis, but even now no definite conclusion has been arrived at. However, the present opinion among surgeons is that the best treatment for acute appendicitis is the immediate operation at its commencement, and I will now summarise the advantages of early operation.

1. It is the safest method, because we never know how soon the appendix may become gangrenous or may perforate, causing serious, if not fatal, complications. The rapidity of the onset of complications can never be foreseen. There have been many examples of gangrene or perforation occurring within the first few hours of the appearance of any sign of the disease. In one of my own cases a gangrenous appendix was found 19 hours after the commencement of pain.

2. The operation is easily done owing to the absence of serious adhesions. I have found often a great difficulty in later stages to find the appendix, and in some cases have never found it owing to dense adhesions. Besides, the absence of pus is a great advantage and the part can be manipulated without fear. Of course, in a few cases, even in the early stage, there is a small quantity of pus, but this is not usual.

3. The patient is completely cured once for all. As the appendix is removed he is cured for life and he need not fear recurrence. In later stages, when some complications had occurred, it has been often found difficult to excise the appendix. If the appendix is left behind you can never be sure of a complete cure.

4. The convalescence is short—usually about a fortnight. Besides, as the wound is clean and can be closed up, there will be no fear of abdominal hernia or other post-operative complications. When suppuration occurs the convalescence is generally greatly delayed.

5. As regards the later stage, let me quote from Dr. Murphy:—

> Should we operate in the intermediate stage, during the increasing or spreading inflammatory process which may mean anywhere from the second to the fifth day? In this stage we may have the circumscribed abscess around the appendix, an active inflammatory process of the neighbouring tissues or organs, or the early pathologic changes of a circumscribed or general peritonitis. We often find the temperature and pulse high, meteorisms, intestinal paralysis, and acutely infected tissues, with manifestations of severe intoxication at this stage. Shall we then operate?

This is the point which is now the centre of discussion among surgeons.

Let me now give an extract from a paper by Dr. Clarence A. McWilliams of New York, published in "Annals of Surgery," June, 1910:—

> The answer to this question divides the surgical world into two camps: the one advocates the Ochsner treatment of diminishing peristalsis and delaying operation in the hope that the diffuse or general peritonitis will subside into a local process and form a circumscribed abscess which can be opened later when the severe abdominal symptoms and general toxæmia have subsided. Some of their statistics are alluring; but, before being convincing, it will be necessary to know how many patients treated in this way die without localising the process into an abscess, hence go unoperated. I have seen no such statistics. Patients who have strength enough to survive the battle are operated upon and the unfit are eliminated. This method seems ideal for the statistics of the operator, and perhaps better calculated to minister to the surgeon's reputation than to the safety of the patient. How is anyone to tell in advance whether a given spreading or diffuse peritonitis will not go on to a general and fatal peritonitis?
>
> The Ochsner method of treatment has been widely misunderstood and wrongly applied. Many have falsely interpreted it to mean that operation in all acute cases, even in the early stage, should be delayed, and great harm has been done because of the letting slip by of the most favourable time for successful operation—namely, at the onset. Perhaps it would be well to outline the Ochsner method of treatment in order that there may be no misunderstanding as to exactly what is meant. We may divide it in two parts. The first finds few dissenters among surgeons, and relates to efforts which should be used to diminish peristalsis, hoping thereby to limit the spread of the inflammation. It consists in the use of gastric lavage, the giving absolutely of no nourishment of any kind and no cathartics by mouth, the giving of no large enemata, the continuous administration of normal salt solution by rectum by the drop method, and the giving of nourishment exclusively by the rectum.
>
> The second and more criticised portion of the Ochsner treatment consists in delaying operation in the severe cases in the hope that, by the employment of the means outlined above, peristalsis will be so diminished as to limit the spread of the diffuse or general peritoneal inflammation, and that a local abscess will form which can later be opened.

The classification adopted by Sprengel is certainly the most convenient, but is, I think, too arbitrary. He classifies the operations in three stages as follows: (1) early

operations, those under 48 hours; (2) immediate operations, from the third to the sixth day; and (3) late operations, from the sixth day onwards. Because the cases do not all take a similar course, and the more severe the more rapid is the advance of the inflammation, I should like to divide them into uncomplicated and complicated.

Unquestionably the best time for operation is at the commencement of the illness, but unfortunately we usually do not get our patients at so early a stage, and most often see them when the condition is more advanced. The cases usually coming into the hospital are severe cases. The large percentage in cure of all uncomplicated acute appendicitis is the chief factor in preventing them passing into the surgeon's hand so as to have the radical operation done. By this I do not mean that all the cases must be treated surgically, for most cases of slight nature, or, indeed, fairly severe cases of acute appendicitis, can be treated with complete safety without an operation and be cured. In other words, the uncomplicated cases ought to be operated upon in the early stage, but there is no "must."

As regards the complicated or severe cases, I should operate in all cases except where the patient's condition is very weak or where after a few hours of Ochsner's treatment the patient shows no improvement. Even very severe cases are sometimes cured by Ochsner's treatment, but if the results obtained of equal numbers of diffuse peritonitis treated by this method and by those of the Fowler, the Murphy, and wiping methods be compared, I have no doubt that the last named will show the best percentage. I think the long continuance of Ochsner's treatment in diffuse peritonitis is more dangerous than is laparotomy.

In certain cases I have tried a simple opening and letting out of pus combined with the other treatment. I think this is much better than without an operation. The opening can be done with local anæsthesia.

Some object to operation in the spreading inflammation stage that the inflammation is not arrested by it, but, on the contrary, that it gives stimulus to it and leaves the patient in a worse condition. I do not think so from my own experiences. I found even in cases where pus was present that both contamination and inflammation were prevented. Certainly the localised abscess is safer to operate upon than are the early soft adhesion cases, but with care the spreading of pus can be prevented.

In my cases I took the following steps:—

1. *Mild cases.*—(*a*) Fluid diet; (*b*) complete rest; (*c*) local application of ice-bags; (*d*) leeches sometimes; (*e*) bowels opened only by small enemata; (*f*) purgatives never used, except rarely in very early stage; (*g*) as regards morphia or opium, it is not my habit to give it except where the patient bears the pain badly, causing restlessness, sleeplessness, &c., because it often masks the symptoms and signs, and one may be deceived; (*h*) if the radical cure was required, the operation was done without hesitation.

2. *Fairly severe uncomplicated cases.*—I treated them in the same way, but at the slightest sign of any danger I operated.

3. *Severe or complicated cases.*—Except where the shock was extreme, my advice was to operate at once. In some cases I watched them for a short time under the delaying method, but I found the immediate operation attended with better results than the other. So in future I should not hesitate to operate at once.

Operation.

1. *Simple or uncomplicated cases.*—An incision was usually made longitudinally through the right semilunar line. This incision is the most convenient to reach the appendix, and when necessary you can easily widen it both upwards and downwards so as to give more space. It is also attended with very little hæmorrhage, which is another advantage. The occurrence of hernia is not frequent in Japan as the band (Obi) worn acts as a complete truss and prevents its occurrence. After opening the peritoneal cavity the appendix is sought, and after tying the mesentery the appendix is cut off near its root and the stump is turned in with catgut purse-string suture. The abdominal wound is closed in layers.

2. *Severe or complicated cases.*—The incision is either made through the semilunar line or over the prominent tumour. In the diffuse peritonitis the first incision was generally made in the mid-line followed by another incision in the right semilunar line after the diagnosis was confirmed. All the wounds were generally left open except the median one. The partial closing of the wound in suppurating cases may be useful in preventing the occurrence of hernia, but I think the large wound safer, as the site of suppuration can always be in view, and any change in that part can be seen. The wound in bad cases is packed with iodoform gauze, and for others a drainage-tube or cigarette tube is used.

As regards the appendix, I generally look for it and remove it, because if it is left the operator can never be sure of certain cure, and, moreover, he may be troubled with an obstinate sinus. But where the appendix cannot be found owing to dense adhesions I leave it alone. Again, if in severe cases the patient's condition is bad, I do not look for it, but am satisfied with simply letting out pus. If not found immediately it should not be searched for, as it is usually placed in the retrocæal position and very difficult to get at. As I said before, the appendix in some cases is disorganised by the inflammatory process and may disappear altogether.

The stump of the appendix is usually turned into the cæcum, but in some cases where the cæcum is soft, in consequence of the extension of the inflammatory process, or the patient is in bad condition, I am satisfied with simply ligaturing and cutting off.

Since the first year I have never resorted to the washing out of the peritoneal cavity by the saline lotion. I have now not the slightest doubt that the improvement in the results of the severe cases is due to the wiping away of the peritoneal pus, Fowler's position, and Murphy's saline treatment.

HENOCH'S PURPURA WITH ENTERIC INTUSSUSCEPTION.

REDUCTION; INTUSSUSCEPTED AREA GANGRENOUS; RESECTION OF 2 FEET 5 INCHES OF GUT; IMMEDIATE END-TO-END UNION; RECOVERY.

BY H. BETHAM ROBINSON, M.S. LOND., F.R.C.S. ENG.,
SURGEON TO, AND LECTURER ON SURGERY AT, ST. THOMAS'S HOSPITAL; CONSULTING SURGEON TO THE EAST LONDON HOSPITAL FOR CHILDREN.

INTESTINAL symptoms with hæmorrhage from the bowel have been well recognised as a frequent associate in cases of Henoch's purpura. With a limited swelling, especially in the neighbourhood of the ileo-cæcal valve, there is considerable difficulty, if it be possible, in deciding without operation whether the swelling is due to hæmorrhagic infiltration of the bowel wall or to an intussusception. In the following case this difficulty did not present itself, for the size and shape of the swelling and its mobility pointed to an intussusception located in the small gut.

A boy, aged 5 years, was first seen by Dr. Braidwood on Dec. 24th, 1909, on account of illness of two days' duration. The temperature was 102·6° F. The left elbow-joint was swollen, hot, and painful; the left foot was swollen on the dorsum and hot, and other joints were painful but not swollen. There was an evident purpuric rash on the thighs and lower part of the trunk, with distinct swelling and discolouration of the left side of the scrotum. The child was put upon salicylate of sodium and in two days the temperature came down and the joints appeared about normal. On the 27th the child was not so well and complained of abdominal pain; three stools were passed, and the last one consisted of a considerable quantity of fluid and mucus flecked with blood. The next day, being in much the same condition, except that there was more evidence of blood in the stools, he was brought up to St. Thomas's Hospital and admitted under my colleague, Dr. H. G. Turney, but later in the day was transferred to me for operation.

On admission he was still rather tender about the affected joints. About the ankles were a few dusky spots, and around some recent scars on the right elbow there was a definite purple discolouration. The abdomen was not particularly distended, but a very well-defined lump could be felt below the umbilicus, extending from the edge of the right rectus over the mid-line almost to the outer edge of the left. Over this area there were some muscular rigidity and tenderness. The temperature was 99·6° F., the pulse was 124, and the respirations were 28. The finger on rectal examination came out covered with dark blood without mucus. There was no history of vomiting.

Operation was decided on, and examination of the abdomen

when under the anæsthetic showed the abolition of the previous rigidity; a lump of the size of the palm of the hand was felt, consisting of two rather elongated elastic tumours, almost parallel, with a sulcus between them; this lump could be easily moved about the abdomen and be pushed up under the liver. Per rectum, on pushing the lump downwards it could be felt in Douglas's pouch. The rectus incision was used, the muscle being pulled inwards and the fascia and peritoneum below divided together. A large quantity of blood-stained serous fluid escaped, but in it were no lymph flakes. A large enteric intussusception was brought out of the wound looking "like a twisted horse-shoe." The intussuscipiens was very distended and dotted all over with little hæmorrhagic spots; the entering bowel and the mesentery were very tightly nipped at the entrance, but the proximal bowel was of quite healthy colour and only thickened from contraction; there was no lymph on the surface of the intussusception. The neighbouring glands in the mesentery were enlarged. The intussusception was slowly reduced by pressure from below with a little traction at the last; there were no adhesions. During reduction a considerable quantity of blood-stained serum was set free from between the layers. The entering bowel was very contracted and at the beginning not particularly dark, but it soon became so. The returning layer was prune-coloured except over the mesenteric border, where it was much thinner and of a greyish colour; the walls of this part and of the intussuscipiens were generally very thinned and distended, showing no contractility. The mesenteric vessels to the distal part of the intussuscipiens pulsated well, but those to its proximal part only feebly; there was no pulsation in the vessels to the returning layer and to the distal part of the entering; the pulsation was very poor in the vessels supplying the first part of the entering layer. There was no hæmorrhage into the mesentery, but its vessels felt blocked. It was obvious that all this gut was beyond recovery and must be resected, and to get healthy bowel at each end 2 feet and 5 inches had to be removed; the thrombosed area of mesentery was also cut away. The child's condition permitting it and the upper part of the intestine not being very distended, it was decided to do an immediate end-to-end union. In suturing the ends were carefully approximated first of all at the mesenteric border; the edges through all the layers were united with fine catgut, and then through the sero-muscular coat a continuous Lembert's silk stitch was used, care being taken by knotting not to constrict the bowel. The edges of the mesentery were united with fine silk. The omentum was folded over the line of union, not stitched. No other hæmorrhages were discovered in the bowel. The abdominal wall was done up in layers. The union was 15 inches from the ileo-cæcal valve. There were no thickenings like enlarged Peyer's patches in the excised part or beyond. In the evening after the operation the pulse was 176, the temperature was normal, and the respirations were 22.

On the next morning the temperature was normal and the patient's condition generally was satisfactory. In the afternoon the temperature rose to 103°, while the pulse was 180, and the patient was very restless, but in the evening the temperature dropped to 101·4°. On the 30th and 31st there was a gradual fall of temperature to normal, where it afterwards remained, with reduction of the pulse-rate to about 100; this was attended with similar improvement in his condition. The stitches were removed from the wound on Jan. 5th, 1910, when some superficial suppuration was found at the lower part, but there was no sloughing. The patient got up on the 15th. There was some sluggishness at first about the action of the bowels, but this soon passed off. The treatment did not in other ways differ from that ordinarily used in intestinal surgery.

On Jan. 19th there was a sudden rise of temperature to 104·4°, which was rather alarming; this was associated with a severe sore-throat, with ulceration and enlarged glands in the neck, and later followed by tracheitis and bronchitis. The temperature was high from the 19th to the 28th and then it fell by lysis. All this time the patient was perfectly free from any abdominal symptoms and the bowels acted normally. He left the hospital cured on Feb. 2nd, five weeks from the operation, which time might certainly have been shorter by ten days but for his sore-throat, &c., probably due to influenza.

The first point for consideration is, Was this a true case of Henoch's purpura? Many cases have been so considered on rather scanty evidence, but here the state of the joints, the intestinal hæmorrhage, and the rash seemed definite enough. If there were any doubt, the association of the enteric intussusception gave additional support to the diagnosis. Although comparatively a rare complication, it was, occurring at the age of five years, a little beyond the ordinary period when intussusception is met with.

Sutherland has stated that the hæmorrhage into the bowel wall causes paralysis of that segment, and hence intussusception. In my case there was no doubt that hæmorrhage had occurred into the bowel wall antecedent to the other changes, and the beginning of the marked blood staining was in the region of the apex of the intussusception.

Whether there was bile in the rectal blood or not, a clinical sign pointed out by Barnard to distinguish between the swelling of the bowel wall in Henoch's purpura and the block caused by an intussusception, was not here tried, for the size of the tumour and its shape were both against a simple hæmorrhage having occurred into the bowel wall. The double tumour, with the sulcus between, was before operation rather puzzling, but inspection showed that this had been produced by the pull of the mesentery, which did not strike one at the time.

As to the treatment, the child's condition and the absence of over-distension of the proximal bowel warranted an immediate end-to-end union, which produced such a happy result. It is possible to urge that if sloughing had occurred at the line of union (sloughing of wounds being known to be frequent in these cases) the result might have been disastrous; as this sequel is not certain, it is worth while risking a little to avoid the inconvenience of an artificial anus with a secondary operation to follow.

Upper Wimpole-street, W.

THE RELIEF OF SYMPTOMS OF PROSTATIC OBSTRUCTION BY ELECTRICAL TREATMENT.

BY JOSEPH S. BOLTON, M.D. EDIN.

THIS modest title is purposely chosen. A more ambitious stand might have been taken and some mention made of reduction in the size of the prostate, but it is better to postulate too little than too much. All that is implied in the title can be demonstrated; improvement in symptoms is easy to ascertain and register. Every patient can appreciate the difference between a disturbed night and a good one. But when the size of the prostate is in question and exact measurements are required difficulties begin. Also, when it is sought to compare the size before and after treatment, not only is accurate observation necessary, but a very exact and retentive memory, especially if several weeks have elapsed between the observations. The desire to record diminution is apt to mislead the judgment. Even when the operator is certain that there is considerable shrinking it may not be easy to demonstrate. But if the symptoms are cured and the patient made comfortable the chief end of treatment has been obtained.

The claim now put forward may be thus stated. That by a treatment which is harmless and painless, so that it can be administered to the aged and feeble, so much improvement can be brought about as to make the patient comfortable, remove the necessity for catheter interference, and restore his hope and confidence for the future.

The method of treatment is to pass an electrode into the rectum and administer high-frequency currents. The electrode is so placed that it lies against the posterior surface of the prostate. The current is taken from the top of the resonator. The local effect can be increased by the operator placing his hand flat upon the abdomen just above the pubes. In urgent cases the patient should be treated every day for a quarter of an hour, but in more chronic cases three times a week will be sufficient. In my earlier cases I used a solid metal electrode, and I continue to use this in all cases where congestion is a marked feature and where irritable nerves require soothing. But for large hard prostates a more stimulating treatment is indicated. For this purpose a vacuum electrode may be used, or, better still, a condenser

electrode so modified that all the electric bombardment is in the region of the prostate.

In a former paper upon this subject which was published in THE LANCET of April 13th, 1907, I gave particulars of my early cases. These patients, so far as I have been able to trace them, are still doing well. Also the results recorded at that time are borne out by further experience.

My most successful cases have been those where congestion and irritation rather than size of prostate have been the prominent features. A medical man, aged 59 years, had been waking almost every hour of the night and rising several times to pass urine. This condition had been gradually getting worse for several years and he had tried medicinal treatment without avail. But though the symptoms were so disturbing the enlargement of the prostate was not great. He was treated three times a week for five or six weeks, using the solid metal electrode, and could then sleep the whole night through without disturbance. The cure was perfect and lasting.

A very similar case was that of a man, aged 60 years, who had to be relieved with a catheter three years ago and had been troubled with disturbed nights ever since, rising five or six times to pass urine. After seven treatments he was able to go through the night with only one disturbance. A marked feature in this case, as in so many others, was that he had to wait for his urine to come. After a few seconds it would begin to dribble, and a little later it would come in a fair stream. This condition is amenable to high-frequency current treatment.

Another patient of about the same age was troubled with the opposite condition. After a cup of tea or dram of whisky the desire to pass urine would be so urgent that if he could not obtain immediate relief he would sometimes find himself wet to the boots. There was no marked enlargement of the prostate, and the trouble was not due to retention. His urine was clear, faintly acid, of specific gravity 1022, and contained neither albumin nor sugar. The condition was greatly improved by the treatment. The patient was, however, advised to abstain from whisky in future, and to be very moderate in the use of tea and coffee.

Many patients have been made worse by the well-intentioned advice of surgeons whom they have consulted. An elderly man with symptoms of enlarged prostate is warned of his danger and advised to keep a catheter and antiseptics for any emergency. He is also told never to delay when he has a desire to micturate, but carefully to avoid holding his urine too long. The fear of a stoppage is always before his mind, and he urinates doubly as often as he need. In time the act becomes a habit and his bladder expects to be emptied frequently by night as well as by day. This faulty habit cannot be overcome without assistance. High-frequency treatment will remedy the cause and restore the confidence. Such a case was treated for me by Mr. A. Primrose Wells.

The patient was 73 years of age. He was troubled with frequency of micturition, especially in the day-time. There was also delay in starting the stream, and sometimes dribbling after passing it. He consulted a surgeon, who drew off more than a pint of urine, and advised him to have his large prostate removed. A physician reported unfavourably on the condition of his heart, and fearing operation he decided upon electrical treatment. The result was eminently satisfactory. There was improvement in all the symptoms and in the health of the patient. The prostate also was reduced in size.

In another case treated by me last summer the patient was 70 years of age, and symptoms of enlarged prostate had been gradually getting worse for eight or ten years, but he had never had stoppage. The prostate was of moderate size, but he had much pain and discomfort in the region of the bladder and urethra, and rose eight or ten times a night to pass urine. After three or four weeks' treatment the pain left him, but the nights were just as disturbed. It was only after two months' treatment that he obtained good nights. I saw him ten months after the treatment, and the improvement was still maintained. He said: "I am as well as ever I was."

It is not possible to cure every patient, but relief is experienced by such a large proportion as to make the treatment worthy of trial in all uncomplicated cases. The results of the treatment may be summed up in a few words. Congestion in the blood-vessels and stasis in the tissues are relieved. The nerves are soothed. The intense irritability of the bladder which is such a marked feature of the disease passes away. The tone of the bladder muscles is improved, and as a consequence the size of the stream is increased and also the force of propulsion. The bladder becomes able to empty itself, and the urine returns to normal. The restoration of the confidence of the patient is no small help in lessening the frequency of micturition.

Is the prostate reduced in size? In seeking an answer to this question we must remember that the enlargement is not all due to overgrowth. Much of it is due to congestion. So there may be very considerable reduction in size without contending that high-frequency currents will remove fibrous overgrowth. It is important also to bear in mind that the prostate is often enlarged for years before it causes any trouble. The symptoms only show themselves when the vital powers begin to flag owing to advancing age. It is only natural, therefore, that high-frequency currents, by renewing to some extent the healthy vigour, will remove the symptoms of obstruction. But besides all this, probably no one who has watched carefully the course of treatment of a successful case will fail to be convinced that there has been considerable reduction in the actual size of the prostate.

Nottingham.

A REMINDER OF THE BATTLE OF OMDURMAN.

AN ACCOUNT OF THE REMOVAL OF HALF A SHRAPNEL BULLET WHICH HAD REMAINED EMBEDDED IN THE LEG OF AN ARAB FOR 11 YEARS AFTER THE BATTLE, SEPT. 2ND, 1898, TO DEC. 1ST, 1909.

BY J. B. CHRISTOPHERSON, F.R.C.S. ENG., M.A., M.D. CANTAB., M.R.C.P. LOND.,
DIRECTOR OF HOSPITALS, KHARTOUM AND OMDURMAN; SURGEON, KHARTOUM HOSPITAL, ETC.

Mr. H. Curtis's interesting account in THE LANCET of April 9th, 1910, of the extraction of a Mauser bullet with sequestra ten years after the Jameson Raid, impels me to send an account of a case I saw at Omdurman Hospital on Dec. 1st, 1909.

The Battle of Omdurman took place on Sept. 2nd, 1898. On Dec. 1st, 1909, 11 years afterwards, I removed half a shrapnel bullet and a piece of bone from an abscess cavity in a quondam Dervish's thigh. The abscess was deeply situated in the supero-antero-external aspect of the thigh (see Fig.) close to the bone, its walls being of a very tough fibrous tissue structure (1½ inches thick). It had given him no trouble until the last four months, during which time the swelling had increased rapidly. From this history I assume the bullet had lain quiescent and unnoticed for 11 years and had then become infected with the micro-organisms of suppuration, and the abscess which had formed in consequence had grown larger and larger until it was of the size of a moderate-sized lemon, and as the cavity ulcerated and necrosed the fibrous tissue wall had become increasingly thicker until there was a very appreciably large swelling, deeply connected, whilst the fibrous tissue wall of the abscess involved at last the skin itself.

An Egyptian doctor, whom the patient had consulted previous to coming to hospital, had already incised it and had extracted one small piece of bone, leaving a swelling with a discharging sinus. The bone was thickened for some distance up and down the shaft in the neighbourhood of the bullet, but the cavity was separated from the bone by some thickness of tissue. The scar of the wound of entrance (see Fig., A) was about 1 inch long and ½ inch wide, and the femoral artery could be felt pulsating beneath it. It was about 1 inch below Poupart's ligament. The firing party had been a considerable distance off; in fact, the man was apparently wounded by the opening volley of the battle, the bullet had ricocheted, was flattened, and grooved on one face, and was only half a bullet. It had passed in horizontally and had penetrated half-way through the thigh and no further.

The condition of the bullet and bone was the same as on the day the bullet was fired, excepting that there was a small deposit of some white salt on a part of its edge. The two pieces of bone did not present the appearance of

sequestra, therefore I assume that they were broken off by the bullet when it entered. They were apparently little altered during their 11 years' sojourn with the bullet amongst the thigh tissues. The man was hit at the same time in two other places (see Fig., C, D). A piece of shrapnel struck him on the right shin, grazing the tibia in its upper third (D),[1] and he also received a ·303 bullet on the outer side of his left knee-joint (C), which lodged beneath the skin behind the outer tendon of the vastus externus behind the joint.[2]

The man had an interesting story to tell. He was an Arab of the Jaalin tribe, who occupy the banks of the Nile in the Berber and Khartoum provinces, but he was born and brought up at El Obeid in Kordofan, and when the Mahdi appeared was following the trade of his father—a merchant. He joined the Mahdi and accompanied him from El Obeid to

A, Scar of wound of entrance of the shrapnel removed; the vertical line represents the course of the femoral artery. B, Dressing over wound made to extract the bullet and bone. C, Cross represents scar of wound of entrance of the ·303 bullet received at the same time, the dot behind being the wound of exit made by the native doctor after the battle to extract the bullet. D, The scar of the other fragment of shrapnel over the right tibia.

Omdurman. He did not remain in Omdurman town, however, during the Mahdieh, but went to Rufaa, a large village on the Blue Nile, where he cultivated land, from which place he was summoned by his emir to take part in the battle. The Battle of Omdurman took place at dawn on Friday, Sept. 2nd, and on the previous Wednesday evening the Dervishes forming the Khalifa's army were marshalled together and slept in the large open-air mosque, adjacent to the Khalifa's house in Omdurman. They moved out to meet the Anglo-Egyptian army on Thursday morning, sleeping that night in the dried-up water-course called Khor Shambat, about half-way between the battlefield and Omdurman town. Early on Friday morning they attacked the village of Ageiga where the British army had landed from the river, and this man was in the front rank of the right[3] of the three divisions[4,5] under the Emir Osman Azrak as they attacked. He was in the front rank during the first attack at daybreak, and was walking with his spear in his hand, and was adjacent to the hill Gebel Surgham when he was lucky enough to be wounded in three places simultaneously (see Fig.) by probably the first British volley. He fell and was carried back on a donkey into Omdurman, where a native doctor (Bossir) extracted the ·303 bullet from his left leg. He was well again in about a month, and quietly left Omdurman[6] to resume his work as a cultivator at Rufaa, and has been a cultivator there ever since. The shrapnel bullet commenced troubling him only four months ago, and he came to Omdurman to consult a doctor.

This case is also interesting from a surgical point of view in several ways. Ten years ago it was not an uncommon event for a retired Dervish to come to the hospital to have a bullet extracted, but naturally these interesting bullet cases grow rarer as time goes on, and it is now four years since I extracted the last from a man coming from El Obeid, the bullet (a ·303) lying under the left scapula. The specimen is half a shrapnel bullet, flattened and grooved, and evidently ricocheted—one which had struck some body in its flight—and had thereby been altered in its direction, &c.

A shrapnel is a shell weighing 12 pounds and containing 177 bullets, each weighing ½ pound ("Military Surgery"). Theoretically a shrapnel should explode into 100 or 200 fragments at a distance of 50 or 100 yards in front of the enemy.[7] Wounds produced by such a projectile are said to be not so serious as those caused by direct small-arm projectiles. Shrapnel bullets often remain embedded in the tissues as they have not sufficient velocity to make a wound of exit. Their serious feature lies in the liability to several bullets or fragments taking effect.[8] All these points are exemplified in the case I describe, and it may have been the other half of the same bullet that wounded the man in the right shin which entered the thigh and remained embedded.

The case is also an instance of what Longmore (p. 340) calls (quoting Hunter) the "instinctive provision in parts to remove themselves so as to bring extraneous bodies to the skin for their exit."[9] Longmore (p. 341) mentions the case of a man wounded 16 years previously by a canister shot at Maharajahapore in 1843, who stated he had not been inconvenienced until a short time before its removal in 1859 from the right supraspinous fossa. Longmore ascribes the unchanged condition of such foreign bodies after being embedded for several years in the body as due to the exclusion of access of air (p. 343). I assume that the full explanation is that so long as the micro-organisms of suppuration are excluded the body remains inert and unchanged, but as soon as micro-organisms of suppuration are introduced (through the circulation) then the foreign bodies become changed. It would appear that healthy tissues do not absorb foreign bodies, but deal with them by encysting them; in the case of a sharp pointed body (a needle) it may move, but as a rule they do not move. The "instinctive provision" spoken of by Hunter is the process of infection which takes place sooner or later, and it is then that extraneous bodies move and are brought to the skin for their exit by means of this process.

With regard to the treatment of fragments of modern projectiles left in the body, it would seem that sooner or later they (wherever placed) will become infected and give trouble, so that it is better to remove them if they can be located rather than leave them. In the case described by Mr. Curtis I should think the inconvenience caused by the presence of the Mauser bullet was due to its vicinity to a large nerve and was mechanical.

These cases have a practical bearing on everyday surgery. With regard to the absorption of ligatures and sutures used in operations, it would appear from the unaltered condition of accidentally introduced aseptic foreign bodies which remain embedded so long and undergo so little change (both organic (bone) and inorganic (bullet)) that normal healthy

[1] Perhaps the other piece of the same shrapnel bullet.

[2] I assume it was the ordinary service rifle bullet, ·303, as he described it as "white and long."

[3] His emir's name was Wad el Tueim.

[4] The middle division was commanded by the Khalifa and his brother Yacoub, who was slain defending the Black Flag.

[5] The division on the left was commanded by Ali Wad Helu, and in it fought the Sheik ed Din, the Khalifa's eldest son. This was the force which was sent to cut off the retreat of the British should they have been beaten by the Khalifa, and against which MacDonald executed his turning movement, his far famed change of front (Churchill's "River War," vol. ii.).

[6] The British took very few prisoners after Omdurman.

[7] Stevenson: Wounds in War (1897), p. 72.

[8] Longmore: Gunshot Injuries (1895).

[9] Hunter's Works, Edition 1794, "The Ulcerative Inflammation."

tissues and fluids of the body are inert towards them, and one would doubt very much the propriety of the term absorbable ligatures—i.e., meaning thereby ligatures which will be absorbed by the healthy tissues. There are, of course, various degrees of resistance to the chemical action of abnormal fluids of the body, such as pus and unhealthy urine. Of course, the various digestive secretions of the intestines must be excepted from this generalisation, but even in digestion micro-organisms play a very large part in the destructive processes of the disintegration of foreign bodies.

Omdurman Civil Hospital, Sudan.

THE ETIOLOGY AND DIAGNOSIS OF GERMAN MEASLES (RUBEOLA).

BY CLIFFORD BEARDS, M.B. OXON., M.R.C.P. LOND.,
RESIDENT MEDICAL OFFICER, LONDON FEVER HOSPITAL;
AND
W. L. GOLDIE, F.R.C.S. ENG.,
ASSISTANT RESIDENT MEDICAL OFFICER, LONDON FEVER HOSPITAL.

THE great majority of isolation hospitals do not admit rubeola or morbilli, and little opportunity is therefore offered of seeing any great number of consecutive cases of these diseases and recording their daily progress. At the London Fever Hospital special wards are set apart for these diseases and 2262 cases have been admitted since 1899, the last 500 of which have come under our personal observation. Of these admissions, 1335 have been cases of rubeola and 927 of morbilli.

Etiology.—The theory of the hybrid origin of rubeola from scarlet fever and morbilli has been abandoned and the specific entity of this disease is now fully recognised, although up to the present the causal organism has not been identified. As regards the infectivity of rubeola, it is probable that it is less than that of either scarlet fever or morbilli, and that the main channel of infection is by personal contact and not by fomites. Divergent opinions have been expressed as to the period during which the disease is infectious. It would appear, however, that it is short-lived, and we are inclined to think that it is probably limited to the prodromal and eruptive stages. The difficulty of calculating the incubation period is evidenced by the varying estimates of different observers. Some assign as short a time as five days, while others consider that it may be as long as three weeks. In the limited number of cases in which we have been able to exclude all but one source of infection the period of incubation has been from 14 to 16 days.

Season.—This appears to exert some influence on the prevalence of the disease, for the records of this hospital show a gradual increase in the number of cases admitted from January to March. There is a marked increase during April, May, and the early part of June, after which an abrupt fall in the number of admissions is very noticeable.

Sex distribution.—As regards the sex distribution of the cases under consideration, the numbers are fairly equal. Of the 1335 cases of rubeola, 580 were in males and 755 in females, or, expressed as percentages, 43·5 and 56·5 respectively. These correspond very closely with the figures for morbilli for the same period, which were 45·3 per cent. males and 54·7 per cent. females.

Age incidence.—Of the age incidence in these diseases the figures are as follows:—

Age-periods.	Rubeola.	Morbilli.
0-10 years	1·4 per cent.	20·2 per cent.
10-20 ,, ...	24·4 ,,	26.1 ,,
20-30 ,, ...	63·6 ,,	46·0 ,,
30 years and over...	10·6 ,,	7·7 ,,

It will be seen from this table that over 98 per cent. of our cases of rubeola occurred in patients over 10 years of age, as compared with 80 per cent. of the cases of morbilli. Owing to the fact that the patients in the London Fever Hospital are drawn from a somewhat limited class it is unfair to draw definite conclusions as to the age incidence of the disease, but considering the fact that the admissions in morbilli and rubeola both come from the same section of the community, it would seem that the latter disease has its maximum incidence at a somewhat later age-period than the former. This fact appears, to a certain extent, to be borne out by Goodall's figures for Homerton Hospital, where in a total of 925 cases of which 638 were morbilli and 287 were rubeola, 20 per cent. of the latter were over 10 years of age, as compared with 1 per cent. of the former. Further, it may be noted that epidemics of rubeola are not uncommonly reported at boarding-schools, whereas up to the present they have not been a marked feature in the board schools, especially among the infant classes in which morbilli is so rife.

With regard to the extreme periods of life, the London Fever Hospital records for the last 20 years only show 8 cases under 5 years of age, of which the youngest was aged 2, and 9 cases over 50 years, the oldest being 61 years. Scholl has reported a case in a child occurring a few days after birth, while Seitz has seen the disease in a woman aged 73. In the case of rubeola we find that only about 50 per cent. are certified as such, the majority of the remainder being sent in as measles, while a few are diagnosed as scarlet fever, though the reverse (scarlet fever for rubeola) very rarely occurs.

The mild nature and absence of complications and sequelæ in rubeola have been fully recognised, but occasional severe epidemics have been reported. Thus Edwards gives a mortality rate of 4¼ per cent. in a series of 150 hospital cases; Hatfield one of 9 per cent. among a poor class. As regards complications, bronchitis, pneumonia, enteritis, rheumatism, conjunctivitis, have all been reported. Hatfield, Kingsley, Cheadle, and Duckworth have all recorded cases of albuminuria, while Edwards had a rate of 30 per cent. of one series of 166 cases, and 3 per cent. in another of 100 cases (quoted from Welch and Schamberg). These results are in striking contrast to those of the London Fever Hospital. 1939 cases of rubeola have been admitted since 1879, and amongst these there have been no deaths. In the last 478 consecutive cases the only complications observed have been "rheumatic pains" on two occasions, and transitory albuminuria in seven patients.

Premonitory symptoms of rubeola.—The period of invasion is usually short and mild. There is generally a feeling of slight malaise, headache, and sore throat. Coryza is rarely a prominent symptom, but sneezing occurs in a fair proportion of cases. Vomiting is extremely rare (1 in 326 of our cases) and as Caiger points out, its occurrence in a doubtful case is strongly suggestive of the disease not being rubeola. One symptom, however, which has been noticed by several observers, but on which we think sufficient emphasis has not been laid, is the presence of adenitis, occasionally as long as 48 hours or more, before the appearance of the eruption (70 per cent. of our cases). The glands affected are nearly always the posterior auricular, more rarely the occipital, and occasionally the upper part of the concatenate chain. Even in the absence of any palpable enlargement the patient often complains of "stiff neck," and tenderness is elicited on pressure over the upper part of the sterno-mastoid muscles.

In connexion with the adenitis the following points are of interest—viz., that it is usually sufficiently noticeable to call for remark from the patient and that the tenderness is out of all proportion to the amount of the swelling. The enlargement usually subsides with the disappearance of the rash, but in a certain proportion of cases may persist for some days after the eruption has completely faded.

The eruption.—The rash may assume one of three types: (1) the typical rubeola, (2) the morbilliform, or (3) the scarlatiniform.

1. *The typical rubeola type.*—The characteristic rubeola rash presents the following features. It appears first on the face in small, discrete, rose-red, slightly raised papules, then spreads to the trunk and later to the limbs. The legs occasionally and more rarely the arms are unaffected, but on the other hand the rash may be found on the palms of the hands and the soles of the feet, though this is not so frequent as in morbilli. As new areas are involved there is gradual fading of the rash on the parts first attacked, but as the eruption persists for a shorter time on the extremities than on the face and trunk, there is a time when it is universally present and of uniform colour. It is during the time of gradual fading of the rash on the face and trunk that there is a tendency for the papules to coalesce and give rise to an erythematous appearance closely simulating a scarlatiniform eruption. The punctate element is, however, lacking and the rash does not persist in the groins, axillæ, and flexures of the elbows as is usually the case in scarlet fever.

The total duration of the eruption is usually about 72 hours, rarely longer than 96 hours.

2. *The morbilliform type.*—This type of rash usually occurs in those cases where the eruption is very intense. It most closely resembles measles on the face and trunk, but is not so definitely raised and has a distinctly pinkish tinge as compared with the dusky red of morbilli. On the extremities the typical rubeolar rash is generally present, but chief reliance in diagnosis in these cases is to be placed on the absence or presence of Koplik's spots.

3. *The scarlatiniform type.*—The rash may from the onset appear as a more or less erythematous eruption, especially on the trunk. On close examination, however, the areas of unaffected skin are more numerous than in scarlet fever, circumoral pallor is not so frequently observed, and additional help is afforded by the character of the tongue and the absence of the disproportionately rapid pulse-rate, so frequent in this latter disease. It may be noted that the morbilliform type of rash frequently assumes the scarlatiniform type on the second day of the eruption.

The mouth.—The tongue is generally only slightly furred in contrast to the thickly furred tongue of measles or scarlet fever in the early stage. The tonsils, fauces, and soft palate are usually only slightly affected. On the soft palate a macular eruption is not infrequently present which occasionally involves the hard palate, but, as a rule, the sharp line of demarcation between the two is rather noticeable, due in many cases to the hard palate appearing paler than normal. On the soft palate we have on several occasions noticed a fine vesicular eruption in which cases the background appears intensely red. On the buccal mucous membrane a few discrete pink papules may sometimes be seen resembling those found on the cutaneous surface, but nothing in the nature of Koplik's spots is ever observed. We have, however, noticed small yellowish plaques usually on the mucous membrane behind the last molar teeth of the lower jaw, to which Dr. Sidney Phillips has directed our attention, but as these are also occasionally present in morbilli and scarlet fever they are of little value in diagnosis.

The temperature.—This is slightly raised from one to two degrees at the onset of the eruption, but in nearly all cases falls to normal within 48 hours. It is usually highest on the first day of the appearance of the rash, but occasionally may reach its maximum on the second day, never later. The highest temperatures of which we have records are 104·2° in a woman aged 23 years, and 104·6° in a man aged 33 years, but in over 450 consecutive cases we can only find temperatures of 103° and over in 14.

Pulse and respiration.—In neither of these is there anything noticeable. Both are raised proportionately to the rise of temperature.

Desquamation.—In our experience desquamation is of very rare occurrence, is usually limited to the face and chest, and is of a fine "branny" character.

As regards the infectivity of rubeola experience at this hospital bears out Goodall's and Corbin's views that it is only slight and probably only lasts for a very short period, as the disease is extremely rarely contracted here by patients convalescing from morbilli or by nurses.

We have been unable to differentiate from among the admissions of scarlet fever, morbilli, and rubeola any cases of the so-called "fourth disease" described by Dukes. If this disease were an entity it would follow that from time to time cases suffering from it would be sent up to this hospital, and being diagnosed probably either as scarlet fever or rubeola would be admitted into the corresponding ward. The natural result to be expected would be that either these patients would themselves develop scarlet fever or rubeola, as the case might be, or give rise to an epidemic in the ward of "fourth disease." We have failed to observe any such result and in fact we have been unable to find in the case notes of scarlet fever or rubeola any records of "relapses" or other phenomena which would lead one to think that an epidemic of "fourth disease" had arisen in the wards without being recognised as such.

It is often difficult to obtain an accurate account from patients of any exanthems from which they have suffered in the past, but during the last year, out of 113 admissions into the measles wards we have only been able to get a history of morbilli in 49, scarlet fever in 8, and rubeola in 5. If this may be taken as a fair average it would give annually a large number of totally unprotected individuals amongst whom would be a fruitful soil for the implantation of the virus of another exanthem.

The principal conditions from which rubeola has to be diagnosed are: (1) prodromal rashes, (2) other exanthems, (3) influenza and diphtheria with eruption, (4) specific rashes, (5) drug and toxic rashes, and (6) skin diseases.

1. *Prodromal rashes.*—These occur usually in measles, chicken-pox, and small-pox. They are characterised by their irregular distribution and by their ephemeral nature.

2. *Other exanthems.*—The principal points of difference have already been alluded to, but to summarise one may say that they are: (*a*) From morbilli the absence of Koplik's spots, and of the acute discomfort, coryza, and cough so commonly associated with this disease; the brighter colour, the finer texture, and shorter duration of the rash; and the comparatively clean tongue. (*b*) From scarlet fever the mildness of the initial symptoms, and in particular the absence of vomiting; the moderate rise of temperature and the absence of any abnormal increase of the pulse-rate, and in the rash the lack of any punctate element. In scarlet fever sudamina are of frequent occurrence, which is not the case in rubeola. Moreover, in the former disease the dirty tongue, cleaning at the edges and gradually peeling, is quite characteristic.

3. *Influenza and diphtheria.*—Rashes in these diseases are rare. In the former the more acute prodromal symptoms, especially backache, the gastric and respiratory complications, and the possibility of a prevailing epidemic, serve to distinguish it from rubeola. In diphtheria the presence of Klebs-Loeffler bacillus clears up the diagnosis.

4. *Specific rashes.*—In these the probable presence of the initial lesion, the general glandular enlargement and the character of the sore-throat, together with the history of the case, are sufficiently suggestive.

5. *Toxic and drug rashes.*—The former of these mostly arise from the consumption of shell-fish, shrimps, fruit, and tinned foods. Of drugs that give rise to eruptions, belladonna, quinine, copaiba, the salicylic compounds, antipyrin, chloral, potassium iodide, veronal, and mercury are the more important. The true causal agent is, however, more liable to be overlooked in those occasional cases in which a rash is produced by some ingredient of a patent medicine. We have recently had two cases resulting from a somewhat widely advertised and illustrated panacea for all forms of backache, in which the eruption produced somewhat resembled at first sight a rubeola rash. This nostrum, according to Colbeck and Chaplin, contains some resin-like substance, probably copaiba. As probably also toxic in character may be regarded those rashes which occasionally arise after operations. We have recently seen two cases that may be placed in this category, both occurring after removal of the thyroid gland. Enemata and antitoxin also occasionally produce rashes. In all these cases one has to place reliance on the history, and in toxic rashes gastro-intestinal symptoms are often present. The rashes produced are often pleomorphic in character and capricious in distribution. With regard to septic rashes, of these the most important are associated with "drain throat" or arise in the puerperium. In these the antecedent condition and the greater constitutional disturbance give a clue to the diagnosis. The rash is irregular in its appearance and course, and the parts of the body are not involved in the definite sequence in which they are in rubeola.

6. *Skin diseases.*—Of these, we have seen instances of erythema multiforme and pityriasis roseola. In the latter the not uncommon association of stiff-neck with a moderate rise of temperature at the onset of the eruption is specially misleading, but the fact that the rash does not usually commence on the face, that it persists for some time, and that there is often a herald patch, is of assistance in forming an opinion.

We are indebted to Dr. Sidney Phillips and Dr. William Hunter for their kindness in permitting us to use the notes of their cases.

THE CHILD-STUDY SOCIETY OF LONDON.—The Child-Study Society, London, has arranged to hold lectures and discussions during the months of October, November, and December. The subject put down for Nov. 24th, "The Philosophy of Boys' Games," by Mr. Felix Clay (Dr. James Kerr in the chair), should lead to an interesting discussion. Further information may be obtained from the Honorary Secretary, 90, Buckingham Palace-road, London, S.W.

STOVAINE:

ITS USE IN THE TREATMENT OF SHOCK, ETC., IN INJURIES OF THE LOWER EXTREMITIES.

BY GEORGE THOM, M.R.C.S. ENG., L.R.C.P. LOND.,
RESIDENT SURGEON TO THE KASR-EL-AINI HOSPITAL, CAIRO.

THE many publications on the subject of the use of stovaine apparently disregard a very valuable addition to the usual means of combating shock due to severe injuries of the lower extremities. At the Kasr-el-Aini Hospital the admissions for such accidents are very numerous. The crowded streets, the native's disregard of "the rules of the road," and the prevalence of ophthalmia combine to cause the frequent occurrence of tramway, carriage, and similar accidents. Crushed legs of varying degrees are the frequent results. On arrival at the hospital shock is always a marked feature. The police regulations insist on the patients being removed to the nearest police-station, where a *procès verbal* is taken and a report by the police doctor made on the injuries before removal to the hospital. This delay must necessarily add to the shock already present. Restlessness, a symptom of both shock and hæmorrhage, when every movement causes painful contractions of the severed muscles and crepitus of bones, adds to the gravity of the patient's condition unless immediate steps be taken for its alleviation.

At this hospital—where every operation in which low spinal analgesia suffices, stovaine or some similar preparation is used—it is now the general rule to inject a patient suffering from any very severe injuries to the lower extremity as soon after his arrival as possible. The injection is given before removal of clothes, emergency dressings, or splints to alleviate pain during these procedures and in the subsequent examination of the injuries. The preparation of stovaine used is that prepared by Poulen frères—stovaine Billon: borate d'epirenane, 0·00013; stovaine, 0·04; chlorure de sodium, 0·0011 (ampoule, 2 c.c.).

The immediate improvement after injection is very noticeable. Pain and restlessness disappear. The pulse improves rapidly, the colour returns, and the patient's distress diminishes. Thus all the symptoms of shock are alleviated or abolished. During the subsequent operative procedures the patient is encouraged to drink some brandy or other stimulant, so obviating the necessity of giving rectal salines, which may not be retained, or incurring the risks associated with intravenous injections. The operation is performed without that undue haste so often necessary in cases of severe collapse with general anæsthesia. The delay with its associated risks of sepsis and hæmorrhage awaiting the rally of a profoundly collapsed patient, in whom a general anæsthetic would be inadvisable, is practically abolished.

Post-operative shock in these patients is also greatly diminished, both in intensity and duration, as for many hours after the operation pain and restlessness are absent in nearly every case. The absence of nausea and sickness relieves the patient of an additional cause of collapse and enables the continuance of stimulant treatment by the mouth.

Anæsthesia is apparently of longer duration in these cases than in ordinary operative work, as, though the necessary preparation may take half an hour or more, no case has required a second injection for the completion of the operation, though in one case mentioned below a second injection was given later for the return of restlessness. Stovaine certainly has a general anæsthetic effect in addition to the local one, as though I personally always had a horror of the patient realising his condition and what was being done, especially the noise of sawing of bones, of instruments being used, &c., I find that, though able to carry on a conversation, he does not realise their association with himself, and no trouble from such cause has ever arisen.

A few illustrative cases will show the type in which stovaine has been of great assistance:—

CASE 1.—A native boy, aged 8 years; both legs crushed off at the middle of the tibiæ by a tram. The patient suffering from profound shock, pulseless, skin cold and clammy, screaming loudly and throwing himself about, so that with difficulty he was retained on the stretcher. Stovaine Billon, 1 c.c., injected at once into the third lumbar space. Immediate improvement of condition. Double amputation at the site of election performed. Twenty-four hours later sitting up complaining of slight headache. Recovery uneventful.

CASE 2.—A native, aged 25 years. A tram accident, causing severe crush of both legs, necessitating supra-condylar amputation of the left leg and amputation at the site of election of the right leg. Stovaine Billon, 2 c.c., injected. No post-operative shock; rapid and complete recovery.

CASE 3.—A Greek boy, aged 18 years. A tram accident. Left innominate bone crushed, practically severing the left hindquarter; the right thigh crushed off at its middle. The injury was inoperable and the patient was dying. Stovaine Billon, 2 c.c., injected to relieve his agony and on account of his desire to see his relatives before he died. Though immediate death could only have been expected in his condition the patient lived for 14 hours, quiet and comfortable, and conversing rationally with his parents and friends. He died without pain mainly from intra-abdominal hæmorrhage.

CASE 4.—A native girl, aged 11 years. A tram accident, the wheels passing over the left ankle, severing the foot and through the right knee-joint, lacerating the muscles to the upper third of the thigh. Injected 1·5 c.c. immediately on admission, though unconscious, pallid, and pulseless from hæmorrhage and shock—practically dead. Intravenous injection with brandy and adrenalin was given at the same time. Consciousness returned in about 20 minutes. Owing to the oozing of blood from the lacerated thigh and the impossibility of controlling it amputation (right subtrochanteric) and at the same time removal of the left foot was decided to be necessary, in spite of the patient's hopeless condition. She drank stimulants freely during the operation, and six hours later showed much improvement in condition, which she maintained for 30 hours. She then became delirious (temperature 40°C.), and died 48 hours after admission from acute septicæmia due to gangrene of the lacerated skin and muscle flaps which unfortunately had to be employed. There were no additional signs of shock following the operation.

The foregoing case and the previous one to it (Cases 3 and 4) are the only cases of death to record since the employment of stovaine as described.

CASE 5.—A native girl, aged 8 years. A tram accident, the left leg and foot being crushed longitudinally from the mid-tibial region. The patient was suffering from profound shock and hæmorrhage, and was pulseless and unconscious. Stovaine Billon, 1 c.c., injected in addition to other routine treatment for shock. Though the patient's condition was apparently hopeless, half an hour later she had so far improved that amputation at the site of election was performed. Consciousness returned soon after injection. During the operation she was encouraged to drink brandy-and-water, and immediately after the operation her condition caused no anxiety. Four hours later the pulse again failed and restlessness intervened. A second injection of 1 c.c. was given. The patient soon went to sleep, all signs of shock disappeared, and recovery was uneventful.

An interesting point was manifested by the second injection in Case 5. The cerebro-spinal fluid tension was low when first tapped, but on the second introduction of the needle the fluid spouted out in a forcible stream. The relief of tension thus may account in part for the quietening of the patient. This feature also suggests the re-introduction of the needle after completion of the ordinary operation cases, so relieving tension and withdrawing any solution possibly unabsorbed, and so obviating or diminishing the toxic effects, such as headache, pains in limbs and back, complained of in varying degrees by about 60 per cent. of patients. To the present time there have not been a sufficient number treated in this way to make any certainty of this point.

Many similar cases might be quoted in which the use of stovaine has shown its undoubted value in the relief of immediate shock, previous to and during the operation and in the marked diminution of post-operative shock. Several of these patients were, on admission, so collapsed that the administration of a general anæsthetic and operative interference would have been out of the question. A dangerous delay awaiting their rally must necessarily have ensued under any other form of treatment.

I should like also to mention the obvious advantages of stovaine in the treatment of cases of fractures of the lower extremity in which an anæsthetic is necessary. The possibility of struggling during the second stage of general anæsthesia and of attempted movement during recovery are always a serious consideration in their administration. With stovaine a fracture may be put up without these risks. The patient relieved of pain understands what is being done, whilst his inability to move prevents the possibility of a plaster being broken or bandages loosened—accidents which so frequently occur during recovery from general anæsthesia. Another great advantage, even in hospital practice, is the limitation of the number of skilled assistants necessary.

Finally. I wish to express my thanks to Mr. Frank C. Madden and Mr. O. Richards, under whose care the treatment of these cases was conducted, for permission to publish this paper.

Cairo.

THE TORQUAY MEDICAL CHARITIES.—As a result of the recent combined Friendly Societies' Fête, which was held in Torquay, the sum of £121 has been distributed amongst the medical charities of that town.

Reviews and Notices of Books.

Dislocations and Joint Fractures. By FREDERICK J. COTTON, A.M., M.D., Assistant Surgeon to the Boston City Hospital. With 1201 illustrations, 830 being from drawings by the author. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 654. Price 25*s.*

THE book was originally planned as a treatise on dislocations, but a consideration of the fact that dislocations do not present themselves to us as such, but rather as injuries to or near joints, has led the author to write of these injuries considered together. The great number and value of the observations which the use of X ray photography has accumulated have placed us in a position in which our methods, although they must still be influenced by clinical records, do not necessarily follow the fashion of preceding generations. The work of Dr. Cotton is largely personal, and although a few of his conclusions as to treatment are assailable, in the main he has presented the doctrines of the developed knowledge of the day.

The author begins with an introduction in which he discusses general questions, and he then passes to the detailed consideration of joint fractures and dislocations in a regional arrangement in 35 chapters. On the question of the routine use of X rays he is very clear in disclaiming the necessity for a skiagraph as a preliminary to the treatment of fractures in general, and states that the time for the X ray picture is after and not before reduction. In this we are disposed to agree with him, as the cases in which an accurate diagnosis is essential to reduction of gross displacement are limited, and in the great majority of cases a properly trained surgeon can make his diagnosis, so far as practical details go, without the help of the X rays. Although the X rays, in the author's opinion, should not be used in place of skilled manipulation for diagnosis, or as the arbiter of end results, he considers their use to be proper for a record of the case and necessary to confirm the diagnosis, and more especially check the treatment. Malposition if recognised within a fortnight is usually amenable to correction by handling, but if it cannot be so reduced it may require an open operation and an X ray photograph to review the result.

An adequate space is devoted to the consideration of luxations and fractures of the cervical region of the spine, and the differential diagnosis of injuries below the axis by means of "cord lesion" is fully considered. This part, like the rest of the work, is illustrated by drawings made by the author from actual cases, which are of value apart from their use in illustration of the text, as they exhibit very clearly the attitudes adopted by individuals with spinal injury, sometimes the only determining sign in a difficult diagnosis. As a rule, the author describes in each section only that mode of treatment which has proved in his own hands to be the most successful, and he does not discuss at any length the various alternative methods. For practical purposes this is probably an advantage, and we confess that the author gives us the impression that he is the possessor of much practical common sense and sound judgment. In the treatment of fractures of the humerus above the elbow-joint, in which it is difficult to preserve the straight long axis of the arm, and which on this account is often treated on a straight splint, the author prefers the Osgood-Penhallow splint, which corrects the backward displacement and overlap very effectually, deformities which if allowed to persist are much more serious than a slight "gun-stock" arm. These are considerations entirely apart from the practical inconvenience of the straight splint and the awkwardness of a possible ankylosis of the elbow at or near the useless position of full extension. Mediocarpal injuries are not forgotten, and some very practical hints are given to assist in the important differentiation of fracture of carpal bones from sprains of the wrist.

Dislocations of the hip are classified into posterior and anterior forms, the matter of first importance being whether the head of the femur has escaped so as to lie behind or in front of the plane of the Y ligament. The very irregular forms where the strong ligaments are torn loose, allowing the femoral head to take any position, and "central luxation of the hip," in which fracture of the pelvis at the acetabulum permits the entrance of the femoral head into the cavity of the pelvis, are separately considered. Reduction is by the direct manipulative methods of Allis, failing which the circumduction methods of Bigelow are to be tried, and in the last resort open operation is to be preferred to the older methods involving great force. Fractures of the neck of the femur are very ably and systematically considered, and the many expedients for maintaining the fragments in close apposition are well illustrated and explained. A chapter is devoted to fracture of the os calcis, the treatment of which resolves itself into the question of determining which cases call for reduction and which should be allowed to consolidate without interference. The methods of drawing down the heel by the help of a spindle thrust through the skin in front of the tendo Achillis and of reducing the width of the injured heel by blows from a mallet are novel and striking, but in the author's hands apparently productive of satisfactory results.

The book is well bound, well printed, and well illustrated by drawings, diagrams, and photographs. It is a pity that the plan of reinforcing his X ray photographs by carefully drawn outlines, which the author has adopted in many parts of the work, has not been adhered to throughout. The book is one which would be of service in the hands of consultant, casualty surgeon, and general practitioner alike, for they will find in it much to assist and guide them, and very little with which to quarrel.

Physical Chemistry: its Bearing on Biology and Medicine. By JAMES C. PHILIP, M.A., Ph.D., D.Sc., Assistant Professor in the Department of Chemistry, Imperial College of Science and Technology, London. London: Edward Arnold. 1910. Pp. 312. Price 7*s.* 6*d.* net.

ONE of the most hopeful signs of progress in the recent advances in certain physiological as well as in pathological processes has been the application of the conceptions and methods of physical chemistry to the elucidation of these problems. It seems all the more imperative, therefore, that students of biology and of medicine should be acquainted with the underlying principles of these physico-chemical methods. Unfortunately, not much attention is given, by the medical student at least, to these methods.

This book originated in a course delivered to biological students at the University of London in 1909. In the treatment of his subject the author assumes on the part of the student an ordinary acquaintance with physics and chemistry, and he has avoided as far as possible the use of mathematics. Physical chemistry has recently busied itself with new methods for the study of the phenomena exhibited by solutions, and as there is a close analogy existing between the behaviour of solutions and that of gases the author begins with a terse but clear description of certain features which characterise the gaseous state, and also of various theories bearing on the nature of gases, such as the kinetic theory of gases, Avogadro's hypothesis, and the static diffusion of carbon dioxide. The last subject in its biological applications is illustrated by the gas exchange between the atmosphere and the assimilating cells of a

leaf, which in some respects resembles a multi-perforate diaphragm.

The absorption of gases by liquids is next dealt with. The solubility of gases in salt solution leads to a consideration of the absorption of oxygen and other gases by the blood. Two chapters are devoted to the very important subject of diffusion and osmotic pressures. In each case the resulting movement may be regarded as due to a pressure. The importance of semi-permeable membranes is now well recognised, and the author illustrates their biological importance by experiments on the semi-permeable covering of barley grains — a membrane which is not penetrated by sulphuric acid. A wheat grain may be steeped in a solution of copper sulphate and so any adherent fungus spores may be destroyed without affecting the vitality of the seed itself. Isotonic and hypertonic solutions are fully considered, and the part played by the latter as an osmotic stimulus in the artificial parthenogenesis of the unfertilised eggs of a sea-urchin by Loeb is mentioned.

The action of semi-permeable membrane is considered, and this naturally leads to the consideration of the permeability of living membranes, including root hairs, spirogyra cells, the behaviour of organic dye-stuffs, and Overton's theory of lipoids—such as cholesterol and lecithin—in plasmatic membranes, a theory which has recently been criticised adversely by Ruhland. The difficulties of a purely physical theory are pointed out and discussed. The relations between osmotic pressure and freezing point and molecular weight is fully gone into, together with their biological applications. The apparatus of Beckmann for determining the freezing point is now much used in hospitals in connexion with urine. The author, however, deals more fully with the freezing point method for the study of the osmotic pressure of the blood from different animals. The freezing point of mammalian blood does not vary much from one species to another. The freezing-point of urine, however, even in a healthy person, varies within wide limits. In all invertebrate marine animals the freezing point of the blood, or body fluid, is the same as that of the water in which they live.

The behaviour of salts, acids, bases in aqueous solution, leads necessarily to a consideration of the principles of dissociation. Three chapters are devoted to the all-important subjects of colloidal solutions, the separation of colloids from these solutions, and adsorption. There is included an account of the Ultra-microscope, the colloid nature of enzymes, toxins and antitoxins, and the phenomena of agglutination. The last two chapters deal with the law of mass action and the velocity of chemical reaction, including catalysis and enzymatic action.

The subject-matter is excellent and the descriptions are both clear and concise. The work should prove most useful both to biologists and physiologists. There is an excellent subject index, as well as an "author index," and numerous references to original papers.

Medical Gynecology. By SAMUEL WYLLIS BANDLER, M.D., Adjunct Professor of Diseases of Women, New York Post-Graduate School of Medicine and Hospital. Second edition, revised. With original illustrations. London and Philadelphia: W. B. Saunders Company. 1909. Pp. 698. Price 21*s*.

THIS book has apparently met with a favourable reception in America, and a second edition has been called for. It would, therefore, seem to fulfil a want on the part of American students or practitioners. We cannot predict for it any similar success in this country. The author has carried out a revision and has incorporated in this edition an account of Head's work on disturbances of sensation associated with visceral disease. This is not quite the same thing as "Head zones," a somewhat unfortunate expression which he employs. We think it is a pity that Dr. Bandler has not consulted Dr. Head's original articles, but has apparently taken his acquaintance with them from the writings of Elsburg and Neuhof; in important works of this description the original articles should certainly be referred to.

The book contains a very large amount of repetition, of which a good example is to be seen in the account of gonorrhœa and its various sequelæ. In the section on gonorrhœa in adults all the inflammatory lesions which may arise in the course of the disease are described, and then they are again described in the various sections dealing with diseases of the different organs. Under the heading of endocervicitis there is a statement with which we entirely disagree—namely, that the two symptoms of endocervicitis are a mucoid discharge and the pain due to the involvement of the cellular connective tissue, in other words to parametritis. The author brings forward no proof in support of his statement that endocervicitis usually results in parametritis; in our experience it does not, and therefore we do not consider that pain due to this cause is at all a common symptom of so-called endocervicitis. This confusion of symptoms due to two different conditions is characteristic of the author's habit of writing, and for this reason the book is not one we can recommend.

Dr. Bandler is in favour of bimanual massage in chronic conditions of the pelvic organs, a mode of treatment which is quite out of favour in this country and which is at any rate not practised by any gynæcologist of repute at the present day. In the same way the treatment of pelvic affections by electricity, although it is true it is carried out by some specialists in the application of electricity, is not practised to any extent by recognised gynæcologists, and for this reason the English reader will have no sympathy with the large amount of space the author devotes to this method of treatment.

A Textbook of Obstetrics. By BARTON COOKE HIRST, M.D., Professor of Obstetrics in the University of Pennsylvania. New (sixth) edition, revised and enlarged. With 847 illustrations, 43 coloured. London and Philadelphia: W. B. Saunders Company. Pp. 992. Price 21*s*. net.

IN this, the sixth edition of his well-known text-book, Professor Hirst has made numerous additions to the sections on operations. He maintains, and in our view quite rightly, that all the diseases of women must be considered in relation to the chief act in woman's history, child-bearing. The vast majority of these diseases are consequences, and all are possible complications, of that process. Therefore, the obstetrician should also be a gynæcologist. With this argument we quite agree, and indeed in this country it has long been the custom that obstetric physicians should also practise gynæcology and perform gynæcological operations. But when the author maintains that it is illogical to recommend various gynæcological operations to the student and then in a text-book on obstetrics not to tell him anything about them, we cannot agree. That is to say, the student should of course be told all about these operations, but in our opinion this is best done in a book devoted to gynæcology, such a work, for example, as Professor Hirst's own excellent book on diseases of women. An attempt such as has been made in this work to include a description of all the gynæcological operations recommended leads to an over-bulky volume, and further, it is impossible to describe them so adequately or so well as can be done in a separate book. For this reason we do not think that the author has been well advised in adding to his book the descriptions of all these various operations. Nor, indeed, he has limited his descriptions to operations the

result of childbirth; for example, this term cannot be applied to the operation for complete atresia of the vagina, to which some three pages are devoted.

This new edition has been increased in size by many pages and 80 illustrations have been added, giving it unwieldy proportions. The section on the application of the forceps is disappointing; the author figures an old model of Tarnier's forceps, and tells his readers that this represents the latest and best type of axis-traction forceps. He says nothing of the work done by the late Milne Murray, and the very excellent patterns of axis-traction forceps he devised, much better and more efficient than those of Tarnier. Professor Hirst does not, however, use axis-traction forceps properly, since he apparently takes off the traction rods when the head is in the cavity and makes traction on the handles—an entirely faulty procedure, and one which converts even the best pair of axis-traction forceps into a very bad pair of ordinary forceps. The grip suggested for the purpose of making axis traction with a pair of Simpson's forceps is not nearly as satisfactory as that recommended by Galabin, and we can recommend Professor Hirst to try the latter method in place of his. He is of opinion that pubiotomy, or hebotomy as he prefers to call it, will become obsolete and does not approve of the operation. In this he will be supported by the opinion of nearly all English obstetricians, but at the same time he does not describe the best methods of performing the operation, nor does he give his readers the latest and best results which have been obtained; they are, therefore, not in a position to form an independent judgment. It is a pity when drawings are taken from other works that they are not taken from the originals. Thus, for example, Fig. 464 from Pinard and Varnier's Atlas does not in reality represent the original, since in the latter the line of section does not pass through the cervical canal. This may seem a small matter, but accuracy in things of this kind is important, and it should be stated that the drawing is really diagrammatic. It is odd when the two instruments are both mentioned that anyone should recommend decapitation with a Braun's blunt hook rather than with Ramsbotham's sharp hook, but it is so in the present case.

There is a great deal in this book of value, and it is undoubtedly a useful and fairly complete text-book; there are, however, minor inaccuracies and omissions which detract to some extent from its value. As we have already said, we think the attempt made to convert it in part into a text-book of gynæcology as well as one of obstetrics is a mistake.

Fractures and Separated Epiphyses. By ALBERT J. WALTON, F.R.C.S. Eng., M.S., M.B., B.Sc. Lond., L.R.C.P. Lond., Surgical Registrar, London Hospital. London: Edward Arnold. 1910. Pp. 283. Price 10*s.* 6*d.* net.

THE book under review is addressed to the students of the London Hospital and deals with all the varieties of fracture that are likely to come under their notice. The first three chapters are given over to general considerations, and the remaining 13 deal with the fractures of particular bones. The author's aim has been to indicate the smaller details of treatment, so that "anyone having no special previous knowledge of this branch of surgery might find this book an aid to him in the practical treat-treatment of any fracture." In this he has succeeded very well. At the same time he has thought it advisable to describe in their main outlines the more complex methods, including open operation, which may at times be necessary. Those who undertake these operations will no doubt prefer to consult original descriptions for help and guidance, but, nevertheless, the author's descriptions will prove of help to students and house surgeons assisting at such operations.

The author is not an extremist. He prefers the *via media* between the method of complete and continuous immobilisation and the ambulatory method, and advocates the judicious use of massage and passive movements in combination with retentive apparatus, the friction and movement being regarded as the adjunct to the splint and not its substitute. In regard to amputation for fracture, he holds strongly conservative opinions. Thorough antiseptic treatment of compound fractures saves many a limb, and the amputation which may be afterwards required leaves a "soft, supple, and painless stump" instead of the "painful irregular stump of a primary amputation." Sufficient information is given of recent important advances in the surgery of fractures, especially in regard to injuries of nerves and bone grafting. The book is well illustrated with radiographs, and contains many clearly executed diagrams depicting the methods of application of the splints in common use.

Read without regard to the context, some of the author's sentences are unfortunate. An instance appears on p. 164, beginning the third paragraph: "If the neck be fractured, the arm should be put up in a position of flexion, &c." Viewed as a students' book, and it claims to be no more, it can be well recommended both on account of the practical details it contains and the sound common sense which characterises it.

Serum Diagnosis of Syphilis and the Butyric Acid Test for Syphilis. By HIDEYO NOGUCHI, M.D., M.Sc., Associate Member of the Rockefeller Institute for Medical Research, New York. London and Philadelphia: J. B. Lippincott Company. 1910. Pp. 173.

ONE of the most remarkable advances in modern medical practice has been the discovery of chemical and bio-chemical tests for the recognition of certain diseases. Roughly, these tests may be divided into the purely chemical, of which Ehrlich's diazo reaction and Cammidge's test for pancreatic disease may be taken as types, and the tests dependent on reactions involving living organisms and their specific products, as seen in the test for enteric fever associated with the name of Widal, as well as in the precipitin tests used in medico-legal investigations. The reaction found by Wassermann in the blood of syphilitics seemed at first likely to fall into the latter class, but further research would seem to show that it is rather an example of the former, since it is now known that the syphilitic antigen may be replaced by material derived from a source uninfected by this disease. Many variations of the test have been proposed, but all of them remain somewhat complicated and unfit for ordinary clinical use, involving as they do procedures which can scarcely be carried out except in a well-equipped laboratory.

In the volume before us Dr. Noguchi explains the simplified method which he himself has devised for carrying out the test and which he hopes may facilitate its general use. It consists in employing small pieces of filter-paper impregnated with the antigen and the amboceptor respectively for addition to the fluid to be tested and to the control. He also points out that an incubator is not indispensable, as the warmth required may be obtained by carrying the tubes in the waistcoat pocket. In spite of this ingenious arrangement we doubt whether the test can be brought into general clinical use, in view of the existence of doubtful and incomplete reactions in many cases. These can only be interpreted by an expert, and we are inclined to think that in inexpert hands the test would lead to error rather than to illumination. Nevertheless, the book is well worthy of perusal as it contains a very clear account of the phenomena on which the Wassermann test depends, illustrated by coloured diagrams; and the peculiar quantitative relations of complement and amboceptor in the process of hæmolysis are well shown.

The last chapter is devoted to an account of a second chemical test for syphilis, devised by the author, depending on the existence of an increased amount of globulin in the cerebro-spinal fluid of syphilitic patients. The procedure consists in mixing two parts of the cerebro-spinal fluid with five parts of a 10 per cent. solution of butyric acid, heating the mixture, and then adding one part of normal caustic soda solution, and boiling. A flocculent precipitate of globulin is thus thrown down, the greater the amount present the shorter being the time required for the reaction. An increased globulin content may be present in cases of meningeal inflammation, but such can be readily distinguished from syphilis. Dr. Noguchi thinks that the test is of considerable value for the recognition of syphilitic and para-syphilitic conditions, and gives tables showing the correspondence of the results obtained by means of this test and of the Wassermann reaction. The book ends with an exhaustive bibliography.

LIBRARY TABLE.

Malaria and Mosquitoes. By Major R. J. BLACKHAM, R.A.M.C., Divisional Sanitary Officer at Peshawar. With a preface by Lieutenant-General Sir JAMES WILLCOCKS, K.C.M.G., Commanding the First Division of the Indian Army.—This pamphlet is the reproduction in printed form of a lecture delivered by Major Blackham before the officers, non-commissioned officers, and men of the Peshawar Division with the object of instructing them how to escape the dangers arising from malaria. A concise account is given of the life-history of the anopheline mosquito and of the malarial parasite. The pamphlet contains some 15 illustrations. The mosquito is said to be the pest of the Peshawar Valley, and life there in summer is a continual campaign between the soldier and the insect. The advice given by the author is sound, and if followed up the result should be increased health as well as comfort for the troops in that region. Major Blackham is not gallant, as the following quotations will show: "In malaria, as in many of the ills of this life, it is a case of *cherchez la femme*. The male mosquito is a harmless vegetarian, but his mate is a voracious carnivora." "In cool climates the lady mosquito, instead of being braced up, becomes lethargic and either goes back to vegetarian habits or merely hibernates. In this respect she resembles some individuals of her sex on a higher plane who are harmless in temperate climates, but develop bad habits in the warmth of the tropics." "It is quite easy to distingush the innocent male anopheline from the wicked vixen, his wife." In referring to the owl midge which transmits disease in the Peshawar Valley, Major Blackham remarks "here, again, it is the ladies of the family who give all the trouble."

Anæsthesia in Dental Surgery. By THOMAS D. LUKE, M.D. R.U.I., F.R.C.S. Edin., and J. STUART ROSS, M.B. Vict., F.R.C.S. Edin. Third edition. With 27 illustrations. London: Rebman, Limited. 1910. Pp. 227. Price 6*s.*—In the third edition of his book Dr. Luke has had the coöperation of Mr. Ross, in whose hands has been placed the revision of portions of the text. The alterations, however, are not of such scope as to demand a detailed account of this edition. The book maintains its former character as a clear account of the practice of anæsthetics in connexion with dental surgery. There has been appended a short summaryof the recent attempts at legislation on behalf of the public welfare in connexion with anæsthetics, and the authors give their own views as to the desirability or otherwise of administration by those not medically qualified. Another new feature is a list of recorded fatalities under ethyl chloride. In the section devoted to the nasal administration of nitrous oxide we are disappointed at finding no allusion to Trewby's apparatus, probably the most efficient at present in use. Dr. Luke is to be congratulated on the appearance of a third edition, an evidence of the success which the concise and practical character of his manual has earned and fully deserved.

Old Continental Towns. By WILFRID M. GALLICHAN. London: T. Werner Laurie. 1910. Pp. 291. Price 6*s.* net.—Mr. Gallichan has managed in the space of some 300 pages to provide his readers with some pleasant if superficial chat about various celebrated towns. The superficiality is necessary, for he deals with such cities as Rome, Florence, Verona, Chartres, Athens, and Toledo, any one of which would afford material for a book ten times the size of the one before us, and in all there are 25 towns dealt with. Of the historic and artistic interest of all there can be no doubt, and at least two of the cities in question—namely, Cordova and Toledo—are of special interest to medical men, for it was in these towns that the lamp of medicine was kept alight by the Moors from the tenth to the twelfth centuries, when in other parts of Europe except Salerno it was nearly extinct. Cordova, too, was the birthplace of Averrhoes; and Gerard of Cremona, who translated 76 medical works from Arabic into Latin, worked at Toledo. The book is illustrated by reproductions of old prints, mostly dating from the first half of the last century, and may be recommended to anyone who wishes to get a bird's-eye view of cities steeped in historical and artistic lore.

JOURNALS.

The Quarterly Journal of Medicine. Edited by WILLIAM OSLER, J. ROSE BRADFORD, A. E. GARROD, R. HUTCHISON, H. D. ROLLESTON, and W. HALE WHITE. Vol. III. No. 12: July, 1910. Oxford: At the Clarendon Press. Subscription price 25*s.* per annum; single numbers, 8*s.* 6*d.* each.—The contents of this number are: 1. Ochronosis Associated with Carboluria, by A. P. Beddard. This paper contains a record of a case of ochronosis associated with the use of carbolic oil for ulceration of the legs. The relation of this condition to chronic poisoning with carbolic acid and to alkaptonuria is discussed and the various views expressed by different authorities are reviewed. 2. Bigeminy of the Ventricle and Auricular Fibrillation, by Thomas Lewis. Tracings and electro-cardiograms are reproduced to show that the ventricular bigeminy which occurs in clinical instances of auricular fibrillation, either spontaneously or in the wake of digitalis administration, is due to disturbance of the irregular series of responses to the auricle by ectopic beats arising in the ventricular musculature itself. 3. A Simple Clinical Method to Demonstrate and Measure Dysergia, by Tom A. Williams. 4. Modern English Cardio-vascular Teaching, by E. M. Brockbank. He subjects some of the conclusions of Dr. James Mackenzie and his followers to a detailed criticism, and combats the generally accepted view that the crescendo murmur of mitral stenosis is auriculo-systolic in origin. 5. The Motor Functions of the Stomach: Part I., Physiology, by Arthur F. Hertz. This is an interesting review, with bibliography of recent work, including the observations of bismuth meals by means of the X rays. 6. Some Morbid Histological Changes met with in the Lymphatic Glands, especially in connexion with the Formation of "Hæmolymph" Glands, by W. O. Meek. It appears that in pathological conditions in the human subject the occurrence of hæmolymph glands in large numbers is almost universal, and further, that every lymphatic gland is a potential hæmolymph gland. The changes observed in lymphatic glands in acute and chronic diseases, together with their histological characters, are described. Some observations on the cellular elements of the glands and on the fluid expressed from the glands are also given. The latter seemed to show that antibodies and

allied substances which occur in the blood serum are not easily demonstrable as such in the lymphoid organs in other than small amounts. 7. Critical Review: Lactic Acid in Metabolism, by J. H. Ryffel. Part II., Lactic Acid in Pathological Conditions. The conditions under which this acid may accumulate in the blood sufficiently to cause its active excretion are enumerated, and its formation in connexion with excessive muscular activity, the eclampsia of pregnancy, diminished oxidation, diabetes, and other conditions is discussed. A bibliography of 55 references is appended.

The Quarterly Journal of Microscopical Science. Edited by Sir RAY LANKESTER, K.C.B., F.R.S., with the coöperation of ADAM SEDGWICK, F.R.S., SYDNEY J. HICKSON, F.R.S., E. A. MINCHIN, M.A., and GILBERT C. BOURNE, D.Sc., F.R.S. With lithographic plates and text figures. London: J. and A. Churchill. New series. No. 219, vol. lv., Part 3. September, 1910. Price 10*s.* net.—The articles contained in this number are: 1. Notes on the Free Living Nematodes, by F. P. Potts, M.A., Fellow of Trinity Hall, Cambridge, with 11 text figures. (1) The Hermaphrodite Species. Mr. Potts has worked at the Sutton Broad Laboratory, Norfolk, and has particularly studied the two forms, Rhabditis gurneyi and Diplogaster maupasi. In the free-living nematodes of these groups some are bisexual; some are hermaphrodite, in which, besides the self-fertilising protandrous hermaphrodites which form the great mass of the species, there are occasional male individuals perfectly developed apparently, but taking no part in reproduction; and, lastly, some that are parthenogenetic, in which males have not been found. The description of these forms and their biology occupies the greater part of the article, but there are extended notes on hermaphroditism, both complete and partial, and on self-fertilisation. 2. Observations on Trypanoplasma Congeri: (1) The Division of the Active Form, by C. H. Martin, demonstrator of zoology, University of Glasgow, with one plate and one text figure. 3. The Development of Aplysia Punctata, by Mr. A. M. Carr Saunders and Miss Margaret Poole, with one plate and 20 text figures. The observations of these investigators were commenced by Mr. A. M. Carr Saunders at the zoological station at Naples, and have been completed by both at Oxford. The authors give a very full account of the development of the several organs of the sea mouse, illustrated by numerous figures. The article is exceedingly interesting as showing the earlier processes of cell division in the embryo and then following out the history of the structures proceeding from each cleavage cell—information which is sadly needed, not in the mollusca alone, but in many other forms of life. 4. The Relation between Light and Pigment Formation in Crenilabrus and Hippolyte, by F. W. Gamble, F.R.S., Mason Professor of Zoology, University of Birmingham, with a plate. 5. Is the Trophoblast of Hypoblastic Origin, as Assheton will have it? by A. A. W. Hubrecht, with seven text figures. Mr. Hubrecht thinks it is not. 6. The Origin and Formation of Fibrous Tissue Produced as a Reaction to Injury in Pecten Maximus as a Type of the Lamellibranchiata, by G. H. Drew, B.A., Beit Memorial Research Fellow, and W. de Morgan, F.Z.S., with a plate.

MEDICINE AND THE LAW.

Prepared or Vegetable "Lard."

IN two recent cases heard at the South-Western and Clerkenwell police courts respectively, the subject of the prosecution was the alleged sale as "lard" of vegetable preparations manufactured in imitation of lard from cocoa-nut oil. At the South-Western police court Mr. Chuter, inspector under the Battersea borough council, proved that while he was dividing, according to the prescribed practice, the article which a female witness had purchased for him at his request, the defendant who had sold it said: "This is not pure lard, it is prepared lard," and added in explanation, "It is vegetable lard"; and it was not denied that the defendant when the purchase was being made and when he was asked for "lard" made a statement to the effect that what he was selling was "prepared lard." Also under the stuff in the wrapper was a green label bearing the words, "McDoddies' Prepared Lard—a pure vegetable product." Mr. De Grey, the magistrate, seems to have had some doubts as to the decision at which he ultimately arrived, for he observed that it was an objectionable practice to describe something as lard that was not lard. Nevertheless, he gave weight to the statement made that the article sold was "prepared," and also to the presence of the label, which, in his opinion, could easily be seen, and he dismissed the summons, although he refused to allow any costs to the defendant. In the second case referred to the "lard" sold was of a similar character, and was in a wrapper which described it as "Pure Vegetable Lard," with the word "lard" in large and the word "vegetable" in small type. In this case Mr. Ricketts, appearing for the prosecution, laid stress upon the true meaning of lard as defined in the Pharmacopœia and "Encyclopædia Britannica," which, he stated, described it as prepared from "hog fat." For the defence it was argued that lard was a generic term applicable to a vegetable fat. Mr. D'Eyncourt held that the wrapper produced before him was not a sufficient disclosure to the purchaser of the nature of the article sold, and, moreover, he accepted the definition of lard as "hog's fat." He pointed out that apart from the Sale of Food and Drugs Act, under which the summons was taken out, an action would lie in such a case at common law for breach of contract, and he convicted the defendant, fining him £10, with £1 11*s.* 6*d.* costs. In comment upon these two cases it may be pointed out that, like most others of their class, they arise out of the desire to sell an article which the vendor can obtain more cheaply instead of an article which will cost him more. The wrapper with the word of qualification printed small is an old device, and the purchaser in any case derives but little protection or information from a wrapper which he or she usually does not take the trouble to read. With regard to the point as to "lard" being a generic term, it may be suggested that the honest manufacturer, having had pointed out to him by Mr. D'Eyncourt that it is not, can cease to use it and will find a generic term, and a very obvious one, at his command. He can call his compound "vegetable fat," or "prepared fat" without any likelihood of his right to do so being questioned. This, however, he is not likely to do. Such terms as "lard" and "suet" indicate the source from which the fat should be derived, and are used because purchasers want lard or suet, and ask for them, but would not purchase "vegetable fat" if that accurate description were placed conspicuously on the label. The particular implication of the word "prepared" in the first case referred to which appears to have influenced Mr. De Grey is not easy to grasp. "Prepared lard" might imply lard which had been prepared or made ready for use in some particular way, but in the ordinary use of two not very extraordinary English words it would hardly suggest to anyone that the article in question was not lard at all. It must be remembered, moreover, that the purchasers whom it is sought to protect by proceedings such as those referred to are housewives of a humble and not very highly educated class.

The Law Relating to Medical Prescriptions.

All are aware of the difficulties, financial, practical, and ethical, which have hindered the universal adoption of the practice of prescription writing, amongst which not the least is the loss of control of his patient by the medical man, which may follow from the giving of a prescription to a person who, ignorant or careless of its real significance as specifying a remedy for a particular individual, in a particular state, at a particular time, may have it dispensed more often than is necessary, or, indeed, safe, may pass it on to his friends and neighbours in a spirit of false benevolence, or may even make it a source of commercial gain. The consideration of these very real dangers involves questions as to the legal property in a prescription and the rights, if any, retained in it by its author after he has handed it to his patient. Such questions are often debated, but sometimes, we fear, without due appreciation of the points of law involved, and we have pleasure in commending to the notice of all who are interested in them an article which has been specially written for our columns, and which appears on p. 1030 of this issue. Although somewhat negative in its conclusions, it will, we trust, serve a useful purpose as a learned review of the subject in all its bearings.

THE LANCET.

LONDON: SATURDAY, OCTOBER 1, 1910.

Dentistry and School Children.

THE treatment of the teeth of our children is a matter of the first importance to the country, a fact which the revelations of the officers undertaking the medical inspection of school children have brought clearly to the knowledge of all. But if inspection has revealed the evil, the remedy has yet to be found. The problem bristles with many difficulties, and very divergent views are held as to the proper course to pursue. At the London County Council the matter is now under discussion by a committee of that body, and in order to supply a basis for deliberation and a standard for comparison Mr. R. BLAIR, education officer to the Council, has brought to public attention the methods being adopted in certain parts of the German Empire and their results. Those adopted in Strasburg and Berlin are referred to especially in Mr. BLAIR'S excellent report on "School Dentistry in Germany," and there can be no doubt that our great cities, and not only London, have much to learn from our German neighbours, though direct imitation in every respect would not be generally thought wise. In Strasburg a school dental clinic was established in 1902, and since its foundation 26,164 children have been examined, the work including 42,457 fillings and 45,285 extractions. The officials of the clinic include as honorary director Professor JESSEN, the veritable pioneer of the work in that city, two paid dental surgeons (ladies), a clerk, and two assistants. The paid dental surgeons are State officials, are engaged for full time, and are not allowed to undertake private practice. The treatment is quite free and tooth-brushes are given to the patients. The whole expense of the clinic is therefore borne by the municipal authority. In Berlin, where there are 230,000 children, the work is conducted on independent lines, although it is aided by the local educational authority. The Imperial law of 1893 provides for compulsory insurance against unemployment through physical disablement, and every wage-earner whose annual income does not exceed £100 must, after the age of 16, contribute a fixed amount weekly to the national insurance fund. The law permits the local administrative authority to provide means for preventive treatment, if thereby they can save their funds. The Berlin Landes-Versicherungsanstalt has availed itself of this enactment to establish dental clinics. Two school clinics have been formed, the officer in charge of each receiving £200 per annum and the assistant officer £10 per month. To each clinic are attached a properly trained nurse and a woman clinical assistant, the stipends being respectively £60 and £36 per annum. Towards the establishment of these clinics the local educational authority has contributed £1000 towards capital expenditure and maintenance. It is considered that at least 13 clinics will be required for Berlin.

When we turn to the problem as it confronts us in London we are met with the magnitude of the task, for it is computed that there are about 600,000 children requiring treatment, the appalling amount of disease being quite unappreciated except by the dental surgeons attached to the schools or the hospitals. We take London as the example upon which to found our remarks, because of its gigantic size, and because the problem before the London County Council is acute; but the general lessons apply to any great city, though the difficulties of dealing with the admitted evil are probably more complicated in a congeries of towns like London than in any homogeneous centre, however great. To the thoughtful student of the problem the question naturally arises whether the formation of school clinics is the best method of dealing with the dental condition of the masses of children. The school clinic will only reach the children in the majority of cases after the sixth year. By this time irreparable damage has frequently been done to the child's denture, which could easily have been avoided by proper measures taken during the earlier years. To put the point in another way, the expenditure on dental treatment of 1000 children under the age of six years will give far more reaching results than a similar expenditure of time and money on 1000 children of the ages of say seven to nine years—the earlier the age at which the children are brought under observation the better. Remedial treatment, moreover, will not be of permanent benefit unless the individual knows the methods of prevention and will adopt them. If the teeth are not placed under proper environment by the adoption of prophylactic measures, caries will continue to appear. Preventive measures should be drummed into children from the very earliest age; indeed, many odontologists believe that if the simple rules of hygiene were inculcated from infancy, 90 per cent. of the caries seen at the present day would disappear. Advocates of school clinics suggest the teaching of oral cleanliness by the teachers and tooth-brush drill. Excellent as the instruction from such teachers may be, it will have little practical effect unless there is parental supervision. Preventive teaching to the child would be of far greater value if given by the parents, and the main reason why it is not given in the home is that the parents themselves are too often ignorant of the simple measures required. Again, tooth-brush drill is of little value when carried out during school hours; to be of value it must be carried out at the proper times, the most important of all being the last thing before going to rest.

If the public funds are to be utilised for dental treatment the money should be expended in such a way as to give the best results. To spend money on the teeth of the school children and to neglect the teeth of the infants is wasteful in the extreme, and education committees, where its funds are limited, would do far better for the community by concentrating its attention in the first place on its future scholars rather than its present scholars. The amount of money that will be earmarked for dental treatment is pretty sure to be insufficient to carry out the work as thoroughly as it should be done, whatever community may be in question; in London such insufficiency must be counted upon. The problem

therefore that the educational authorities have to face is how best to employ the funds available. In our opinion the problem should be approached in the following order: (1) the thorough teaching of prevention to the parents; (2) the remedial treatment of the infants; and (3) the remedial treatment of the school children. Instruction as to the prophylactic measures to be used is far and away more important than any amount of remedial treatment, and it has, too, this great advantage—that the measures to be adopted are simple in the extreme. This instruction on the care of the teeth should be systematically given in all the State schools to the parents and would-be parents, and the instructors should be properly qualified dental surgeons. An immense amount of good would be done, too, if the dental hospitals gave free popular lectures to the public. A well-organised crusade throughout the country on the importance of the teeth and the technique of their proper care would be followed in a generation by an immense improvement in the health of the nation, and, from the point of view of the combatant services, by an enormous decrease in the percentage of recruits rejected for defective teeth.

Fashion in Surgery.

WHAT the future of surgery has in store none can tell. There is, however, no little risk that in becoming accustomed as we are to a rapid progress in our ideas and methods we may from time to time mistake mere change for progress, the mere introduction of a new method for true advancement, a chance which is certainly increased by the fact that many procedures in surgery hold a place in our technique for a very brief period. When we look back on the last 50 years we can detect many cases in which a new process or a new operation has been devised and has been received by nearly, if not by all, surgeons as a great and sometimes as an epoch-marking event, and yet a few years later the novel method has become discredited and before long has dropped entirely out of use. When Sir JAMES SIMPSON introduced his method of arresting hæmorrhage by acupuncture it was thought by many, and certainly by himself, that he had devised a method which would utterly replace all other means of stopping bleeding. The size of the volume which he devoted to its description may surely be taken as some indication of the importance he attributed to his invention; but where is acupuncture now? Absolutely forgotten; many medical men of the present day would not be able to say what it is.

Coming to more recent times, we had some 13 or 14 years ago the publication of CALOT'S method of forcible reduction of angular curvature of the spine. The wonders of the new operation were proclaimed in nearly every medical periodical; pictures of the mode of carrying out the process became familiar to all readers of medical literature; the ease and safety with which the reduction was effected was dilated on; the completeness of the restoration to the normal state was demonstrated by numerous illustrations of the condition of patients before and after the marvellous operation. Where is CALOT'S method now? In the whole of this country or even in the world has the operation been performed on a single child within the last five years? Dangers undreamed of or unmentioned at the time soon made their appearance. A few sudden deaths occurred and the promised improvement in the power of walking never materialised. We acknowledge that many surgeons, even from the very first, pronounced CALOT'S forcible reduction as barbarous, unscientific, and useless; and we may perhaps mention that early in the propagation of the method we pointed out the lack of support from pathology which the method possessed. In even more recent times still we have had gastro-enterostomy put forward as a panacea for all the ills that the stomach is heir to, for pyloric stenosis, both functional and organic; for ulcer of the stomach and of the duodenum, whether involving the pylorus or not; for hæmatemesis arising from almost any cause; for dilatation of the stomach, both with and without pyloric stenosis; for malignant as well as for simple affections of the stomach; in fact, for so many conditions that the feeling naturally arose that Nature had decidedly erred in not providing the human frame with what may be called a normal gastro-enterostomy. Time, which tests all our inventions, has shown that this operation does not possess all the powers attributed to it, and at the present day probably the majority of surgeons will agree that gastro-enterostomy is seldom of permanent value unless there is definite obstruction at the pyloric opening. In most cases where no such obstruction exists the artificial orifice will soon close and the food resume its original route. It is true that in many conditions the cases were none the worse for the abnormal aperture, but that it benefited many of them is more than doubtful. We have no wish to decry the operation in suitable cases; it is of immense value in permitting the emptying of a stomach the natural outlet of which has become obstructed, and as a temporary measure it may afford relief to some other gastric and pyloric lesions, but it has fallen far from the high position it once occupied as the remedy of remedies for abnormal gastric conditions.

It is, perhaps, in relation to some of the methods of operating that fashion has the widest sway at the present time. The marvellous results of the Listerian practice when first made public to a wondering surgical world were so readily reproduced by any surgeon who chose to take the necessary care that it was not long before they came to be looked upon as almost commonplace, and when later it was found that similar results could be obtained by methods alike in principle though different in practice a tendency arose to lay stress on certain points and to regard as out of date the methods of LISTER himself. All who are well acquainted with the history of modern surgery look upon aseptic methods merely as a natural development of antiseptic surgery, not as opposed to it; and they will acknowledge that in most operations the results of antiseptic surgery cannot be surpassed. When in the summer of this year some of the members of the American Society of Surgery visited London they were surprised to find Sir WATSON CHEYNE still using strong solutions of carbolic acid in his wounds, and some of them, we believe, were inclined to regard the method they saw there employed as not representative of the best modern surgical practice. But it is by the results that surgical

methods must be judged, and we venture to think that the results of this method will compare with the most rigorous aseptic practice. Often the details of a method will be accorded an importance which is more than their due. We may take as an instance the question of the material of which ligatures should be composed. When LISTER first advocated the employment of catgut as a material for ligatures numerous writers pointed out the objections, both theoretical and practical, to the use of this substance, but time has seen a change, and many surgeons at the present time maintain that the only suitable material for a buried suture is catgut, and that silk should never be employed except for skin sutures. In this, as in so many other points, the surgeon is greater than the detail. It is certain that millions of silk sutures have been inserted in the deep tissues, and have not cut their way out, for if a suture does make its way to the surface it is probably always because it was septic. The attempt to find a ligature or suture perfect in every way has caused surgeons to employ many different substances; metallic sutures for a time received much support, though they are rarely seen now. Animal fibres of various kinds, such as kangaroo tendons and threads of the aorta of the ox, have been praised by some surgeons, and one surgeon claimed that perfection was to be found in fibres obtained from the ligamentum nuchæ of the narwhal. It is fortunate that the medical world has not fallen in with this latter recommendation, for it is to be feared that the supply would fall far short of the demand. The difficulty of rendering the hands of the surgeon aseptic led not long ago to the introduction of gloves, and in this country it is probable that the majority of surgeons employ rubber gloves in their operations, and in some hospitals that surgeon is considered to be out of date who does not employ them. Yet it is of interest to note that in many hospitals abroad, especially in Germany, there is a tendency to discard the rubber glove as needless at least, even if not actively harmful, because if the glove becomes frayed new dangers are introduced. Here, again, the surgeon is more important than his gloves. Perfect results have been and are being attained by some surgeons who, gloveless, trust to the thorough cleansing of their hands before and after operation; other surgeons obtain equally satisfactory results while wearing rubber gloves. It is possible of course for a surgeon, careless in his methods, to obtain unsatisfactory results, and whether he wears rubber gloves or not will make very little difference.

Every change is not necessarily a change for the better, and this is proved by the neglect, to which we began by drawing attention, that has fallen upon procedures once highly vaunted. By the most varied methods and the most diverse practices surgeons of the right spirit can claim results which they need not fear to compare with those of any other surgeon, for results depend much more on the surgeon himself than on the methods he happens to employ. He is the better surgeon who can so use the material with which he provides himself as to get the best results. To make success depend on the employment of a particular instrument or a special ligature is to misunderstand the problem which is set before the surgeon and to make a shibboleth of a minor point. In the future, as in the past, many innovations will be brought forward which cannot stand the test of time, but we shall be less likely to be led away by them if we examine the principle on which they are based, and if we recognise that on the right application of right principles successful surgery depends.

The Responsibility of Our Hospitals and Deaths under Anæsthetics.

THERE are many difficulties to be overcome before our hospitals escape from adverse criticism directed against their arrangements for anæsthetising patients. In the report of a recent inquest held by the City coroner upon a man who died while under the influence of ether in Guy's Hospital we find these difficulties only too well displayed. A condition of acute peritonitis following the rupture of an intestinal ulcer and associated with vomiting appears to present more than ordinarily grave aspects when an anæsthetic has to be given. That an operation was urgently required is shown by the house surgeon's remark in evidence that it gave the patient "a 1 per cent. chance." The death, which occurred before the operation could be commenced, was due to vomited material entering the air passages and causing suffocation. The report, which lies before us, does not tell us anything either concerning precautions such as the performance of preliminary lavage or of means for resuscitation such as measures which would be directed to the removal of foreign bodies from the trachea and bronchi; indeed, as the house surgeon who administered the anæsthetic intimated to the coroner that he was prepared to certify that the death was due to peritonitis, it seems possible that the true dangers which were present were not wholly appreciated.

It is not our intention, however, to dwell upon the details of this particular case, but to refer to the views which the coroner advanced in the course of the inquiry held in his court. Dr. F. J. WALDO'S wide experience lends additional weight to such pronouncements. The Departmental Committee appointed to inquire into the laws relating to coroners and the practice in coroners' courts recommended that "every death under an anæsthetic should be reported to the coroner, who, after inquiry, should determine whether it is desirable to hold an inquest or not." With the first part of this suggestion Dr. WALDO heartily agreed, since it was a well-known fact that only a small proportion of deaths under anæsthesia in private practice ever came to the notice of registrars or of coroners. With the latter part of the recommendation, however, he disagreed, since he did not think such a change in the law at all favourable to the public interest. He preferred the English open method of inquest by coroner and jury to the private inquiry as held by the procurator fiscal in Scotland into violent or unnatural deaths. Such secret investigations were, he thought, hardly favourable to a full statement of the facts with regard to so delicate a matter as that of fatal anæsthesia. He is further of opinion that "junior officers" at hospitals should not be left to administer anæsthetics in serious cases unless an expert is present, and that in all cases of death under, or due to, anæsthetics,

a necropsy should be made by an independent skilled pathologist. The City coroner pointed out that in hospitals to which a large staff of experts are attached fewer deaths had arisen since the number of expert anæsthetists there had been increased. Indeed, no one would attempt to gainsay the truth of the advantage to the patient if his case is submitted to the care of the most skilled and experienced. To sum up the difficult question of compulsory inquests. The evidence given before the Departmental Committee demonstrated that some persons whose views are worthy of attention do not hold coroners' courts and their findings as sacrosanct; indeed, they appear to regard them as mediæval in constitution and of little value in carrying out what is after all their primary function—viz., the investigation into the question whether the deceased came by his death through unnatural causes, causes provoked by himself or others, and whether the death was criminally produced. These critics admit that in spite of the constitution of such a court an experienced coroner, especially if he possesses scientific knowledge, may invest the inquiry with dignity and lead it along correct lines. The whole point is the personality of the coroner.

DR. WALDO'S suggestion that the resident staff at the hospital should not administer anæsthetics is not so simple. Experts, we are told, take years of making; they are not like poets, they must be made after birth; and if responsible practice in the production of anæsthesia is to be taken wholly from the juniors they will lose their chances of learning this most important branch of their profession during their hospital career. Incidentally, the experts themselves must under such conditions become extinct in the near future. The essence of learning how to be even a satisfactory anæsthetist is that the administrator shall feel personal responsibility in the case while *in statu pupillari*. In after practice the production of anæsthesia will be in most cases a necessary part of the day's work, and the hospital training should be adequate to prepare for this. There appears to be a growing fear of anæsthetics among our medical students, and some would have us believe that the dread of a *début* made in the coroner's court tends to aggravate this fear rather than to stimulate the student's enthusiasm for increased knowledge of the practice of anæsthesia. If this is so the dread engendered in the public mind by reading a garbled account of inquests offered for their perusal in the daily papers is reacting in a sinister manner upon medical training. If the present system is salutary, its drawbacks are probably remediable, and we may hope that the Departmental Committee's report may lead to this end. Hospitals are primarily for the amelioration of the sufferings of humanity, and their secondary use, the teaching of students, must take a subsidiary place. At the same time these uses coincide in some directions, and it remains for those who are responsible for the management of our great hospitals to evolve measures by which the one object may be achieved without undue interference with the other. The public is becoming more keenly alive to the importance of the subject of anæsthetics, though this may chiefly be shown by needless apprehensions, and we may anticipate that in future more thorough and systematic instruction will be given in our medical schools, and that there will be a more just appreciation of the value of efficiency in this department. Many hospitals have one or more residents whose duty it is to give anæsthetics in grave cases on occasions when the staff anæsthetists are not present, and were such posts established in all hospitals we believe fewer deaths would occur. The public mind would thus be reassured. When the production of anæsthesia is safeguarded by restrictive legislation, when the use of anæsthetising agents is taught systematically, and when all students are compelled to show practical and efficient knowledge of anæsthetisation before administering an anæsthetic on their own responsibility, many of the present dangers will disappear, and there is no doubt that the public will welcome such desirable changes.

Annotations.

"Ne quid nimis."

POOR-LAW BABIES.

AN interesting contribution to the literature dealing with the boarding out of pauper children is to be found in the *Nineteenth Century* for September in an article from the pen of Miss Janet Lane-Claypon, who gives an account of the system instituted in Berlin during the early years of the present century, and since brought to a high pitch of perfection, for boarding out infants thrown upon the hands of the public assistance authority of that city. We are all aware of the recommendations made by the Royal Commission on the Poor-laws for increased resort to boarding out, for its better supervision and organisation, and with the Minority's plan for dividing the responsibility for children above and below school age between the sanitary and educational authorities respectively. Public attention, however, with us has been directed recently more especially towards the care of the older children as distinguished from infants, although we have also seen discussed, not without some acerbity on both sides, the conclusions and criticisms of the Minority upon the high rate of mortality prevailing in workhouse nurseries. The early care of infants who commence their lives in the very unfavourable circumstances which bring them under the guardians' care presents undoubtedly many difficulties, the object proposed being the bringing up of the children so that they may reach maturity as sound-bodied men and women without imposing an unreasonable tax upon the ratepayers' pockets. Our friends in the capital of the German Empire belong to a practical and not an extravagant nation, to which they set an example of efficiency which is therefore worth considering. Their plan may be studied at length in the paper referred to, and it can be summarised as consisting in the *ne plus ultra* of medical care and nursing of the infant during a short period in a public institution or children's hospital, the Kinderasyl, followed by boarding out with foster-parents selected with scrupulous care, who rear it under the supervision of trained women inspectors and medical specialists. The infant has a clean bill of health before going to the foster-parents, and the supervision directed towards maintaining that condition achieves wonderful success. The Kinderasyl affords a centre of training for nurses and medical officers, which insures the efficiency of inspection in so marked a degree that it is found that the apparent advantages of boarding out children in the country do not

compensate for those due to the vigilance and advice of specially qualified officials not always obtainable away from the metropolis. Children falling ill when boarded out are brought back when desirable to the Kinderasyl or to the Waisenhaus, the latter being an institution which performs the same functions for children over one year of age as the Kinderasyl for those who are younger. If Miss Lane-Claypon is right in the opinion which she expresses that Hungary, Sweden, France, and Germany are all far ahead of us in dealing with Poor-law children, and even with those who are not Poor-law children, there is every reason why an attentive study of their methods should be made by all classes. We have said enough to show that the Berlin system contains much that should be of interest to medical men, and we commend it also to laymen interested in Poor-law work. We cannot, however, forget that the carrying out of any universal system of boarding out, accompanied by the necessary supervision and advice which alone can render its results satisfactory, must depend to a great extent upon the goodwill of that class in which the foster-parents must be found. We observe that groups of working men are being sent to Germany at the present time, apparently with a view to better qualifying them for the expression of opinions on the nation's fiscal policy. We hope that for other reasons also they may find social and economic conditions in Germany worthy of their attention. We do not suggest that they are experts in Poor-law administration or the management of infants, but their minds might be worth cultivating upon a subject directly affecting their own class. They might have something also to say as to the possibility of finding in London and in British centres of labour foster-parents of the class necessary. The well-organised social system of Germany and the characteristic submission of its people to discipline and official investigation, believed by many to be largely due to that country's military system and the training which this provides, probably render the provision of suitable homes for infants in need of them, as well as the carrying out of systematic inspection, easier operations than our own public assistance authorities would be likely to find them. In the United Kingdom experiments initiated in suitable districts and tactfully carried out might be followed by development and improvement, but we should be over-sanguine if we regarded success upon a large scale as a possibility of the near future.

QUACKERY: A PROPOSAL.

QUACKERY has been the bane, not only of the medical profession, but, which is of infinitely more importance, of the health and well-being of the people at large, probably ever since the dawn of medicine and certainly since historic times. Juvenal tells us how the fashionable Roman ladies sent for an Egyptian quack when they were ill, and to come down to later times the "Flos Medicinae," a Salernitan poem written, at any rate, before the fourteenth century, has the following complaint, which might have been penned to-day:—

> "Fingit se medicum quivis idiota, prophanus
> Judaeus, monachus, histrio, rasor, anus.
> Sicuti alchemista medicus fit aut saponista,
> Aut balneator falsarius aut oculista,
> Ilic dum lucra quaerit virtus in arte perit."

But quackery to-day has assumed a more rampant form than ever, and that principally owing to the spread of the ability to read and the existence of a press not over-careful what they put before the public either in their text or in their advertisements. Various remedies have been proposed from time to time, but nothing has as yet been done. We are led to these remarks by the receipt of a letter from Mr. H. Elliot-Blake urging upon us that it is not an anti-quackery society which is required so much as regulation and supervision of quackery. Mr. Elliot-Blake proposes that a public meeting should be called and a committee appointed to interview the Minister under whose department the matter would come. After this a Royal or Departmental Commission should be appointed. What Minister Mr. Elliot-Blake discreetly does not mention, while the fact that a Royal Commission has been promised escapes him. We see all the difficulties which he points out as sure to mark the foundation of an anti-quackery society, and we also consider that a public meeting might be of use if it were organised by some prominent citizens not belonging to the medical profession. But we have been recently told by a medical man, a Member of Parliament and warm supporter of the Government, that the medical profession is suspect in the House of Commons as being "out for fees," so that if any public meeting were organised under professional auspices the Government would look at it askance. Given the public meeting and its committee mainly of laymen, we would again suggest for consideration a remedy which we have upon many previous occasions put forward in these columns—namely, the licensing of all quacks of whatever shade. No one could say that this would be a legal recognition of quackery, for quackery is perfectly legal now. Neither could it be argued that the possession of a licence would imply a Government guarantee of the soundness of the treatment. Mr. Elliot-Blake, in referring to the press, says: "Another most important dependence of the quack-man and for the sale of his slop-medicaments rests on his free access to the paraphernalia of uncurbed advertising: that, to get any legitimate success, ought to be stopped." Mr. Elliot-Blake's strictures on the lay press would be more forcible if they had been made with discrimination and with recognition that certain editors and proprietors strive hard to grapple with the evil. However, we have pointed this out many times already. We believe that all movement for an inquiry into quackery and unqualified practice has reached an inchoate stage, and in the meantime if Mr. Elliot-Blake can organise his meeting nothing but good could come of it. For we are strongly of opinion that the more the public is made aware of the truth the less hold will gross quackery have upon them.

A NEW METHOD OF TESTING RENAL FUNCTION.

AMONG the numerous methods which have been introduced for the purpose of investigating the renal function and for comparing the efficiency of the two kidneys there are three which have become established as affording information of value in diagnosis. They are cryoscopy—i.e., the determination of the molecular concentration of the urine; the phloridzin test; and colour tests such as those with indigo-carmine and methylene blue. In an interesting paper recently contributed to the *Berliner Klinische Wochenschrift* Dr. Julius Wohlgemuth of Berlin describes a new method for which he claims certain advantages. The general principle of the three methods mentioned above is that the damaged kidney produces urine which is poorer in certain constituents, either normal or abnormal, than that excreted by the normal one. On the same principle it occurred to Dr. Wohlgemuth that ferments, such as the amylolytic or diastatic ferment normally present in urine, might show variations according to the functional activity of the kidneys. In support of this he found that when the kidneys were diseased the urine contained only traces of diastase. This was confirmed in animals by some observations carried out in cases of experimental nephritis at Dr. Wohlgemuth's suggestion by Dr. Goichi Hirata. The method originally adopted was to put into a series of ten test tubes small quantities of urine varying from 0·6

cubic centimetre in the first to 0·06 cubic centimetre in the last. The volume of fluid was then made up to about one cubic centimetre in each by means of physiological salt solution, and then 5 cubic centimetres of a 1 per cent. starch solution were added, prepared from Kahlbaum's "soluble starch." The test tubes were then kept in an incubator for 24 hours, when each was filled with tap-water up to a finger's breadth from the top. If the specimens from the two kidneys collected separately by catheterisation of the ureters were to be compared a similar set of tubes was prepared from both, and after incubation they were placed in proper order in series in the two stages of a special test-tube rack. To each tube one drop of a decinormal solution of iodine was added, and by this means the extent of the hydrolysis of the starch in each series was determined, and, as a result, the specimen containing the lesser quantity of diastase could be recognised, and this urine, therefore, was regarded as coming from the kidney whose functional efficiency was damaged. In order to avoid the 24 hours necessary for the completion of this test Dr. Wohlgemuth subsequently modified his technique so as to be able to carry it out effectively in half an hour. This modification consisted in using a solution of starch of 1 in 1000 strength instead of 1 per cent., and incubating in a water bath for half an hour at a temperature of from 38° to 40° C. The tubes were prepared as in the original method, but only 2 cubic centimetres of the weaker starch solution were added to each. After the half hour's incubation the tubes were cooled, their contents were diluted with tap water to within a finger's breadth of the top, and then tested with an iodine solution one fifth the strength of that used in the original method—i.e., a one-fiftieth normal instead of a decinormal solution. It was, however, usually necessary to add more than one drop of this solution. By the difference of the reaction in the two series the relative amounts of diastase excreted by the two kidneys can be estimated and their functional efficiency compared. Applying these methods to a considerable number of cases, both normal and pathological, and comparing the results with those obtained from the same urines by the cryoscopic, phloridizin, and indigo-carmine methods, Dr. Wohlgemuth obtained results so satisfactory that he regards this method of estimating the diastatic content of the urine as a valuable means of studying and comparing the efficiency of the two kidneys. He believes that it is at least as accurate as the cryoscopic method and superior to the other two. He also suggests that his observations tend to show that the method may be used, not only relatively, but also to determine the absolute efficiency of the kidneys, since he has found that under normal conditions the amount of diastase excreted varies within definite limits, and that in conditions of defective function the quantity falls below those limits. The special advantages claimed for this test are the short time necessary to carry it out—viz., only a little over half an hour—its simplicity, and the small amount of apparatus required, all that is necessary being test-tubes, a rack with two stages, two pipettes, a simple water bath, a thermometer, and the two reagents. Only a very small quantity of urine is necessary, as little as 2·5 cubic centimetres being sufficient, and it can be used for the cryoscopic method first if this is desired. Another important advantage is that no extraneous substance is introduced into the body as in the phloridzin and indigo-carmine tests, the latter sometimes causing pain on injection. The one disadvantage attaching to the diastase test is that the urine must be as far as possible free from blood; a few drops appear not to influence the reaction, but if much blood is present care must be taken in interpreting the results, especially if the urine containing the blood gives a higher value than the urine from the opposite kidney, which contains no blood, since in this case the kidney which has secreted the blood-stained urine is probably the defective one, in spite of the higher diastatic content of its urine. If, on the other hand, the blood-stained urine gives a lower diastatic value than that from the opposite kidney the result may be accepted as reliable. The determination of the relative functional efficiency of the two kidneys is often a matter of considerable moment in the diagnosis of renal disease, and especially in determining what treatment should be adopted. Dr. Wohlgemuth's method certainly appears to have some advantages, and if his conclusions are substantiated it promises to be a valuable addition to our means of diagnosis.

FLIES AS CARRIERS OF INFECTION.

AN American writer has said that flies originating in filth carry it wherever they go, and that going from their filthy breeding places to the habitations of man they carry to his food the germs of disease. This danger has been for some time past recognised in this country, though much vague assertion has been made regarding it. We therefore welcome the publication of investigations which have been conducted on strictly scientific principles. The publication to which we refer relates to a series of researches undertaken at the direction of the Local Government Board,[1] entitled "Further Reports on Flies as Carriers of Infection," being the third report issued upon the subject. In it Dr. G. S. Graham-Smith contributes an account of some extremely valuable and important observations on the ways in which artificially infected flies carry and distribute pathogenic and other bacteria. These researches throw much fresh light upon the question. Hitherto it was believed by many persons that the common means of conveyance of infection by flies was effected through the soiling of the animal's legs and feet, and that in crawling over food the fly left some of the material behind it upon the surface. But Dr. Graham-Smith's infection experiments show that non-spore-bearing bacteria do not usually survive more than a few hours on the fly's legs or wings. Nevertheless, such flies allowed to walk over sterile agar plates may cause infection for several days. This seems to be due to the fact that the flies frequently attempt to suck the surface of the plate, and in doing so infect it with the fluid regurgitated from the crop. When a fly tries to feed, for example, on sugar, dried milk or sputum, it first of all moistens the material with fluid from its proboscis and then sucks up the dissolved matter. Within the fly's crop non-spore-bearing bacteria often survive for several days, and they usually survive even longer in the intestines. The fæces deposited by such flies frequently contain the organisms in considerable numbers for two days and are generally infective for a much longer period. It is therefore not so much the crude material carried on the fly's feet that is the source of danger, but rather the infected "vomit" (the fluid regurgitated from the crop) and the fæces which contain the pathogenic organisms for some time after the fly has fed upon the specifically contaminated material. No evidence has been obtained that multiplication of the organisms takes place in the crop or intestine of the fly. Dr. Graham-Smith's infection experiments were made with a variety of pathogenic organisms, including B. typhosus, B. enteritidis, B. tuberculosis, B. diphtheriæ, B. anthracis, B. prodigiosus, and V. choleræ. He expresses the opinion that as his infection of the flies was produced in most cases by emulsions of pure cultures, it is improbable that under natural conditions flies would often have the opportunity of

[1] Local Government Board Reports on Public Health and Medical Subjects (New Series, No. 40), H.M. Stationery Office. Price 9d.

feeding on materials which contain pathogenic organisms practically in pure culture. It would, he adds, be premature to conclude that these experiments and observations described in the report do more than indicate that under exceptionally favourable conditions certain bacteria can be recovered from the contents of the alimentary canal and fæcal deposits of infected flies for some days after infection, and that these flies are capable for several days of infecting certain materials on which they may feed. The experiments with tubercular sputum and anthracic blood alone afford evidence as to the duration of life, in the contents of the alimentary canal, of pathogenic bacteria taken up under natural conditions. After quoting a number of instances recorded by other observers, at home and abroad, in which flies have been shown to have become grossly infected under natural conditions, it is pointed out that even these observations only prove that cultures of pathogenic organisms may occasionally be obtained from naturally infected flies; they do not afford conclusive evidence that such flies are a frequent source of disease in man by infecting his food. We are glad to learn that Dr. Graham-Smith hopes to continue these valuable investigations with naturally infected materials, not only with musca domestica, but with other non-biting flies. Appended to Dr. Graham-Smith's report is a summary of literature relating to the bionomics of the parasitic fungus of flies (Empusa muscæ) by Dr. J. M. Bernstein; and also a note by Dr. S. M. Copeman as to the work in hand, but not yet published, and as to proposed further work in reference to flies as carriers of infection.

THE CASE OF SURGEON-MAJOR FARMAR BRINGHURST.

WE have been favoured with a statement from Surgeon-Major Farmar Bringhurst, a retired member of the Army Medical Staff, who was recently indicted at the Guildford Assizes upon the grave charge of manslaughter based upon allegations of neglect upon his part, and arising out of the death of his wife at Egham. The grand jury, before whom the indictment was laid, declined to find a true bill upon the evidence adduced by the prosecution, and a verdict of "Not guilty" was formally returned by the direction of the Lord Chief Justice upon the coroner's inquisition, with the result that Surgeon-Major Farmar Bringhurst was discharged without having the opportunity to give evidence in his own behalf and to corroborate it by that of other medical men. This he was prepared to do, the gist of the testimony at his disposal being that the treatment which he applied upon his own responsibility, and particularly the use of morphia, were proper in view of the symptoms evinced by Mrs. Farmar Bringhurst. He was, moreover, desirous of establishing on oath the fact that it was through yielding to his wife's urgent wish that he abstained from obtaining the services of a trained nurse, undertaking himself the duties which would have been assigned to her and performing them devotedly to the end. The difficult circumstances in which the husband is placed in a case in which his wife is the patient, and in which alcoholism and the drug habit have induced her condition or contributed to render it almost hopeless, will be borne in mind. We have referred to the accused as not having had the opportunity of tendering evidence owing to the case not coming to trial because, although we are aware that, strictly speaking, he might have done so when before the magistrates, we realise how seldom counsel permits his client to go into the witness-box at this early stage of the proceedings, if committal is likely to take place in any event, and how impossible it is, owing to the expense, for a person of moderate means to call witnesses before the coroner, before the magistrates, and yet a third time at the assizes. It is to be observed, therefore, that although the "throwing out" of a bill of indictment by a grand jury is often treated as an emphatic declaration of a prisoner's innocence, and although it spares him the painful ordeal of trial by a petty jury, it may operate as a hardship. The accused person may welcome the grand jury's opinion that there is not a sufficient *primâ facie* case against him to justify his being put upon his trial, but at the same time may feel aggrieved that as the accusation has been publicly brought, has resulted in his being committed, and has been kept hanging over his head until the assizes, he has not been allowed to do his utmost to establish his complete innocence. Surgeon-Major Bringhurst is entitled to every sympathy in his regret that this opportunity should not have been afforded to him, and we are glad to record that he was willing and ready to make the fullest use of it.

THE TREATMENT OF FRACTURES OF THE BASE OF THE SKULL BY REPEATED LUMBAR PUNCTURE.

A FRACTURE of the base of the cranium is universally regarded as a very serious condition, one in which the prognosis must of necessity be guarded. According to Chudovszky the mortality in fractures of the cranial vault is 45·3 per cent. and in fractures of the base 64·2 per cent. More recent figures furnished by Maclaren are 20·2 per cent. for the former lesion, and 60 per cent. for the latter. It is true that within the last few years surgeons have advocated active interference in such cases to a greater extent: Cushing of Baltimore, for instance, recommends trephining subtemporally, and subarachnoid draining has also been employed. In the hands of skilful surgeons no doubt such procedures are justified, and in some published cases have been attended with remarkable success. Unfortunately, however, the condition of the patient is frequently so desperate that surgical measures only add to the shock from which he is suffering. A much more simple method, preferable to the pure passivity of medical treatment on the one hand and to the severity of surgical treatment on the other, consists in the reduction of the hæmorrhagic effusion by repeated lumbar puncture. Both in England and abroad cures by this means have been reported. Of course, in the case of cranial fractures the interpretation of statistics is a delicate manner, for among the "cures" it is difficult to exclude the possibility of spontaneous recovery whatever be the therapeutic measures adopted. It can scarcely be doubted, however, that the hæmorrhage accompanying the fracture, both from its volume and from the chemical phenomena associated with its absorption, constitutes the chief danger for the patient, and it is precisely this danger which is minimised by recourse to lumbar puncture. In *La Presse Médicale* for August 10th Dr. Apostolos G. Apostolides, physician to the Ottoman civil hospital in Smyrna, has published the details of two cases of fracture of the cranial base in each of which a complete cure was effected, the credit for which seems to be due to repeated lumbar puncture. The first of these concerned a young man, aged 22 years, who fell a distance of about 36 feet on to his head, and was picked up unconscious, bleeding freely though slowly from the nose, and presenting all the features of fracture of the base. His condition remained so grave that lumbar puncture was suggested more as a palliative than as a remedial measure. Forty cubic centimetres of cherry red sanguineous fluid were withdrawn under considerable pressure, the result being an immediate improvement in the patient's condition. During the next few days the procedure was repeated three times, the cerebro-spinal fluid being perfectly clear on the last occasion. The patient made an uninterrupted recovery. The other case was somewhat similar, and the success was equally striking. Whatever be

the verdict of the future, cases such as these are sufficiently encouraging to warrant recourse to lumbar puncture instead of the adoption of a waiting policy merely, thus allowing time for the development of infection of the meninges. Hæmorrhagic effusions are excellent media for bacterial germination.

FAMILIAL HYPERTROPHIC NEURITIS.

IN *La Semaine Médicale* Dr. Boveri of Pavia has described a comparatively rare disease to which the term "progressive hypertrophic interstitial neuritis" has been applied. In 1889 Gombault and Mallet published an account of a curious case, under the title "A Case of Tabes dating from Childhood," concerning a man aged 58 years who presented what were considered to be characteristic symptoms of tabes, but the anomalous feature was that the disease commenced almost in infancy and was associated with muscular wasting of the Aran-Duchenne type. In 1893 Déjerine and Sottas described the cases of a brother and sister who showed the classical symptoms of tabes in the shape of myosis, Argyll-Robertson pupil, ataxia, lightning pains, marked disturbance of sensibility, and loss of deep reflexes, to which, moreover, were added nystagmus, scoliosis, and gross amyotrophy. The result of a post-mortem examination in one of these cases was quite unexpected: the peripheral nerves were found to be greatly thickened, as were the spinal roots, especially those of the cauda equina. Evidently a new morbid entity had been discovered. Clinically, there appeared to be an amalgam of tabes and muscular atrophy, the underlying pathological stratum of which was hypertrophic interstitial neuritis. In 1908 Professor Pierre Marie described a family of six, no fewer than four of whom were afflicted with hypertrophic neuritis, but in a special form. The symptoms of tabes were not present to the same extent; the muscular atrophy was practically confined to the lower extremities; intentional tremor was noted, and a staccato articulation not unlike what is found in disseminated sclerosis. Otherwise, the clinical symptoms and signs were the same—scoliosis, wasting of the legs, with the "tabetic foot" well marked (a combination of pes equinovarus and pes cavus), absent deep reflexes, loss of sensibility, and in particular palpable enlargement of the superficial branches of peripheral nerves. That these cases may be more common than is usually supposed is to be inferred from the fact that Dr. Boveri mentions another which had been diagnosed as one of Friedreich's ataxia until the discovery that the peripheral nerves were greatly thickened revealed the true nature of the condition. From both the clinical and the pathological aspect the disease is remarkable. Hypertrophic neuritis is a definitely familial disease that may occur in either of two types (the Déjerine and the Marie variety). The features common to both are loss of deep reflexes, gross defect of sensibility, amyotrophy of the distal type, scoliosis, club-foot, and the underlying pathological condition. In the Déjerine type, however, further symptoms analogous to those of tabes are present—viz., lightning pains, myosis, Argyll-Robertson pupil, true ataxia, also nystagmus and fibrillary contractions. All these are absent in the Marie type, but there are found, on the other hand, intention tremor, dysarthria, and a muscular atrophy which is limited to the feet and legs, not generalised as in the first form. Pathologically the peripheral nerves are enormously thickened—in one case the sciatic nerve, 5 centimetres below its point of exit from the pelvis, was 19 millimetres in transverse diameter. The increase is due almost entirely to great overgrowth of the sheath of Schwann; there is less actual interstitial change, while the axis-cylinders themselves seem to be more slender than usual and the myelin sheath also is reduced. Degeneration in the posterior columns of the spinal cord, and to a less extent in the lateral columns, is described by Dr. Boveri.

PRECOCIOUS PARENTAGE.

OUR correspondent in China writes as follows: "The enclosed photograph is of a young couple whose precocious assumption of parentage has created some stir even among the Chinese. The characters round the photograph state that the mother is 8 years and the father 9 years old, but as a child is always reckoned in China as 1 year old at its birth this makes the parents each a year younger. Their names and village are given and the notice also states that in the first month of this year a child was born to them. In the photograph the mother can be seen suckling her child which measured one foot long at birth. The Governor

of Shansi, the province in which the birth took place, sent official particulars to Peking, but in order to make more sure I made further inquiries through a Chinese friend who lives in the neighbouring city of Tai-yuan-fu. He reports that the facts are as stated and that the boy is the father of the child, but I have been unable to obtain particulars of the development of his or her generative organs, whether the mother had previously menstruated, &c. In Taylor's 'Medical Jurisprudence' a case is mentioned of a mother 9 years old, but there is no record of so juvenile a father."

CHRONIC ECZEMA FOLLOWED BY FATAL GANGRENE.

IN the *British Journal of Dermatology* for July Dr. G. H. Lancashire has reported a very rare sequel of eczema—gangrene of the skin. A married woman, aged 54 years, was admitted into the Manchester and Salford Hospital for Skin Diseases in December, 1909, suffering from acute weeping eczema of the cruro-genital regions extending over the hypogastrium and inner and upper parts of the thighs. On the face and neck there was a subacute seborrhœic dermatitis. A chronic aural discharge was present. The patient was well nourished and did not appear to have lost strength. She had been treated for the eczema for over a year, during which there had been improvement and exacerbations. A few days after admission the eczema had disappeared from the upper part of the body, but in the cruro-genital region it remained obstinate. On Dec. 31st there

were nausea and vomiting and acute diarrhœa. The temperature was 99·4° F. The cruro-genital eczema was very acute; the surface was bathed in a sero-purulent discharge of offensive odour, which antiseptic dressings did little to mitigate. On the following day superficial ulcers of the size of a lentil appeared over the sacrum, and the evening temperature began to rise to 101° or 102°. On Jan. 4th, 1910, the whole of the raw surface on the abdomen and thighs was deep red and covered with punched-out ulcers of the size of a lentil. Each was filled with yellowish pus. After a day or two adjoining ulcers began to coalesce, forming little troughs. Later their bases dried up into blackish scabs, some of which towards the end were thrown off and replaced by granulation tissue. The general condition became grave; a typical septicæmic temperature developed, and the pulse became more and more rapid and feeble. The border of the diseased skin became sharply defined by a black ribbon-like scab of dry gangrene, outside of which the skin was congested. Scattered ulcers appeared on the healthy skin adjoining the diseased area and rapidly became gangrenous and scabbed. The temperature became subnormal and the patient died comatose on the 14th. Treatment consisted in trying by soothing antiseptic lotions (compound lead lotion, with cresol and carbolised linimentum calcis) to control the inflammation and to diminish the sepsis. Dressings were constantly applied. Microscopic examination by Dr. Arthur Sellers showed extensive gangrene of skin, involving in many places the whole thickness and extending for a few millimetres into the subcutaneous tissue. Cocci and bacilli were present in enormous numbers. The staphylococcus pyogenes aureus and the bacillus pyocyaneus were cultivated from the skin, spleen, liver, and kidney. Death was apparently due to septicæmia from the mixed infection. It was thought that the bacillus pyocyaneus was the chief organism, and that the otitis was a possible source of infection. In many respects the clinical features corresponded to those described by the late Dr. Radcliffe Crocker in "dermatitis gangrænosa infantum," in which several investigators consider the bacillus pyocyaneus the infecting germ.

THE PHYSIQUE OF THE PHTHISICAL.

UNDER the above heading we publish this week a contribution by Mr. H. de C. Woodcock, honorary physician to the Tuberculosis Hospital, Leeds. He draws attention to certain points in the physique of patients suffering from pulmonary tuberculosis, some of which have not received much attention in text-books dealing with this disease. He appends tables giving the results of a large number of cases which he has investigated. Although his results and conclusions are interesting, similar observations from other physicians will be necessary before they can be accepted as of actual practical utility. Mr. Woodcock lays stress on the peculiar appearance of the soft palate which is common in marked cases of pulmonary tuberculosis. The palate is of a "pearly bluish-white tint, and is covered with a somewhat mucoid moisture." He regards it of some value in prognosis, considering it of sinister import. We should hesitate to confirm this opinion, and should be inclined to place it in the same category as the red line on the gums, which was at one time much commented upon by writers on pulmonary tuberculosis, but which has been shown to occur in other cachectic states. The "hand ratio" to which he refers is a matter which would require much trouble to work out, and its actual value in practical work is a matter of doubt. The hyperextension of the fingers on the metacarpals or of the terminal on the penultimate phalanx is not only a sign found in the case of patients in an advanced stage of pulmonary tuberculosis, but is also seen in other chronic affections, especially when emaciation is marked. Clubbing of the fingers is frequently found in tuberculous subjects, and has, as Mr. Woodcock remarks, lost some of the value formerly attached to it. The remarks on the occurrence of pulmonary tuberculosis in soldiers, sailors, and others "who might be classed under the general name of 'wanderers,'" are interesting. The incidence of the disease in individuals of the class to which he refers is gradually attracting attention. In the case of sailors, the confined spaces in which they sleep and feed are doubtless unhealthy and counteract the beneficial effects of the sea air and sunshine to which they are submitted. Some of the signs inquired into by Mr. Woodcock are certainly worthy of further investigation.

THE AFTER-EFFECTS OF HEAD INJURIES.

IT is not sufficiently recognised that apparently slight injuries of the head from which recovery soon takes place may later be followed by grave and permanent mental impairment. In the *Polyclinic* for June Mr. C. T. Dent has published an important article on the After-effects of Head Injuries. As chief surgeon of the Metropolitan Police he has unusual opportunities for following the after-history of a considerable number of cases of head injury. He finds that mental disorder so grave as to require certification (traumatic insanity) is not a common sequel, but mental impairment sufficient to diminish the patient's capacity for work is not uncommon. He particularly calls attention to one factor in determining the incidence, severity, and persistence of the results to which sufficient attention has not been paid—responsibility. The moment a person is beset by the consciousness of responsibility in his work his capacity is lowered. This is well shown in policemen to whose work in proportion to their position and education a heavy responsibility attaches. The following are some typical examples of the serious after-effects of apparently slight head injuries to them. A strong healthy constable, who was on duty, was picked up semi-conscious on the roadway. He recovered after 10 minutes and stated that he had jumped off a tramcar in motion. There was no doubt that the accident had happened and that he had struck his head in falling. The injury appeared trivial and he seemed to recover so completely that he returned to duty in five days. Three days later his turn for leave came and he went to the country. While there he behaved so strangely that a medical man was summoned and he was sent back to London. He had no recollection whatever of going to the country or of what took place while he was there. There was no suspicion of alcoholism. He wrote several incoherent letters characterised by marked iteration. In a few days he seemed to have recovered. He was invalided from the force, but later he was apparently well and desirous of rejoining. In another case a constable of 17 years' service, who had been injured on duty on nine occasions, was kicked on the side of the head and neck and soon became partly unconscious. He improved and returned to duty in three months, but in a few days he broke down again. He progressively deteriorated, and about a year after the injury there was decided melancholia. Six months later the melancholia was less, but he was very irritable and inclined to be suicidal, and was rapidly drifting towards insanity. In a third case a constable in a struggle with a drunken prisoner was thrown and fell heavily on the back of his head. He was picked up unconscious, but after 20 minutes he partly recovered consciousness. He soon recovered from his injuries and after 13 days resumed

duty. A year later he had delusions in reference to a murder that had taken place, and persuaded another constable to arrest a man who was entirely innocent. After a few days he recovered from this attack and had no recollection of the episode. Two other cases are related. In all the cases malingering could be excluded; the men had everything to gain by continuing the work to which they had returned. The cases had the following features in common: 1. The head injury never appeared grave. 2. Recovery rapidly took place. 3. After intervals varying from five days to ten years the men resumed duty. 4. All showed subsequently mental impairment of a similar nature. 5. In none was it sufficiently grave to be certified as insanity. 6. All began to improve again as soon as they ceased work for the second time, but not so rapidly or so thoroughly as before. 7. The mental symptoms developed after an interval following recovery from the accident, and their onset was precipitated by the resumption of anxious and responsible duties. The factor of responsibility largely determines not only insanity, when it occurs, but also any milder mental effects. In these cases the sense of responsibility which formerly sat lightly on the men's minds seemed to weigh them down with constantly increasing heaviness. If the sense of responsibility attaching to the occupation is slight, recovery may be favoured by gradual resumption of work.

THE BONE CALLED "LUZ."

THE most careful searching in the last published and amplest treatise on osteology will not result in the discovery of the bone called "Luz." It will be necessary to go to the Frankfort edition of the "Theatrum Anatomicum" of Caspar Bauhinus (1621) for a description. "It is stated by Hebrew writers to be a bone which cannot be destroyed by fire, water, or any other element, nor be broken or bruised by any force. Its site is in the spine from the eighteenth vertebra to the femur. We read that the Emperor Hadrian once asked Rabbi Joshua, the son of Channi, how God would resurrect man in the world to come. He made answer: 'From the bone Luz in the spinal column.' When Hadrian asked him how he came by this knowledge and how he could prove it, the Rabbi Joshua produced the bone so that the Emperor could see it. When placed in water it could not be softened; it was not destroyed by fire, nor could it be ground by any weight; when placed on an anvil and struck with a hammer the anvil was broken in sunder, but the bone remained intact." Hieronymus Magius represents that, according to the Talmudists, the real bone is near the base of the skull, whether it be in the base itself or in the spine. Vesalius writes that this ossicle is called *Albadaran* by the Arabs, resembling a chick-pea in size and shape, and Cornelius Agrippa describes it as *magnitudine ciceris mundati* (the size of a shelled pea). Different anatomists have held it variously to be the sacrum, the coccyx, the twelfth dorsal vertebra, one of the Wormian bones in the skull, and one of the sesamoids of the great toe. To have confounded it with the sacrum is natural enough on account of the name given to this bone by the ancients *ἱερὸν ὀστέον*, about which, however, there has been much controversy, and the coccyx is that bone called *al ajb* by the Arabs, which Mohammed stated to be incorruptible and to serve as a basis for the future edifice at the resurrection. The twelfth dorsa vertebra, as the turning point and centre of the spine, the Wormian bones on account of the mystic properties which were ascribed to them, and the sesamoid bones of the great toe on account of their shape and hardness, have all claims to be regarded as the "Luz."

THE SYMPTOMS OF RUPTURED ABDOMINAL HYDATID.

WE publish in this week's issue of THE LANCET an interesting note by Dr. J. E. Barling and Professor D. A. Welsh of Sydney describing a group of symptoms occurring with some frequency according to their experience in hydatid disease complicated by rupture or leakage into the peritoneal cavity. The symptoms referred to are eosinophilia, peritonitis with effusion, and urticaria. Their observations were made on six cases, five being hydatid of the liver and one of the spleen. Eosinophilia is well known to occur as a reaction to many forms of metazoan parasites, and has frequently been described in hydatid disease. Dr. Barling and Professor Welsh have found that in uncomplicated hydatid disease in man it is by no means invariably present, as many as 25 per cent. showing no eosinophilia, or only a very slight degree. When rupture into the peritoneum occurs, however, they find that it is very marked. In one of their cases the eosinophiles constituted 54 per cent. of the leucocyte count. The second sign of rupture they describe is the marked peritoneal effusion which results even when only a small escape of the hydatid fluid occurs. The irritation set up appears to be very marked and considerable effusion develops as a result. The urticaria resulting from rupture of a hydatid cyst has long been known, and is well recognised as a sign of rupture or escape of fluid. This sign occurred in four out of the six cases observed by Dr. Barling and Professor Welsh. This symptom complex is of considerable clinical interest and diagnostic value, and in any case where hydatid disease is suspected the occurrence of eosinophilia in association with a peritoneal effusion may afford valuable assistance towards arriving at a diagnosis. It is also of pathological interest to notice that the results of rupture into the peritoneum appear to produce a local inflammatory reaction, a more marked leucocytic reaction, and in some cases a general toxic action as shown by the urticarial rash. Some years ago Brieger separated a toxic substance from hydatid fluid to which possibly the urticaria at least may be attributable. According to Viron this substance is allied to the toxalbumins.

Mr. Peyton T. B. Beale, senior surgeon to the Great Northern Central Hospital, surgeon to King's College Hospital, and for the last three years Dean of the Medical School, has resigned all his London appointments and entered practice at Hythe. For family reasons it had become necessary that Mr. Beale should live in more favourable climatic conditions than London can supply, and his numerous friends will join us in wishing him well in his new career.

AMONG the recent appointments which Queen Alexandra has made in her Household are the following: Sir Francis Henry Laking, Bart., G.C.V.O., K.C.B., Physician-in-Ordinary and Surgeon Apothecary to the Household; Sir Frederick Treves, Bart., G.C.V.O., C.B., Surgeon-in-Ordinary; Sir Alan Reeve Manby, M.V.O., Physician Extra-Ordinary and Surgeon Apothecary at Sandringham; and Mr. Milsom Rees, Laryngologist.

THE next meeting of the North-East London Clinical Society will be held at the Prince of Wales's Hospital, Tottenham, on Thursday, Oct. 13th, at 4.15 P.M., when the opening address of the session will be given by Dr. Frederick Taylor on the Diagnosis of Prolonged Pyrexia.

THE opening lecture of the winter session of the West London Post-graduate College will be delivered by Dr.

Donald Hood, C.V.O., on Monday, Oct. 10th, at 5 P.M., his subject being "Specialism in Medicine."

Field-Marshal Viscount Kitchener of Khartoum will distribute the prizes at the opening of the seventy-sixth winter session of the Middlesex Hospital Medical School on Monday next, Oct. 3rd, at 3 P.M.

THE introductory lecture at the Royal Veterinary College will be delivered on Monday afternoon, Oct. 3rd, at 3 P.M., by Professor H. W. Marett Tims.

THE OWNERSHIP OF MEDICAL PRESCRIPTIONS.

BY H. WIPPELL GADD,
OF THE MIDDLE TEMPLE, BARRISTER-AT-LAW.

A MEDICAL prescription may be defined as the written opinion of a physician, which specifies the particular remedies which are required by the patient who consults him. It is written as the result of a diagnosis of the patient's condition, and its purpose is limited in time as well as in person. It is usually written in Latin and expressed in technical terms, so that it does not necessarily convey any information to the patient, but is rather a recipe which he can take to any compounder of medicine, to whom he chooses to entrust it, for conversion into concrete form. In the best interests of the patient, the use of the prescription should be limited, as the very efficiency which it may possess in the morbid condition of the person for whom it was written may render it noxious or even toxic to the same person when in a state of health, and still more so to other persons of different age, sex, or habits of life. Such considerations which are patent to the physician who writes the prescription are not always fully appreciated by the relatively ignorant person for whom it is written; and the former may well desire to know the measure of control, if any, which he can retain over the document after it has left his hands.

The relation between physician and patient is one of contract, expressed or implied, the consideration being the fee paid, and it would seem that, in the absence of conditions to the contrary, on completion of the contract the prescription becomes the absolute property of the person who has paid the fee. In other relations, when the expert opinion of a professional man is given for the consideration of a fee, the property in any documents prepared in accordance with, or as an expression of, such opinion, vests in the person who has paid the consideration.

Thus, a client for whom a solicitor prepares certain documents is entitled to the ownership, not only of such documents, but also of all drafts and papers connected therewith (*vide Ex parte* Horsfall (1) 1827, 7 B. & C. 528).

The property is not always, however, absolutely unqualified. Thus, an architect retains the copyright, as drawings, in plans which he may have prepared to the order of a capitalist, although the ownership of the plans vests in him who has paid for them (comp. Gibbon v. Pease, 1905, 1 K. B. 810).

Sometimes the reverse holds good, the copyright vesting in the one who pays, and the ownership in him who works. Thus, a photographer has property in the negative which he has prepared in order to print portraits of a sitter, but the copyright in such portraits vests in the sitter, and the owner of the negative may not produce copies for sale or exhibition without his consent (*vide* Pollard Photographic Co., 1888, 40 Ch.D. 345).

Again, it is the practice of analytical chemists when handing reports of investigations, made for clients in return for a fee, to such clients to make it a condition that the report or certificate shall not be published or advertised without the consent of the analyst. This custom was upheld in an unreported case (Clark *v.* Dibdin and Thudicum), which was heard at the Westminster county court on May 1st, 1901. Here an engineer brought an action against a firm of analysts and claimed damages "for deteriorating the value of a written report by writing upon it." The defendants had reported on a gas burner and the report was subsequently returned to them for alteration. The defendants returned the report to the plaintiff with the words "not for publication" written across the face of it. The plaintiff contended that this made the report valueless to him, and stated that he considered he possessed a right to use the report in any way he thought fit. For the defendants it was contended that such reports were made entirely for the information of the person applying for them, and not for the purpose of publication or advertisement. Further, that they had a right and power to prevent any infringement of their right in any printed or written unpublished document. Evidence was called to show that it was the universal and recognised practice of the profession of analytical and consulting chemistry to treat such reports as not for publication or advertisement without a special agreement to that effect. The judge (Lumley Smith, K.C.) held that the defendants had established their contention that such a report was not for publication in the general sense, and that the plaintiff could not make use of it in the way he intended. The defendants had, however, exceeded their rights by writing across the report after the first delivery, when it became the property of the plaintiff. They would have been justified in returning it with a letter stating that the report was not for publication or in having written the words across the report before it was originally issued. They had technically exceeded their rights, but there was no damage. For the technical trespass the judge awarded contemptuous damages.

But in the case of prescriptions, the danger is not that of publication. Publication, in the technical sense, there must necessarily be in the handing of the prescription to a pharmacist for compounding. Moreover, if the prescription specifies a scheduled poison, the pharmacist is under a legal obligation to make a copy of it in a book kept for that purpose (*vide* 31 & 32 Vict. Cap. 121, Sec. XVII.). But to publish, in the general meaning of the word, a prescription as the writer's specific for a particular disease, or to put upon the market a preparation compounded in accordance with its directions, with the name of the author attached, would so damage the prescriber's professional standing and reputation that he would doubtless be able to obtain an injunction restraining the owner of the prescription from so using it. The difficulty lies rather in preventing the prescription being dispensed too frequently, either for the person for whom it was originally written, or for anyone else who may obtain possession of it. Conditions might, of course, be made by the physician with his patient at the time of consultation, specifying the maximum number of times the prescription should be compounded, or the date after which it should cease to be used, and such conditions might be endorsed upon the face of the prescription, but it is difficult to see how they could be enforced as between physician and patient.

The most feasible solution of the problem would appear to be the treatment of the question as one of etiquette between physician and pharmacist. Pharmacists are accustomed, and are indeed called upon, to exercise discretion as to whom they shall sell potent drugs, and would respect and faithfully observe any directions which might be addressed to them on the face of a prescription. If in rare instances such directions were habitually ignored by any unscrupulous practitioner, recourse should be had not to process of law but to the disciplinary powers possessed by the Pharmaceutical Society of removing from its membership any member who has been guilty of any act or conduct which is contrary to, or subversive of, the interests of the Society.

BODY METABOLISM IN CANCER.[1]

CONSIDERATION of the curves of cancer mortality in the human subject, whether male or female, discloses the interesting and important fact that cancer is not, as is usually thought to be the case, a disease of old age, however much it may be related to senescence of certain of the body tissues As a matter of fact, the disease is of extreme rarity in the later years of life, especially in the female sex. Thus the characteristic feature of the age incidence of cancer, as pointed out by Roger Williams and others, and as demonstrated by the returns of the Registrar-General, is not its continued increase with advance of years, but rather its

[1] Report of a committee of the British Association, consisting of Professor C. S. Sherrington (chairman) and Dr. S. M. Copeman (secretary).

disproportionate augmentation in the post-meridian periods of life—i.e., between the ages of 45 and 65 years—liability to the malady waxing as the reproductive activities wane. The facts, indeed, clearly show that cancer is *not* a disease of senility merely, which *per se* plays no part in its development.

In the animal world the age incidence of cancer is evidently governed by a similar law, as has been demonstrated by Stricker for horses and dogs, and by Bashford and Murray for mice, all these observers being in agreement as to the rarity of malignant tumours in early life and their relative frequency in later life, antecedent, however, to onset of old age.

In the light of these facts it would seem not improbable that the onset of malignant disease, whether in man or the lower animals, may have intimate relationship with diminished or perverted functioning of the reproductive organs, which, under normal circumstances, may be regarded as exerting—possibly by virtue of their so-called "internal secretions"—some restraining and coördinating influence on the growth of the somatic tissue elements.

Evidence of the existence of such a controlling influence is found in the fact, on which there is now general agreement among those engaged in the experimental investigation of cancer, that whereas transplantation of "spontaneous" cancer in the mouse to normal individuals is apt to prove successful in but few instances when full-grown animals are employed for experimental purposes, complete insertion success has not infrequently proved possible of accomplishment when mice of not more than six or seven weeks old are used. In view of the further fact that fanciers are agreed that the mouse is incapable of reproduction before the age of three months, while six months is generally stated to be the earliest age at which these animals should be mated in order to ensure healthy offspring, it would appear that the greatest measure of success in experimental transplantation of cancer in this animal is obtainable only during the period of life antecedent to full or even commencing activity of the reproductive functions. On the other hand, implantation of cancer material from one mouse to another is *least* likely to be attended by success when the recipient is of an age at which these functions have attained the stage of full activity.

For these and other reasons it appeared desirable to investigate the question as to whether any of the products of the reproductive glands—presumably given off, under normal circumstances, in the form of an internal secretion—can be shown experimentally to influence, in one or another direction, the development of cancer as witnessed when this disease is experimentally produced in the mouse. For the prosecution of this investigation facilities have been most kindly afforded by the Executive Committee and the Director (Dr. Bashford) of the Imperial Cancer Research Fund.

Although at the present time but little doubt exists as to the production of an internal secretion by the testes and ovaries, practically nothing is known of its nature and composition. It has, however, been suggested that its main constituent is in all probability derived from metabolism of nucleo-proteids which are present to so considerable an extent in the tissues of the reproductive glands. Professor von Poehl, of St. Petersburg, and others have, indeed, claimed that spermin, a crystallisable substance which has been isolated from the testes, prostate, ovaries, and in less amount from certain other organs and tissues, constitutes the essential principle in question. For the purposes of the present investigation, therefore, it appeared desirable, in the first instance, to make use of this substance (of which Dr. von Poehl, the successor of the late Professor von Poehl, kindly provided supplies), employing, in addition, freshly prepared emulsions of mouse testes, extracts of dried and powdered testes freed from nucleo-proteid, boiled watery extracts of the testicle of various animals, and a solution of nucleinic acid of orchitic origin. In every instance the action of all these various substances was tested on the mouse by hypodermic injection, while fresh emulsion of testes and solutions of nucleinic acid were also administered internally by a method of experimental feeding devised for the purpose.

For each series of experiments a number of mice were employed which had been inoculated with cancer material, by a member of the staff of the Imperial Cancer Research Laboratories, from ten days to three weeks previously, by which time most of the animals had developed tumours, sometimes of considerable size, at the site of operation. The precise area of the resulting tumours in each animal is recorded on charts by one of the laboratory attendants 10 days after implantation, and subsequently at weekly intervals. In every experiment one lot of inoculated mice was set aside as a control. Each series of experiments has extended over a period of five or six weeks, or occasionally even more, so that the work has necessarily taken up a considerable period of time. Owing also to the exigencies of the special work of the laboratory staff, and of official duties on the part of the member of this committee to whom the investigation was entrusted, delay in the prosecution of the work has from time to time proved unavoidable.

As the work is still in progress it would serve no useful purpose, on the present occasion, to enter into details of the numerous experiments performed. It is therefore proposed only here to set out a brief statement of the main results which thus far have been obtained.

As a preliminary step a number of mice were injected hypodermically with a 2 per cent. solution of spermin in normal saline solution, in quantities varying from 0·1 to 0·4 c.c., in order to make certain that the employment of this substance was not productive of any ill effect on the mouse. This having proved to be the case with these doses, 4 mice which had been inoculated just previously with 0·05 gramme of tumour 63/41A in the left axilla, were subsequently injected daily, with the exception of Sundays, for a period of 17 days, with 0·4 c.c. of the spermin solution. By this date three out of the four tumours which had arisen in these mice, as the result of inoculation, had entirely disappeared, while of eight tumours which had arisen in 10 control mice, inoculated on the same date, *none* had disappeared, although two had somewhat decreased in size.

On Feb. 4th of the present year 20 mice were inoculated with a very rapidly growing strain of tumour, of which 10 were kept as controls in a separate cage. A week later tumours had appeared in all these mice. From this date, for a period of nearly three weeks, 10 of the mice were injected daily, except on Saturdays and Sundays, with 0·4 c.c. of the spermin solution. As by this time the result obtained with the injected as compared with the control mice merely showed differences which might be considered as coming within the limit of experimental variation, the work was not continued.

In view of the apparent difference of result obtained in these two experiments, Dr. Bashford suggested that for future work it would be desirable to employ for purposes of inoculation a slow but continuously growing tumour (Twort 30B.), which, in this respect, most nearly reproduces the characteristics of a spontaneously occurring tumour. With this material Dr. Murray inoculated 40 mice on March 4th, of which 10 were kept as controls, the other 30 being divided into three lots of 10 each, and kept in separate cages. These were respectively injected daily—(*a*) with fresh emulsion of mouse testis 0·4 c.c. each; (*b*) with spermin solution; and (*c*) Poehl's orchidin solution in similar quantities. On March 21st eight tumours had developed in each lot of 10 mice, while one of the controls had died. By April 4th, of the spermin series, five of the tumours had disappeared; of the testicle emulsion series all eight tumours showed a definite increase in size; while of the orchidin series the tumours exhibited no appreciable difference from those of the controls. At this point the experiment was unavoidably interrupted.

In a further experiment on somewhat similar lines half the number of the experimental mice, in addition to being injected daily with spermin, had fresh testicle emulsion administered by the mouth. These latter, at the end of four days, showed a considerable diminution in size as compared with those injected with spermin only, one tumour of fair size having even at so early a stage of the experiment disappeared completely. Subsequently, however, possibly for the reason that the dose of spermin, which was larger than in previous experiments, was repeated too frequently, all the remaining tumours exhibited slow but steady increase in size up to the period when, three weeks later, the experiment was terminated.

In other experiments a testicle extract was employed which had been freed from nucleo-proteid, and which therefore contained, in addition to spermin, creatin and other extractives as well as inorganic salts. The use of this material for the purposes of injection in a large number of mice eventually afforded no appreciable difference from the control mice as regards the size of the tumours, the result thus differing on the one hand from the definite increase obtained with the use

of *fresh* testicle emulsion, and on the other from the diminution obtained in certain instances in which a solution of spermin was employed.

Certain of these experiments are now in process of being repeated with large numbers of mice, by independent workers in the laboratories of the Imperial Cancer Research Fund, where also, thanks to the kindness of Dr. Bashford, a further series of experiments are also being carried out, in which nucleinic acid of orchitic origin is to be employed, both hypodermically and by oral administration—in the latter case both with and without the simultaneous use of hypodermic injections of spermin.

MOTORING NOTES.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

Security Bolts or Not?

THERE is no doubt that security bolts have given trouble: firstly, unless care is taken the inner tube may be nipped by them, but chiefly, even if they be adjusted correctly, dust and wet may enter. Is it possible to dispense with security bolts? From a theoretical point of view, if the air pressure is sufficient and there is an exact fit between the beads of the cover and the rim clinches they should be needless. However, as the pressure in the inner tube may become insufficient, and driving strains, skidding, and the sudden application of the brakes may tend to make the cover creep, there is no doubt that something extra to hold the cover to the rim is essential. Still it does not follow that a number of security bolts must be used. In fact, all that is required can be obtained by one security bolt, or, what is better, the valve and one security bolt can be combined, as is the case with the Michelin bolt valve, or the Hobson tyre clamp may be used. In the Michelin device a boat-shaped plate is held in position on the body of the valve, and when the latter is in place, and the valve hood which replaces the ordinary inner tube valve cover is screwed down, the edges of the plate press firmly against the beads of the cover and lock them into the rim clinches, and thus all ordinary security bolts can be dispensed with. If it is decided to do away with the security bolts, the bolt holes in the rim must be stopped up. Ordinary small flat-headed bolts that can be obtained from any ironmonger may be used, or wood plugs driven tightly in can be employed, providing that they do not project on the inside of the rim. Messrs. Michelin advocate special dummy bolts which they supply for the purpose.

Dual or Single Ignition?

As a rule most foreign car manufacturers content themselves with fitting a single method of exploding the mixture, and this is now invariably the high-tension magneto. I have had a good many letters from medical motorists on this matter as to whether it is safe to rely upon the magneto alone. There is no doubt that the magneto has of late years been greatly improved; still, slight defects may arise. Though the majority of these defects can, if magneto spares are carried, be remedied on the road, yet if a "short" should develop in the armature winding, then, unless a second ignition is fitted, the motorist is stranded. For the profession, therefore, it seems desirable that a second ignition should be fitted, and if this is provided the two systems should be absolutely independent of one another.

The Care of the Magneto.

An important preventive of trouble is to insist that the magneto is positively driven—that is, by a dog clutch, and anyway not by a chain. Though a broken chain can be easily repaired it is not easy to replace the chain so that the timing is correct. Also, if the chain wears the timing of the spark will be erratic, sometimes ahead and at others behind the correct position. The commonest cause of trouble is, however, too great energy with the oil-can. Because a couple of oil holes are provided it does not follow that they should be dosed with lubricant whenever a halt is made. With other parts too much oil is better than too little, but in this instance the converse holds; a few drops of oil twice a month are ample. Swamping with oil may lead to the destruction of the wiring insulation and internal "shorts." It may also have a bad effect on the fibre rollers which actuate the make and break. The commutator and its brushes, too, must be maintained electrically clean—that is, free from any deposit of oil or carbon that may have collected between the brass plots. The platinum points of the make and break must be kept clean. It is rarely necessary to dismount these parts for adjustment, but should they become pitted after long use, they may be made true with some fine emery cloth, or carefully smoothened with a file. The magneto is really a simple piece of mechanism. A short time spent under the direction of someone who understands it will result in a familiarity with its adjustment that may obviate many lengthy delays and much irritation.

The Appearance of the Motor-body.

I recently spent a short time at a coachbuilder's and the manager explained to me that a slow drying varnish should be used and that it should be allowed full time to dry in the paint-shop before exposure to wear. Often, though the varnish may appear dry, and though it may not stick to the fingers, it is but the outside that is dry and the underneath portion is soft, and if the car is taken out in that condition its brilliant appearance will be of short duration. The impatient purchaser harasses the motor-dealer and the latter in his turn worries the coachbuilder. Neither desires the order to be cancelled, so some expedient is resorted to, such as washing the car with cold water. This hardens the outside of the varnish, but unfortunately does not affect the interior surface, and the earlier delivery of the car thus obtained may ensure the short life of the paint-work. The great advantage of the ex-coachman chauffeur is that he certainly does know how to look after the body-work of his car. I am afraid this cannot be said of all chauffeur mechanics. The main secret of the durability of the paint-work depends on the washing. Plenty of water laid on with a hose should be used so as to soften and carry away all the mud. Then the body should be wiped dry with a chamois leather or some stockinette material, and finally polished by an up-and-down movement with a chamois leather which should be kept exclusively for that purpose. The addition of petrol or paraffin to the washing water will assist in the cleaning, but will also help in removing the varnish, and should therefore not be allowed. Touching-up the body and revarnishing once a year maintain a good appearance and postpone the day when repainting must be done; also the woodwork is thus preserved.

LONDON HOSPITAL EXPENDITURE IN 1909.

THE seventh annual report of King Edward's Hospital Fund for London has recently been published. It will be remembered that when the late King Edward graciously consented to become patron of this Fund, which will always be intimately associated with his name, he made it a condition of future participation in its benefits that each hospital should furnish the Fund with uniform particulars of annual expenditure.

The preparation of annual reports for this Fund was begun in 1903 by Mr. Danvers Power, whose investigations at that time did not extend to more than 16 of the London hospitals. But the earlier reports contained confidential matter, and their circulation was accordingly restricted to the contributing authorities.

The first report printed for general circulation was that for 1908, in which the principles and objects of these documents were fully set forth. But it was not until the following year—namely, that to which the present report relates—that the difficulty of instituting valid comparison between the several hospitals was completely surmounted, and this was accomplished by the adoption of a uniform system of hospital account-keeping prepared for the Fund by Mr. John J. Griffiths, F.C.A., and adopted with the concurrence of a committee of hospital secretaries.

Sir Savile Crossley and Mr. Frederick Fry, the honorary secretaries of King Edward's Hospital Fund, have rendered a public service by publishing the present detailed reports on the expenditure of the great majority of the London hospitals which received grants from the Fund in the year 1909. The statistical part of the report has been compiled for the Fund by Mr. R. H. Maynard, who has marshalled his facts with

great care and with considerable actuarial ability. The report deals with 17 of the larger and 15 of the smaller general hospitals, each of the former containing more and each of the latter fewer than 100 beds, in daily occupation. In addition to these account is rendered of four hospitals for consumption, five for the diseases of women, seven for those of children, five for ophthalmic cases, three for epilepsy, and 43 for other diseases. The tables in the present report afford, for the first time since the introduction of the uniform system of account-keeping, opportunity of making comparison between one year and another with respect to hospital expenditure. In drawing conclusions from the tables in the report it must be remembered that they only provide material for comparison of outlay and take no account of the relative value resulting from that outlay, except in so far as this is expressed in terms of average length of stay in hospital per in-patient or of average number of attendances per out-patient. It goes almost without saying that even if the degree of economy in management were the same at all the hospitals there would still remain considerable differences of cost, dependent on the kinds of cases admitted and on the methods of treatment. Obviously, the main question in each case is, in the words of the report, to determine "how far a given cost *above the average* is justifiable or whether a given cost *below the average* is attained at a sacrifice of full efficiency." In all the tables it is the average that is taken as the basis of comparison, and there is no suggestion that the lowest is put forward as a model for imitation. In the year 1905 the reduction in expenditure in the case of the 16 hospitals was valued at £24,000 per annum, and in 1906, in the case of 48 hospitals, at an additional £18,000 per annum. Without in any way suggesting that the ideal of economy had been reached, it would be unreasonable to expect the same rate of decrease in cost to be continued indefinitely. Mr. Maynard, however, reasonably contends that unless the cost again increases the saving may be regarded as an annual one. "It would appear," he tells us, taking everything into consideration, "that the net figure of about £6000 fairly represents a real progress in the direction of increased economy during the year 1909, and, in so far as the circulation of these reports has assisted towards that end, the result may be some reward to the hospital officials for the labour involved in preparing the printed and written material required by the Fund for the purpose."

In glancing rapidly at the items of expenditure in the summary table it is disappointing to note the retention of the heading "rates and taxes." Having regard to the absolute necessity of gratuitous hospital provision for the class of the community immediately above paupers, it is surely time that, as regards Government taxes at any rate, this heavy deduction from the contributions of the charitable should cease. There is a justifiable precedent for such relief in the case of life-insurance premiums. This is a question which we submit not for the first time for the earnest consideration of Parliament.

SIXTY-FOURTH REPORT OF THE COMMISSIONERS IN LUNACY, 1910.[1]

ON January 1st, 1910, the number of certified insane persons under care in England and Wales was 130,553, a number exceeding that recorded on Jan. 1st, 1909, by 1766. The average annual increase for the ten years ending on Dec. 31st, 1909, was 2394, so that the increase for the year 1909 was 628 below the average of the decennium. The increase is lower than any yearly increase since 1901. Although the estimated population in 1910 is 12·2 per cent. above that in 1900 and that of the insane 22·4 per cent. above that in 1900, yet in the rate of increase during 1909 there is a marked approximation between the two series, that of the general population being reckoned to be 1·16 per cent. and that of the insane 1·37 per cent. If the rate of increase of the insane should continue to fall it may shortly be expected to come down to the same level as that of the general community. Taking the number of patients admitted annually and calculating the ratio that they bear to the population, it appears that from 1869 onwards the ratios, whilst fluctuating from year to year, have risen from 4·71 per 10,000 in 1869, the lowest recorded, to 6·93 in 1902, from which year there has been an almost regular decline to 6·09 in 1909, which is nearly the same as the ratio in 1899. On the figures of 1869 the increase of the ratios, which was as much as 47·1 per 10,000 in 1902, fell to 29·3 in 1909.

There were placed under care during the year 1909 21,764 patients, being 480 fewer than during the previous year. Of the number admitted there were 18,346 first admissions. The number of those discharged recovered was 7831, giving upon the total admissions a recovery rate of 35·98 per cent., being 9·6 higher than the rate for 1908 and 0·92 below the average for the ten years 1900 to 1909 inclusive. The rate for females was higher than that for males. Those discharged as not recovered numbered 2186. The deaths numbered 10,138, exceeding the number for 1908 by 446. The death-rate, reckoned on the daily average number resident, was 9·78 per cent., being 0·18 below the average for the ten years. The rate for males was 10·97 and that for females 8·75. The death-rate is more than six times as high as the general death-rate. The ratio of deaths in institutions for the insane, exclusive of those for idiots, per 1000 living was for males 105·2 and for females 84·9. Among the general population in the same year the ratio was 15·7 and 13·7. There appear to be four causes which together account for nearly 45 per cent. of the total number. These are general paralysis, 17 per cent.; tuberculosis, 16 per cent.; old age, 9 per cent.; and dysentery, 3 per cent. The number of post-mortem examinations was 7476, being 77·6 per cent. of the total number of deaths.

In the matter of the allegations made last year as to the annoyance caused by the exercising of patients in the neighbourhood of Epsom, it appears that the Asylums Committee of the London County Council has drawn up regulations so that the public may be safeguarded and, at the same time, that all patients who are fit for it may have frequent opportunities for that change of scene in the outer world which is for many of them desirable. The regulations are comprehensive and reasonable.

The Commissioners have devoted some pages of their report to an interesting consideration of the exceptional prevalence of dysentery in asylums. It appears that only in about one half of the asylums of England and Wales is dysentery so prevalent as to justify its being regarded as endemic or indigenous, that in no small number of the remainder of these institutions the disease is very rarely met with, and that in a few it does not appear at all. The occurrence of the disease in epidemic outbreaks is by no means universal, and some asylums where the incidence-rate is high are quite free of them, though, on the other hand, such outbreaks have occurred in asylums where previously cases have been few and sporadic. These epidemics seem to be best explained on the hypothesis of varying infectivity, favoured, perhaps, by local conditions. Many asylums are comparatively exempt from dysentery, and in view of this it cannot be asserted that such conditions as overcrowding or defective sanitation can of themselves determine its occurrence, however much they may conduce to its persistence when once it has gained an entrance. The chronically insane are more prone to the disease than are others and appear to furnish appropriate soil for the virus which, as well as other essential factors, must be postulated.

Reference is made in the report to a letter received from the Medico-Psychological Association concerning post-graduate instruction in psychiatry, and the Commissioners express themselves as being in warm sympathy with the principles enunciated. It has long been felt that adequate and systematic instruction in the science is in this country defective, or indeed almost absent, and the evils resulting become more conspicuous every year. The Association has become impressed with the desirability of the establishment of a special diploma on the lines of those of public health and tropical medicine and is of opinion that its institution would impose a high standard of acquirement in the officers of asylums, would stimulate the scientific study of insanity, and would have an effect in widening and deepening knowledge of the subject.

In a supplement to the report is contained a series of abstracts of papers published and work done in various asylums by a large number of investigators.

[1] London: Eyre and Spottiswoode. Price 2*s*. 11*d*.

FIFTY-SECOND ANNUAL REPORT OF THE GENERAL BOARD OF COMMISSIONERS IN LUNACY IN SCOTLAND.

ON Jan. 1st of this year there were 18,337 insane persons in Scotland of whom the Board had cognisance. The general results for the year 1909 compared with those of the previous year are as follows: 1. There was a total increase of 111. This increase is regarded as the product of an increasing population, and is the smallest recorded since the establishment of the Board. It is more than accounted for by the decreased number of patients removed from the register by discharge, since it occurred in spite of a falling admission-rate and a rising death-rate. Admissions numbered 3249, and of these 496 were private patients, or 114 less than in the preceding year; and 2753 were pauper patients, or 160 less than in the preceding year. It appears that, notwithstanding the increase in proportion to population of insane persons, officially known as such, in the past five years the production of insanity as shown by admissions to the register has not risen, but has, on the contrary, materially decreased. What has happened is, in the apt comparison used in the report, precisely analogous to the case of a reservoir which, notwithstanding a diminished inlet of water, will fill to overflowing if the outlet is more than equally diminished. The discharge-rate, which in the period 1881–85 was 177 per 1000, has in the last five years fallen to 121. This is attributed by the Board to such reasons as the growing tendency of the public to regard asylums as merely a special form of general hospital, and the consequent reluctance of relatives to receive patients back to their homes unless complete recovery has taken place; the larger proportion of old or physically disabled patients who are when admitted broken down in mind and body beyond hope of recovery; and the growing inactivity or indifference on the part of many parochial authorities with regard to the removal of unrecovered patients who have ceased to derive benefit from asylum residence.

The number of patients discharged was 3156. Of these, 215 were private patients, this number being 19 less than in the preceding year, while the pauper patients were 151 below the number for the preceding year. While the proportion of recoveries among private patients has varied from one year to another, it has shown no certain indications of falling off. Among pauper patients a continuous decrease is recorded. The recovery rate has, in the opinion of the Board, been unfavourably affected by the increased use of observation wards connected with the parochial hospitals of several large parishes, which receive persons suffering from passing attacks of mental disorder, of whom some, in the absence of such wards, would have been removed to asylums and would have been discharged recovered shortly after admission. Deaths among private patients numbered 209, and among pauper patients 1184.

The report this year contains the quinquennial retrospect that the Board is accustomed to make. Certain important and reassuring conclusions are reached. While it appears that the number of patients on the register has increased during the last five years, yet the increase is greatly below that of any quinquenniad during the previous 25 years. The increased number of patients found upon the register is due to accumulation caused by a fall in the number of patients discharged to an extent which has outbalanced the effects of a lowered admission-rate and a higher death-rate. The occurrence of insanity, as shown by admissions to the register, in proportion to population shows a marked decrease, confined to no particular part of the country, throughout the past five years.

THE WEST OF ENGLAND EYE INFIRMARY, EXETER.—Earl Fortescue, on Sept. 21st, formally opened the new "centenary" wing of the West of England Eye Infirmary in the presence of a large gathering. The new building consists of male and female day-wards, children's day-ward, servants' dormitories, children's playground on a flat roof, kitchens, &c. The cost of the undertaking was £3000, and the whole of this sum has been raised. The West of England Eye Infirmary performs a most useful work in the "Ever Faithful City," for during the hundred years it has been established over 120,000 persons have been treated.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

City of Bristol.—The growth of this important city, largely by extension of its limits and absorption of relatively rural areas, is well exemplified in the current annual report of Dr. D. S. Davies. In 1891 the area of the city was 4538 acres, the population 222,049, and the density 48·93 persons per acre; in 1909 the area had quadrupled itself at 17,289 acres, the population was estimated at 377,642, and the density had been reduced to 21·84 persons per acre. In 1897 a population of 85,800 was added to the city, and in 1904 one of 13,443. The corrected death-rate for the year 1909 was 13·76 per 1000, and the infantile mortality only 101 per 1000 births. The Notification of Births Act has not yet been adopted, nor have any health visitors been employed. But on Nov. 5th, 1909, a committee of ladies opened a school for mothers whereat demonstrations on the bathing and dressing of infants are given and similar matters discussed. Every Friday a lady medical practitioner attends and gives advice. "Health Talks" are also given at the mothers' meetings in different parts of the city. The promoters of these movements must not be discouraged if the efforts are followed by a rise in the infantile mortality, as the rate for 1909 was a remarkably low one, and due mainly to climatic conditions which may not be repeated. A very instructive account of the small-pox in Bristol during 1909 is to be found in the report before us, and it may be read with profit by every medical officer of health in the country. There were in all 39 cases with 9 deaths, the outbreak commencing in December, 1908, in the person of a corn porter who apparently contracted the disease while at work discharging grain from a steamship from the Sea of Azov. The cases arranged themselves into three groups, but the origin of all the groups is not clear. What, however, comes out in very pronounced fashion is the high infectious power of the disease and its long striking distance. For example, one man before the nature of his illness was ascertained travelled for three miles in a tramcar, and in this manner came in contact with 395 persons who had to be kept under observation during the whole period of incubation. The patient himself died, and he infected his daughter-in-law, a charwoman, a workman at adjoining premises, and a fellow lodger, who in his turn infected two other lodgers and then a bootmaker. In another instance a man at a village some seven miles from Bristol sickened with *variola nigra*, which condition was diagnosed as *purpura*. He was unfortunately conveyed to a general hospital in Bristol, where he died from "acute nephritis," and his body was returned to the village for burial. This case is known to have infected at least 15 other persons, and indirectly it led to 24 cases with two deaths. Persons who entered the ward in which the patient was being treated were attacked, and the two men who carried the coffin to the grave as well as three others who attended the funeral developed the malady; in fact, the disease manifested an infectivity which goes far to suggest that the infection was air-borne, since presumably no contact whatever took place either with the coffin or infected articles in several instances. The disease spread almost entirely through the agency of unrecognised cases, and the series as a whole shows the fallacy of relying upon any machinery which excludes vaccination and revaccination. As Dr. Davies observes, this type of the malady was extremely virulent, as there were three deaths from hæmorrhagic small-pox in unvaccinated children, and out of the 39 cases notified 6, or 15·4 per cent., were hæmorrhagic. The intensity was indeed so great that Dr. Davies thinks it threatened to break down the strong barrier of recent vaccination in the case of two of the nurses who suffered from temporary malaise. The total cost of this outbreak was £829 17*s.* 11*d.*, and it is clear that but for the almost superhuman efforts of Dr. Davies and his staff, who made no less than 16,000 inquiries, the bill would have been of much greater magnitude, perhaps even approaching the cost of the West Ham epidemic in 1901–02, which amounted to over £26,000. The corporation subsidises 20 beds at the Winsley Sanatorium for Bristol cases of pulmonary tuberculosis; and the following table is instructive in view of the interest now being manifested in the much debated question of the value of sanatorium treatment. It may be mentioned

as some guide to the methods of selecting cases which is adopted that during 1909 there were 149 persons who made application for admission and of these 75 were admitted.

Year of discharge.	Total discharged.	Alive Dec. 31st, 1909.	Well and working capacity maintained.	Whereabouts unknown.	Dead.
1905	45	16	12	6	23
1906	67	21	19	10	36
1907	68	37	33	15	16
1908	78	46	43	9	23

Dr. Davies is performing a useful public service in publishing the statistics in this fashion.

County Borough of Oldham.—Dr. James B. Wilkinson gives grounds for estimating the population of Oldham at over 150,000, as against the Registrar-General's estimate of 143,301, and it is important to bear in mind the fact that the annual rates for 1909 are based on the latter figures. The birth-rate was 27·4 and the corrected death-rate 19·0 per 1000 in each instance, while the infantile mortality was 119 per 1000 births, which is 18 per cent. below the previous lowest record. During 1909 an inquiry was undertaken in one of the wards with respect to the influence of the employment of married women on infant life. Although the number of births in the population under consideration was too small for reliable inferences to be drawn, the investigation, for what it is worth, supports the view that the industrial employment of women exercises no very harmful effect upon the infant. It was shown that in Oldham at least 85 per cent. of the mothers who are engaged at the mills relinquish work at least a month before confinement, while in the case of other forms of employment 80 per cent. worked up to the last week. After confinement nearly 60 per cent. of the mothers did not resume work during the year, only 4 per cent. resumed work at the end of a month, and 20 per cent. within two months, these latter being for the most part compelled to return to work from lack of funds. The facts elicited tended to show that as a rule the married woman gives up work altogether after her first confinement. The death-rate from pulmonary tuberculosis was 1·4 per 1000, which was the lowest on record, except in 1906, when it was 1·3 per 1000. There has, in fact, as in almost every other town, been a gradual lowering of the death-rate from this disease for many years past. With the introduction of the tuberculosis regulations as regards Poor-law cases it was found desirable to obtain compulsory powers for disinfection and cleansing, and provision towards this end was made in a local Bill then before Parliament. But the Parliamentary Committee refused to grant the powers asked for without compulsory notification, which came into force at the beginning of November, 1909. With a view to facilitating treatment one block of the small-pox hospital has been set aside for the use of patients suffering from pulmonary tuberculosis, there being accommodation for nine male and nine female patients. The experience so far gained has been in accordance with that obtained elsewhere—that is to say, that the patients have often made considerable progress even during cold weather with three or four feet of snow on the ground. The hospital is at a level of over 1000 feet above the sea, but is sheltered by hills from the north and east winds. The fact that the cold weather and snow did not affect the patients prejudicially is no matter for surprise to anyone familiar with the conditions existing in the high Alps during the winter months, even at altitudes such of those of St. Moritz and Davos of 5000 to 6000 feet above sea level. The charge made at Oldham varies according to the income of the family from *nil* to 3*s.* 6*d.* and upwards, and the guardians have sent in four cases at a charge of 35*s.* a week. The cost of maintenance is 32*s.* 6*d.* per week when all the beds are full. The majority of the cases gained greatly in weight, but in several instances where this gain took place there was but little improvement in the lung condition. No comments are made as to the presence or absence of tubercle bacilli on admission and discharge. The water-supply of Oldham is derived from upland gathering grounds and is very pure. It has, however, a distinct plumbo-solvent power, and to correct this the water is collected from the land as rapidly as possible and treated with carbonate of lime, which appears to be effectual. Parliamentary powers have now been obtained for utilising the water pumped from a disused colliery.

County Borough of Bury.—Dr. Robert Burnet is able to announce in his annual report that owing to the munificence of Mr. and Mrs. Aitken, who have handed over to the Bury and District Joint Hospital Board their former residence, Holcombe Hall, there will soon be available for the people of Bury an up-to-date sanatorium for consumption. The Notification of Births Act, 1907, which has now been adopted in Bury, is working smoothly, a lady inspector having been appointed to visit the children.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 7692 births and 4235 deaths were registered during the week ending Sept. 24th. The annual rate of mortality in these towns, which had been 11·7 and 12·6 per 1000 in the two preceding weeks, further rose last week to 13·0, and exceeded the rate in any week since February last. During the first 12 weeks of the current quarter the death-rate in these towns averaged 11·6 per 1000, and in London during the same period the death-rate, calculated on the probably over-estimated population, did not exceed 10·8 per 1000. The lowest reported annual death-rates in these 77 towns last week were 4·7 in Leyton, 6·0 in East Ham, and 6·2 in King's Norton, all being suburban districts; the rates in the other towns ranged upwards to 19·4 in St. Helens and in Halifax, 20·3 in Oldham, 20·4 in Dewsbury and 22·7 in Swansea. In London last week the reported death-rate did not exceed 12·0 per 1000. The 4235 deaths registered in the 77 towns last week showed a further increase of 150 upon the numbers in the two preceding weeks, and included 589 which were referred to the principal epidemic diseases, against numbers ranging between 720 and 621 in the four previous weeks; of these 589 deaths, 399 resulted from diarrhœa, 64 from whooping-cough, 42 from measles, 32 from diphtheria, 27 from scarlet fever, and 25 from enteric fever, but not one from small-pox. The mean annual rate of mortality from these diseases in the 77 towns last week was 1·8 per 1000, against 2·2, 1·9, and 2·0 in the three preceding weeks. No death from any of these epidemic diseases was registered last week in Walthamstow, Hornsey, Reading, Coventry, Bournemouth, Burton-on-Trent, or Ipswich; the annual death-rates therefrom ranged upwards, however, to 3·9 in Middlesbrough and in Newport (Mon.), 4·1 in Barrow-in-Furness, 4·5 in Stockport, and 4·7 in Hull. The deaths attributed to diarrhœa in the 77 towns, which had been 527, 462, and 476 in the three preceding weeks, declined last week to 399; they caused, however, death-rates in the several towns ranging upwards to 3·5 in Stockport and in Preston, and 3·9 in Hull and in Newport (Mon.). The fatal cases of whooping-cough, which had been 50 and 56 in the two previous weeks, further rose to 64 in the week under notice; the highest rate from this disease during the week was 1·1 in Blackburn. The deaths from measles, which in the four preceding weeks had ranged between 77 and 51, declined last week to 42, and were fewer than in any previous week of this year; they caused the highest rates 1·4 and 2·8 in Oldham and Tynemouth. The 32 deaths referred to diphtheria showed an increase of 13 upon the number in the previous week, and included 10 in London and its suburban districts, and 4 in Birmingham and King's Norton. Scarlet fever caused 27 deaths last week, against 17 and 18 in the two preceding weeks; these included 6 in Liverpool, corresponding with the number in the previous week; they were proportionally most numerous, however, in Walsall and in Huddersfield. The 25 deaths referred to enteric fever also showed an increase upon recent weekly numbers; 12 occurred in London (against 3 and 6 in the two previous weeks), and 2 in Bolton. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had increased in the five preceding weeks from 1423 to 1509, had further risen on Saturday last to 1560; 210 new cases were admitted to these hospitals during the week, against 183 and 201 in the two preceding weeks. The 1118 deaths from all causes in London last week included 123 which were referred to pneumonia and other diseases of the respiratory

system; they showed a decline of three from the number in the previous week, and were 20 below the corrected average number in the corresponding week of the five years 1905–09. The causes of 37, or 0·9 per cent., of the deaths registered in the 77 towns during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Manchester, Leeds, Bristol, West Ham, Leicester, Salford, and in 50 other smaller towns; the 37 uncertified causes of death in the 77 towns included 7 in Birmingham, 5 in Liverpool, 4 in Preston, 3 in Sheffield, and 2 in South Shields.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 800 births and 494 deaths were registered during the week ending Sept. 24th. The annual rate of mortality in these towns, which had been equal to 13·0 per 1000 in each of the two preceding weeks, rose last week to 13·6. During the first 12 weeks of the current quarter the death-rate in these towns averaged 12·8 per 1000, and exceeded by 1·2 the mean rate during the same period in the 77 largest English towns. The annual death-rates in the eight Scotch towns in the week under notice ranged from 9·5 and 11·9 in Paisley and Edinburgh to 22·4 in Perth and 23·4 in Greenock. The 494 deaths from all causes in the eight towns last week exceeded by 21 the number returned in each of the two preceding weeks, and included 72 which were referred to the principal epidemic diseases, against 93, 69, and 78 in the three preceding weeks; of these 72 deaths, 47 resulted from diarrhœa, 10 from diphtheria, 5 from scarlet fever, 4 from whooping-cough, 4 from "fever," and 2 from measles, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the eight towns last week was equal to 2·0 per 1000, the rate from the same diseases in the 77 English towns being 1·8 per 1000. The deaths attributed to diarrhœa in the Scotch towns, which had been 68, 51, and 45 in the three preceding weeks, rose again to 47 last week, of which 22 occurred in Glasgow, 9 in Dundee, 5 in Edinburgh and in Aberdeen, 4 in Paisley, and 2 in Greenock. The 10 fatal cases of diphtheria corresponded with the number in the previous week, and included 4 in Edinburgh and 3 in Glasgow. Three of the 5 deaths from scarlet fever and 2 of the 4 from whooping-cough were returned in Glasgow. The 2 fatal cases of measles occurred in Dundee. The 4 deaths referred to "fever" corresponded with the number in the previous week, and included 3 in Glasgow and 1 in Greenock; the 3 in Glasgow were certified as enteric, and the 1 in Greenock as cerebro-meningitis. The deaths referred to diseases of the respiratory system in the eight towns, which had been 42 and 58 in the two previous weeks, further rose to 64 last week, and exceeded by 5 the number in the corresponding week of last year. The causes of 17, or 3·4 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death did not exceed 0·9 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 647 births and 387 deaths were registered during the week ending Sept. 24th. The mean annual rate of mortality in these towns, which had been equal to 15·1 and 17·0 per 1000 in the two preceding weeks, further rose to 17·5 in the week under notice. During the first 12 weeks of the current quarter the annual death-rate in these Irish towns averaged 16·2 per 1000; the mean rate during the same period did not exceed 11·6 in the 77 largest English towns and 12·8 in the eight principal Scotch towns. The annual death-rate during last week was equal to 21·4 in Dublin, 16·3 in Belfast, 16·4 in Cork, 10·8 in Londonderry, 12·3 in Limerick, and 23·4 in Waterford; the mean annual death-rate last week in the 16 smallest of these Irish towns did not exceed 14·2 per 1000. The 387 deaths from all causes in the 22 town districts last week showed a further increase of 12 upon the numbers returned in recent weeks, and included 58 which were referred to the principal epidemic diseases, against 43 and 61 in the two preceding weeks; these 58 deaths were equal to an annual rate of 2·6 per 1000, the rate from the same diseases last week being 1·8 in the 77 English towns, and 2·0 in the eight Scotch towns. The 58 deaths from these epidemic diseases in the Irish towns last week included 45 from diarrhœa, 6 from measles, 4 from diphtheria, 2 from whooping-cough, and 1 from enteric fever, but not one from small-pox. The deaths attributed to diarrhœa, which had been 38 and 48 in the two previous weeks, declined again to 45 in the week under notice, and included 21 in Dublin, 13 in Belfast, 4 in Cork, and 2 both in Londonderry and Waterford. Of the 6 fatal cases of measles, 3 occurred in Dublin and 3 in Belfast. Three of the 4 deaths from diphtheria were returned in Dublin, as was also the death referred to enteric fever. The deaths in the 22 towns last week included 54 which were referred to pneumonia and other diseases of the respiratory system, against 38 and 47 in the two preceding weeks. The causes of 9, or 2·3 per cent., of the deaths registered last week in the Irish towns were not certified; in the 77 English towns the proportion of uncertified deaths last week did not exceed 0·9 per cent., and in the eight Scotch towns it was equal to 3·4 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified: Fleet-Surgeons: A. Maclean to the *Jupiter*, on recommissioning, and H. S. Burniston to the *Britannia*, on recommissioning. Staff-Surgeons: C. E. C. Stanford to the *Jupiter*, on recommissioning; W. H. O. Garde to the *Minerva*, on recommissioning; A. J. Hewitt to the *Jupiter*, additional, on recommissioning; A. G. Eastment to the *Gloucester*, on commissioning; and W. H. Daw to the *Isis*, on recommissioning. Surgeons: F. G. Goble to the *Minerva*, on recommissioning, and S. L. McBean to the *Britannia*, on recommissioning.

ROYAL NAVAL VOLUNTEER RESERVE.

William Alexander Milne to be Surgeon (dated Sept. 22nd, 1910).

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd London (City of London) Field Ambulance: Captain Ernest B. Waggett to be Major (dated Feb. 3rd, 1910).

1st South Midland Field Ambulance: Major Cyril H. Howkins to be Lieutenant-Colonel (dated August 22nd, 1910).

For attachment to Units other than Medical Units.—Lieutenant Charles Corfield, from the 3rd South Midland Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated August 17th, 1910).

A NEW NAVAL GYMNASIUM.

The new Physical Training School, erected at a cost of £20,000, close to the Royal Naval Barracks at Portsmouth, was formally opened on Sept. 22nd. The gymnasium is equipped with all the most approved apparatus for instruction.

TERRITORIAL NURSING AND RED CROSS NOTES.

On Sept. 8th a branch of the British Red Cross Society was formed at Uttoxeter. Colonel J. H. Jelf, C.M.G., who explained the objects and aims of the Red Cross movement, said that there was a good deal of misconception on this subject. Some people imagined that it was a political society, but it was simply and solely an association for reducing, as far as possible, the misery, unhappiness, and suffering which invariably followed in the course of war in any country. Whatever else might be said of Mr. Haldane's scheme, it had prepared a framework—and a framework which he, for one, considered admirable—for the defence of the country. The ladies could help in the defence of the country by joining the Voluntary Aid Detachment, by which they would relieve the suffering of soldiers and sailors, and especially the suffering of the members of the Territorial Forces, in the event of their being called upon for active service.

HEALTH REPORTS OF FOREIGN NAVIES.

Other nations are very deliberate in producing their reports on the health of their navies. That of the Japanese navy for 1907 was issued in May, the Italian report for 1905 and 1906 was published only in July, while the Blue-book for the British navy for 1908 is already out, and the German report

for 1906–07 appeared a year ago. Of these, the German is particularly interesting with its well-prepared clinical and etiological accounts of the diseases observed. The Japanese report, very well printed, and in English, has less clinical interest, but its two striking diagrams are very useful, exhibiting graphically and immediately the causes of the chief losses to the service by invalidings (phthisis, 167 men; pleurisy, 103; injuries, 18); and by deaths (typhoid fever, 34; suicide, 30; burns, 27; phthisis, 27; pleurisy, 9). Their total force was 40,429 men, of whom, per 1000, 4·7 died, and the daily sick-rate was 58. The number "sick" appears large, but includes men doing their work while attending for treatment as well as men on light duty. The recruiting tables show the average height, weight, chest expansion, hand grasp (left and right), &c., of the recruits from the various Japanese prefectures. These should in time be of great anthropological interest. The weight of the men in the fleet (average 129¼ pounds) is obtained from the weighing of 38,029 men in March, when their weight is a maximum, and also in September, when it is a minimum. This lessened weight after summer is noted in the German report, and ascribed to the strenuous life during the manœuvres. The Japanese report nowhere indicates the age incidence of the disease which occurred. This is fully stated in the very elaborate Italian report; indeed, in too great detail to be of much use. But these lavishly provided tables are interesting, showing the incidence of disease on the various groups of officers and men, executive officers, doctors, stokers, ship's stewards, and so on, both according to age and month by month. It is surprising to find (pp. 160–161) that there were 201 officers in 1905 between the ages of 20 and 25, but in 1906 only 56, making one wonder what became of the others since the preceding year. The preliminary remarks are mainly confined to the statistics repeated later in the tables; it would be more instructive to have essays on the cause and treatment of the diseases as in the German report. There were in the Italian navy in 1906 27,358 men, of whom per 1000 3·47 died, and the daily sick-rate was 49. The parallel figures were for Germany in 1906–07, 45,776; 2·4; 27. for the British navy in 1907, 108,740; 3·35; 29. Venereal disease causes 30 to 40 per cent. of the daily sick list of all four navies, of which syphilis is roughly one-third. The loss from tubercle is most marked in Japan and Italy. Japan besides lost many men from pleurisy. If in the periods stated the total loss of service from tubercle be calculated by Gatewood's method,[1] which associates sick list, invalids, and deaths, and gives perhaps a better measure of the morbidity than any other, they work out at: Japan, 3·3 men daily per 1000; Italy, 2·5; England, 1·8, and Germany, 1·2. But these figures cannot be at all exactly weighed against one another when we are without information as to the age distribution and the periods of service in each case. It would be easier to compare the health conditions of other navies if they all published an abstract of their statistics like that in the English Blue-book, Total force, No. 1, which gives the best statistical summary.

[1] See review of his book on Naval Hygiene, THE LANCET, Dec. 4th 1909, p. 1673.

HEALTH OF DEVON IN 1909.—The medical officer of health of Devon (Mr. G. Adkins) in his annual report for 1909, which has just been issued, states that during the year 9007 births were registered, giving a birth-rate of 20 per 1000, compared with 20·3 in 1908. 6047 deaths were registered, the death-rate being 13·4 per 1000, against 13·6 in the preceding year. The death-rate from infectious diseases was 0·34 per 1000. 1490 cases of notifiable diseases occurred, giving a rate of 3·3 per 1000, the same as in 1908. Three cases of small-pox were notified, two of which were brought to the port of Plymouth. 708 cases of scarlet fever were notified, 474 of diphtheria, and 93 of enteric fever. 412 deaths were due to pulmonary tuberculosis, compared with 479 in the previous year. 133 deaths occurred from other forms of tuberculosis, against 142 in 1908. Mr. Adkins states that 327 midwives were registered in the county during the year, against 350 in 1908, and of these 75 were certificated. The district medical officers of health perform the duties of the inspection of midwives.

Correspondence.

"Audi alteram partem."

PELLAGRA IN EGYPT.

To the Editor of THE LANCET.

SIR,—The great interest now taken in the etiology of pellagra encourages me to put forward the views which I have long held on the subject, and which may be worthy of attention by the Commission which is, I believe, at work in Egypt. My remarks apply only to pellagra in Egypt, as I have had no experience of it in other countries. During the winter of 1902 I was resident medical officer of Kasr-el-Ainy Hospital, and showed several of the visitors to the Medical Congress round the wards. While so engaged the first doubt as to the reality of pellagra as a definite disease arose in my mind. Professor Bouchard of Paris was one of the visitors, and at his request I showed a case of pellagra which he said was not the same thing as he had seen in the Landes. This statement, coupled with the opinion of the late Dr. Seymour Toller, that pellagra was nothing but a rash due to wind and dirt acting on the skins of the poor and ill-nourished, made me wonder how far the generally accepted opinion was correct. Another point which served to strengthen my doubts was that the rash disappeared, without active treatment, after a day or two of hospital life, but without any corresponding amelioration of the patient's condition. After more than a year of large opportunity and close observation, I was convinced that the patients who showed symptoms, attributed to the eating of diseased maize, were invariably suffering, and had for prolonged periods suffered, from one of the numerous debilitating diseases which prevail in Egypt. I refer chiefly to ankylostomiasis and bilharziasis, though multiple infections with these and other worms are exceedingly common.

A report on three fatal cases of pellagra, with an account of the examination of the spinal cords, was published by Dr. F. M. Sandwith in 1901 in the *Journal of Pathology and Bacteriology*, and in each of these cases there was some distinct pathological lesion in addition to the skin condition. In Case 1 there were 200 ankylostoma worms and the patient died from cerebral hæmorrhage. The examination of the cord showed marked pallor of the posterior median column with a root degeneration at the level of the first lumbar root. This patient had great anæmia and an enlarged malarious spleen. Case 2 was extremely anæmic, had markedly cirrhotic kidneys, and weighed 67 pounds. There is no record in this case that worms were found at the post-mortem examination. The examination of the cord showed well-marked degeneration of the posterior columns, but in view of the general wasting of tissue it is not to be wondered at that there was some alteration from the normal in such highly specialised tissue as the nervous system. Case 3 had been ill for four years and in this time had had ankylostomiasis, and on admission his fæces contained eggs of uncinaria duodenalis, ascaris lumbricoides, and distomum heterophyes. His weight was 109 pounds. He died from acute pericarditis, and Dr. Batten, who examined the cord, reported it as normal.

It is quite clear from these cases that there is no definite pathological picture in pellagra, but I submit that all the changes reported are compatible with a condition of prolonged infection which produces profound anæmia. The excellent illustration which faces p. 314 of Scheube's Diseases of Warm Countries depicts a characteristic pellagrous rash, but it also carries with it the typical appearance of a patient suffering from one of the common worm infections. On p. 34 of the fifteenth annual report of the Egyptian Hospital for the Insane the following sentence apppears: "Nearly every case of pellagra suffers from bilharzia disease, very many from ankylostoma also, and very many from extreme favus of scalp," &c.

In a letter recently received from the Medical Registrar of Kasr-el-Ainy Hospital, Dr. H. B. Day, it is stated that out of 80 cases of pellagra 54 had demonstrable evidence of other infections in which ankylostoma predominated; that these figures only record the leading

clinical characteristics; and that a more thorough investigation would undoubtedly show a greater prevalence of concomitant infection. In this connexion I might point out that some cases of bilharziasis do not pass eggs either in the urine or fæces. It is evident that "concomitant infection" is exceedingly common, but to my mind this so-called "concomitant infection" is the real infection, and the rash which has called attention to the patient is nothing more than evidence of exposure to sharp winds of the skin of a person in an extremely debilitated condition. The patients reported on by Dr. Sandwith all died from some definite and well-known disease, and neither the pathological changes recorded by him or described by Scheube, who follows Tuczek, are sufficiently definite to convince the sceptic that a pathological entity is being described. The quality of nutrition supplied to the tissues by the blood stream in these cases of severe and prolonged worm infection is not likely to be productive of a high standard of health or efficiency, and it is to me by no means surprising that there should be decay of the more specialised tissues as shown by altered reflexes and mental degenerations. It is stated in Scheube's book that "Winternitz goes so far as to deny the existence of pellagra as a specific disease peculiar to a limited area. What is described as pellagra is in his judgment only the conditions of disease induced by want and misery." I am only at variance with this opinion in that I look on some active disease as a necessary factor in the production of the pellagrous condition.

I should like to make my position quite clear by stating that in my opinion pellagra in Egypt is only a rash arising in patients who have been the subjects of prolonged anæmia, and that it is in most cases due to persistent worm infections, and occurs in the worst cases of these infections in association with poverty and malnutrition. In support of this opinion I produce (1) the three fatal cases reported by Dr. Sandwith, in all of which some cause such as I have described was at work; (2) the fact that the rash disappears after a few days of hospital without active treatment; (3) that a large number of so-called pellagrous patients carry the active cause of their anæmia still with them in the shape of ankylostoma worms, &c.; and (4) that the typical pathological picture of pellagra is what one would expect in cases of prolonged and profound anæmia. Pellagra in Egypt may, I think, be neglected except in so far as it indicates a severe anæmia caused in most cases by a parasitic infection. It is on these terms useful as a symptom, but has, I consider, no claim to be ranked as a disease.

I am, Sir, yours faithfully,

V. S. HODSON, M.B., B.Ch. Oxon., M.R.C.P. Lond.

Khartoum.

THE REGISTRATION OF THE MEDICAL STUDENT AND THE REGULATIONS OF THE GENERAL MEDICAL COUNCIL.

To the Editor of THE LANCET.

SIR,—"What to do with our boys" is as pressing a question now as ever it was, and parents have the same difficulties in guiding and guarding and finding openings for their precious charges as their forefathers most probably did in their own cases. Like many others just at this season of the year I had occasion to scan and puzzle over the regulations laid down by the General Medical Council for the registration of those lads who are seeking to enter the medical profession. With a view of making my arguments clear I have made the following extracts as embodying the principal regulations as to registration. As I understand them, they disclose a glaring anomaly upon which I should like the opinion of parents, masters of the great public schools, and of any others who feel an interest in the medical profession. Now for it.

> The course of professional study after registration shall occupy at least five years. .....
>
> *Every* medical student shall be registered in the manner prescribed by the General Medical Council. ..... Every person desirous of being registered as a medical student shall produce or forward to the Branch Registrar a certificate of his having passed a preliminary examination as required by the General Medical Council, and evidence that he has attained the age of 16 years, and has commenced medical study. The commencement of the course of professional study recognised by any of the qualifying bodies shall not be reckoned earlier than 15 days before the date of registration. In addition to the Universities and Schools of Medicine there are many institutions where medical study may be commenced.

Now I have looked out the first professional examination for the Conjoint Board, for the London University, and for Cambridge University, and find the subjects are confined to inorganic chemistry, physics, and biology. These are subjects which can just as well be studied at institutions other than medical schools as at them, and this has been recognised by the General Medical Council, as it allows study of these subjects at, amongst others, the Polytechnic Institute, Westfield College, Central Technical College, City of London College (day classes), and some others, but not at the great public schools.

Full of belief in the power of the General Medical Council to enforce its regulations, I wrote to the Registrar to ask him to register my son as a medical student, he having passed his London matriculation, and asking him (in my innocence) if St. Paul's School would be recognised as an institution in which the lad could work up for his next professional examination—viz., the Preliminary Scientific. His reply is:—

> DEAR SIR,—In answer to your letter, I have to state that as the Council does not approve of medical study until ordinary school education has ceased, it will not be possible for your son to be registered while he remains at St. Paul's School. He should begin study at one of the institutions on the enclosed list. Yours faithfully,
>
> March 3rd, 1910. H. E. ALLEN, Registrar

The only possible inference to be drawn from this reply is that I must either take the boy away from the school, or he cannot count the year towards the required five—an alternative altogether too serious for me to contemplate.

Of course, what applies to St. Paul's School applies to all the other great public schools up and down the country, and it has a very serious meaning to the parents of those boys at these public schools who are intended to enter the medical profession; who, having passed a preliminary examination in arts, wish to proceed to the purely science portion of their career while remaining at the school—they must take them away. It also has its serious side for the public schools. The authorities of most of these schools have gone to endless expense in fitting up the laboratories of the schools, and in appointing as instructors the most competent science teachers to be found, yet they are to lose these boys just when they are likely to be of credit to the school and most able to avail themselves of the material provided by the school. And the boys themselves, are they not also losers in being thus early thrust as it were into the turmoil of hospital life, in losing the discipline, individual attention, and compulsory attendance consequent on a prolongation of school life for another year or part of a year?

"Cui Bono?" Who does really gain by these regulations? Surely it is not the lad! I am afraid that as a parent I cannot appreciate the concentrated wisdom which produced these regulations, for it does seem grossly unfair that a public school boy who wishes to learn the scientific portion of his work at school, where the staff and equipment are admirable, should be penalised to the extent of losing that year in computing the necessary five years of study—that is, if the regulations I have quoted mean what they say. If they do, I am surprised that the public school authorities have not publicly protested against the arbitrariness (and to my mind foolishness) of regulations which are devoid of benefit to the boy, to the school, to the parent, and to the profession generally. If these regulations regarding registration do *not* mean what they say, and are not enforced or enforceable, the sooner the public and parents of boys intended for the medical profession know it the better.

I am, Sir, yours faithfully,

RICHARD BEVAN, L.R.C.P. Lond., D.P.H.

London, Sept. 1st, 1910.

*** Our correspondent sets out very clearly one side of a difficult question which has been much discussed in our columns.—ED. L.

AN INTERESTING CASE OF APPENDICITIS.

To the Editor of THE LANCET.

SIR,—I venture to send you a history of what happens to a poor devil now and again in regions so far unblessed by the presence of specialists.

More or less a fortnight ago, at 5 P.M., after an ordinary day's work with cases of neurasthenia, syphilis, gonorrhœa, nephritis, lung, heart, skin, &c., the writer was called to see a young German, said to be suffering from colic,

the result of having eaten cucumber salad for lunch. Up to that afternoon he had felt well and had attended his place of business daily without fail, being in the opinion of his friends a marvel of health, as he boasted never to have had a day's sickness in his life. At my visit he complained of nausea and some epigastric distress. His pulse was 72, full, of normal tension; temperature 37° C., respiration 20 per minute. Examination revealed nothing to indicate serious trouble, but as he was somewhat constipated, more to fill a formula than otherwise, a purgative enema was prescribed, to be followed after evacuation by a teaspoonful of paregoric, and the remark, made jestingly, that perhaps to-morrow he might show signs of an appendicitis, and so be *à la mode*. Later in the evening, on inquiring by telephone, information was received that the patient felt much relieved, but would be pleased to have a professional visit next morning.

August 22nd, 7 A.M.: There was found epigastric pain instead of merely distress radiating towards the right iliac fossa and umbilicus; actual vomiting instead of only nausea, but the vomit was not really bilious; temperature, 38·5° C.; pulse 90, of good character; abdomen slightly tympanitic, but no tenderness appreciable over McBurney's point, nor *evidence of muscular defence*. Ordered ice-bag over the right lower abdomen, and promised to call later. At 11 A.M. there was found a swelling deeply situated in the appendical region, apparently about the size of a hazel-nut. Pain was more diffused, but more concentrated over the appendix, and one could appreciate a slight muscular resistance in that region. Diagnosis, "commencing appendicitis," and the writer flattered himself that he had rivalled his friend, Professor Dr. Sprengel of Braunschweig, one of the most modest, but at the same time ablest, surgeons in the German Empire, in a diagnosis *præcox*. Recently he had seen the German *savant* make a diagnosis of appendicitis in a case in which he could not find the slightest grounds, but which an immediate operation proved correct. Preparations were made at once for the operation, and in an hour or two all was ready. The incision chosen was the "para-iliac" of Jalaguier, drawing the skin well over the ilium, so that the cut through the transversalis, &c., might not correspond with the cutaneous opening. When opened the peritoneal cavity was found to have formed a pouch, occupying the right iliac fossa, containing an encysted mass of intestines matted together. The ileum in spots denuded of its epithelium, the cæcum with flakes of pus scattered over its superficies, and behind, bound down by adhesions, lay the appendix vermiformis, swollen, and completely sphacelated, 4 centimetres in diameter and 10 in length. No isolation was possible. At the proximal end, that nearest the cæcum, could be felt a small foreign body which in the necessary and difficult manipulations undertaken to ligate and remove the putrescent mass, escaped capture. The appendix was tied off in three portions, first including the meso-appendix with artery and the highest point of the gangrenous organ in a mass ligature, the stump actually being more cæcal than appendical. This was sterilised by cautery and closed with three sutures, and after cleansing as far as possible the cavity, the wound was half closed in superimposed layers, an aseptic gauze drain was left down to the site of the appendix, and the pouch lightly packed with the same. After arranging a snug abdominal bandage the patient was put to bed. Temperature 37·5° C., pulse 120. The after-history so far as the convalescence is concerned has scarce any importance, yet the following verbatim notes taken by the surgeon himself (as we have no "trained" nurses) may be of interest.

During the operation the patient's wife was taken in labour with her first child, and at 3 A.M. (23rd) gave birth to a fine boy, thus affording a spice of variety to the surgeon.

To return to the husband. He was given at once 5 centigrammes of ext. opii, and not allowed food nor drink for 24 hours, only being permitted to rinse his mouth with iced Vichy water. He passed a comfortable night, with neither pain nor vomiting, but without sleep.

August 23rd, 9 A.M.: The gauze packing and drain removed. Fæcal odour marked, indicating probable fistula. Temperature 36·2°, pulse 88; passed flatus freely; same regimen; dorsal decubitus but permitted leg flexion. 24th: Dressing changed, removed packing but replaced gauze drain. Stercoral odour pronounced and some discharge like meconium. Coffee and milk for early breakfast and occasionally during day. Is taking 1 centigramme of opium ext. three times a day. 25th: Discharge slight but decidedly fæcal. Temperature 36·9° C., pulse 76. Removed drain and found on its extremity the stercolith which had been felt at the operation, but which had evidently escaped into the cæcum. Substituted rubber drain of 1 centimetre calibre. Suspended opium and ordered a gramme of calomel in two doses at half an hour's interval, to be aided opportunely by an enema of a solution of boracic acid. Milk and coffee for food and sips of wine and water. At 2 P.M. patient had a copious painless passage from the bowels. Temperature 36·5° C., pulse 76. Allowed extra pillow so as to half-recline towards the right and thus favour drainage. No desire for food; prescribed polyformiates. Icterus progressive; urine rather scanty and loaded with pink urates. 26th: Discharge from wound very slight, but fæcal in character. The wound has been irrigated every day with hydrogen peroxide and looks healthy, with fine strong granulations. Urine same and icterus also. 27th, 3 A.M.: Chill; temperature 38°; some intestinal distress. Ordered purgative enema; good result. At 9 A.M. condition good; temperature 36·9°. At dressing evidence of fistula almost *nil*. May close spontaneously. At 7 P.M. enormous stool unprovoked, containing residues of matters ingested a week ago. Urine beginning to clear and increase in quantity. 28th: Removed tube, as there is absolutely no discharge; temperature 37° C.; pulse 70; appetite fair; icterus almost disappeared. 29th: Nothing of importance. Certain that fistula has closed. 31st: Patient allowed to leave bed and lie on *chaise longue*. Appetite good and general condition magnificent.

Sept. 1st: External wound closed without secondary suture. Baby paid quite a long visit to his papa, whom we expect to allow downstairs to visit his wife in a day or two. Sept. 4th: Has been carried downstairs. His wife also out of bed. Everything and everybody well.

Résumé.—1. We have here a fresh indication to operate in cases of appendicitis as soon as discovered. The writer mistook in this case the stage of the disease, though he cannot see how he could have helped it. But had he resolved, thinking it a beginning case, to treat it as many advise, medicinally, and wait an opportunity to operate *à froid*, where would he and his patient have been? 2. There is demonstrated the almost constant preference to be given to the oblique iliac incision of Jalaguier over the vertical, whose sole claim for consideration, in most cases, is that by opening the sheath of the rectus a firmer cicatrix is obtained. The oblique incision made as described, with the underlying tissues cut in different planes, gives as firm a cicatrix as can be desired, and, besides, the seat of the evil is at once disclosed. 3. There is shown the beneficent effects of the encystment, which Lejars insists is the tendency in all cases of appendicitis, though, unfortunately, not always found so complete as in the case above described. Without a doubt this provision on the part of nature saved the patient, however much it added to the difficulty in operating. 4. The advantage of opium given after such an operation is worthy of attention. Given judiciously it aided in repair, and did not in the least prevent the elimination of toxins through the liver, as shown by the icterus. 5. The post-factum evidence of intestinal partial paralysis, given by the stool of the morning of the 27th, shows the care nature takes of an injured or inflamed bowel, by holding back the passage of even food. (See experiments after bismuth meals in intestinal surgery by Cannon.) 6. The imminence of a fæcal fistula following when the obstruction in the appendix exists near or at its proximal end. In the above case the meso and appendix were ligated *en masse*, and after sterilisation the serous membrane was stitched over the stump of the cæcum, one might say, with full expectation that the stitches would not hold in the semi-friable tissues. Evidently they did not as a whole, but something probably was gained by this extra care, as the fistulous opening, being so much the smaller, closed of itself. 7. The advantage of giving nothing to eat or drink after such an operation, thirst being assuaged by rinsing the mouth for at least 24 hours, was shown; and also (8) the use of peroxide of hydrogen for irrigation and for facilitating the removal of gauze packing.

The anæsthetic used was Merck's chloroform, by the Edinburgh method, on an Esmarch mask. The writer is too old to take kindly to new-fangled apparatus or newly-discovered means. In over 30 years' practice, and a few

thousand administrations without a serious accident, why should he? He believes that more depends on the man than on the method, and when a peculiar case turns up, and he has more faith in his assistant as a surgeon than as an anæsthetist, he gives the chloroform himself and lets the aide have the bistoury.

I am, Sir, yours faithfully,

Guatemala, C.A., Sept. 8th, 1910. J. H. ARTON.

ON THE NOTIFICATION OF CONSUMPTION.

To the Editor of THE LANCET.

SIR,—In reply to "Forensicus" in your issue of Sept. 10th, I should like to state that the questions I put to him were not meant to puzzle, but to show that the compulsory notification of consumption was not only impracticable but impossible, apart from the difficulties that would require to be contended with if it was impartially enforced on all classes of the community. "Forensicus" seems to foresee this for himself, for he pleads for compulsory notification "according to circumstances."

It is possible in the near future that we shall see the advocates of compulsory notification attempting to justify themselves by a resort to statistics, but these statistics must be looked upon with suspicion. It may be attempted to show that in towns where compulsory notification has been adopted the disease has decreased in consequence. Although that may appear from statistics to be the case, it will be found to be due in a great measure to evasions resulting from the desire of the consumptive to avoid the stigma and ostracism which have been found to follow public notification.

Between scarlet fever and consumption there is—for reasons which it is unnecessary here to state—virtually no analogy, and therefore to cite scarlet fever in support of his contention is not relative to the issue, beyond stating that the compulsory notification and isolation of that disease have not controlled its incidence even where they have been most rigorously carried out. But for the campaign against consumption—ill-considered in many of its aspects—and arising chiefly out of a desire to secure public moneys for the support of sanatoriums, it is doubtful if the question as to the necessity for the compulsory notification of this disease would ever have arisen.

Under certain conditions I do not doubt the possibility of consumption being conveyed from person to person, but I hold that it is virtually impossible for it to be conveyed under ordinary hygienic conditions or by mere contact. Hence the unwarrantable and exaggerated statements which have been made and reiterated in the daily press as to its infectious nature are to be deprecated not only from the point of view of the sufferer from tuberculosis, but even in the public interest. Unfortunately, the matter is not to end with these panic articles in the press, for we are soon to be confronted with huge blatant posters fixed on every available hoarding, depicting in language of hyperbole the ravages and infectious nature of consumption.

The terrors of compulsory notification of consumption have not been exaggerated. Even without such a measure there are employers who have dismissed servants suffering from consumption, or compelled them to take a prolonged holiday for no other cause than the fear of infection, with the result that the consumptives have been reduced to penury. Further, professional and business men who are known to be suffering from tuberculosis are eschewed in public. Nor does the matter end here even. Mothers have become afraid to stand by the bedside of their own children, and in other instances the consumptives have been virtually cut off from all intercourse with their own families. Yet I venture to say that few, if any, medical men have ever seen a case of consumption follow another in the same family, living under reasonable sanitary conditions, that could not be satisfactorily accounted for in another way than by contact. The causes of consumption are so complex.

The campaign against consumption has ended in a war against the consumptive. The initial objects in that campaign have been for the most part discarded. The consumptive as a consequence is being repelled instead of being attracted to seek advice at a time when it is possible to bestow upon him lasting and material benefit. Let "Forensicus" as a layman take it to heart that the consumptive needs compassion, for he is a sensitive and introspective person. He can be led, but not forced. Finally, let "Forensicus" *as a layman* understand that the incidence or death-rate from consumption in its broadest sense in any country is but an index of that country's sanitary state and the material welfare of its people.

I am, Sir, yours faithfully,

J. CUNNINGHAM BOWIE, M.B., D.P.H. Glasg.

Cardiff, Sept. 26th, 1910.

DIFFICULT LABOUR: A CORRECTION.

To the Editor of THE LANCET.

SIR,—I am much obliged to Dr. Herman for his very courteous correction of the mistake I made in reviewing the last edition of his "Difficult Labour." I am in entire agreement with his view that to attempt to stop hæmorrhage from the uterus by applying a "drug" to the vagina is absurd. My mistake is the more inexcusable since I read the passage over twice before remarking on it.

I am, Sir, yours faithfully,

Sept. 27th, 1910. THE WRITER OF THE REVIEW.

"FALLING OF THE WOMB."

To the Editor of THE LANCET.

SIR,—Since sending you the MS. of my article on Procidentia I have obtained notes of two cases which I had previously failed to trace. Will you please publish them as an addendum to my paper and oblige,

Yours faithfully,

Leeds, Sept. 22nd, 1910. JOHN B. HELLIER.

CASE 32.—VIII.-para, aged 52; procidentia for nine years. In December, 1907, anterior and posterior colporrhaphy, with vagino-fixation, were performed. I saw her on July 29th, 1910, and found the result excellent.

CASE 33.—VI.-para, aged 53; severe case of procidentia, with cystocele. Cervix hypertrophied and ulcerated. Sound 4¾ inches. In January, 1908, I performed anterior and posterior colporrhaphy, with amputation of 2½ inches of the cervix and vagino-fixation. On March 10th, 1910, she was reported cured, with no symptoms to complain of.

THE ACTION OF 15 TO 50 CUBIC CENTIMETRES OF CONCENTRATED ALCOHOL ON THE MEMORY.

To the Editor of THE LANCET.

SIR,—So many recent publications on the evils of alcohol are conspicuous for their logorrhœa, bolstered up by second-hand observations and arguments, that it is a relief to turn to such a concise work as R. Vogt's in the June number of *Norsk Magazin for Lægevidenskaben*, 1910, in which the writer gives his personal experience of the influence of alcohol on the memory. His experiments lasted for over six months, and every precaution was taken to avoid fallacies. He chose himself as a subject, being healthy, middle-aged, a total abstainer for the ten preceding years, and without any idiosyncrasy for alcohol. To test (*a*) the mind's power of assimilation and (*b*) the mind's power of reproduction, 25 lines of a translation of the Odyssey were selected every time for their uniformity of length and the absence of refrain. The time taken to learn these lines by heart was noted, as well as the time taken to repeat the same a certain number of times by heart, the rate at which these repetitions could be made being taken as an index to the thoroughness with which the lines had been learnt. The day after the lines had been learnt most were forgotten, but they were quickly relearnt, the mind's power of reproduction playing a greater part than its power of assimilation. The time therefore taken to relearn the 25 lines was taken as an index to the mind's reproductive power. The trials were all carried out in the morning, a quarter of an hour after breakfast, before the day's work had begun. Stimulants, such as tea and coffee, were taken in moderation. The alcohol was taken from 10 to 15 minutes before the trial began and was diluted with fruit juice, which was also drunk on the mornings when no alcohol was taken. The published tables show that 25 cubic centimetres of concentrated alcohol at first considerably prolonged the time taken to learn 25 lines, but that after a month and a half this effect became less marked. Later, when the alcohol was given on an empty stomach even

quantities as small as 15 cubic centimetres of alcohol prolonged the time of learning considerably, as the second table shows.

TABLE I.

Alcohol taken after breakfast.	Number of experiments.	Average time taken to learn 25 lines by heart.	
		min.	sec.
Jan. 20th–March 3rd { Days without alcohol	15	25	58
Jan. 20th–March 3rd { ,, with ,, (25 c.c.)	6	30	35
March 5th–April 28th { ,, without ,, ...	13	21	26
March 5th–April 28th { ,, with ,, (25 c.c.)	10	22	31
April 30th–June 15th { ,, without ,, ...	14	17	57
April 30th–June 15th { ,, with ,, (25 c.c.)	8	19	12
,, 12th–April 20th ,, ,, ,, (50 c.c.)	2	24	48

TABLE II.

Alcohol taken before breakfast.	Number of experiments.	Average time taken to learn 25 lines by heart.	
		min.	sec.
June 17th–August 1st Days without alcohol	10	18	2
,, 19th–June 27th ,, with ,, (25 c.c.)	3	30	35
July 1st–July 30th ,, ,, ,, (15 c.c.)	4	22	59
,, 19th ,, ,, ,, (30 c.c.)	1	38	50

The alcohol taken after breakfast increased the required time by 5 to 7 per cent.; when it was taken before breakfast the time was increased by 69 per cent. The influence, too, of 50 cubic centimetres of alcohol taken after breakfast was less than that of 25 cubic centimetres taken before breakfast. After some months' practice the time required to learn 25 lines by heart was reduced by about one-third, whether alcohol was taken or not. Not only did the alcohol lengthen the time taken to learn 25 lines by heart, but it also lengthened the time taken to repeat by heart the same lines a given number of times, and from this the writer concludes that the lines could not have been so thoroughly learnt under the influence of alcohol. Each lot of lines which had been learnt by heart from Jan. 20th to April 16th were again learnt by heart 107 to 108 days later, when no alcohol was taken. The shorter the time taken to relearn these lines the better must have been the mind's power of assimilation on the first occasion. It was found that those lines which had been learnt under the influence of alcohol took an appreciably longer time to relearn than the others. The table illustrating this point also shows the interesting fact that, after excluding the alcohol days, those lines which after practice in learning by heart took a short time to learn on the first occasion took longer to relearn than those which had cost more time at the first—in other words, "quickly come, quickly go." Since A. Smith's well-known experiments on the influence of alcohol on the memory little work has been done in this particular field, and though Dr. Vogt's results are merely confirmatory of Smith's, the former deserves our heartiest praise for the indefatigable energy which led him to inflict so many thousand lines upon himself in the cause of science.

I am, Sir, yours faithfully,

Sept. 26th, 1910. C. L.

POOR-LAW REFORM: THE COMMISSION'S TWO REPORTS.

To the Editor of THE LANCET.

SIR,—The issue of two conflicting reports by the late Commission has, no doubt, been useful in increasing the interest in the important subjects dealt with. But are not the medical profession, like many other people, taking the details of these conflicting schemes too seriously? When we consider carefully the *personnel* of the Commission we can only regard one report as a judicious compromise by men and women possessed of strong and very diverse views, and the other as the work of a very small body of people whose strong views are not generally acceptable to the community. This being so, it seems extremely improbable that any proposals put before the country by Parliament will coincide with those contained in either report, whether in the form in which they are printed or in the various modifications which we are from time to time informed by their supporters have since been accepted by the authors. But the waste of time entailed in blessing or otherwise one or other of these reports is not so serious as the tendency caused by these essays in partisanship to divide the profession into different camps. It will take us all our time to think out, and agree upon, the best way of arranging the medical treatment of the poor so that the poor shall be properly treated and the doctors be properly paid, which are after all the two main ends upon which we as a profession are called to express an opinion. We cannot afford to follow the example of some laymen engaged in this controversy and seek out the private and political opinions of our colleagues in order to discredit their proposals. Even a *free trade* doctor may be expected to *protect* the interests of the poor, and the most Fabian *Socialist* may generally be trusted to look after his *individual* fee. Time presses, and all unnecessary points of personal controversy must be neglected if the profession is to have its proper influence in shaping Poor-law medical reform.

I am, Sir, yours faithfully,

Sept. 23rd, 1910. PROFESSIONAL UNION.

A VISIT TO THE MUSKOKA SANATORIUMS FOR TUBERCULOSIS.

(FROM A SPECIAL CORRESPONDENT.)

BY the invitation of Mr. W. J. Gage of Toronto, chairman of the executive committee of the National Sanatorium Association of Canada, I visited the sanatoriums for the treatment of tuberculosis at Muskoka.

The Muskoka Lake District.—How the Sanatoriums are Reached.—Their Origin.

The Muskoka Lake district is situated at a distance of 112 miles or so from Toronto. I got on a mid-day express of the Grand Trunk Railway at Toronto, and although a strike was in progress among the workers of the railway, the train travelled smoothly and at a moderately rapid rate. The scenery of the first 50 miles of the route is placid and somewhat uninteresting, but after Lake Simcoe has been sighted the country begins to take on a wilder aspect. On Kempensfeldt Bay, an inlet of Lake Simcoe, ten miles wide, are the towns of Allandale on one side and Barrie on the other. The train makes a detour of the bay, passing within a few feet of the lake, so that one has the opportunity for judging of the remarkable clearness of the water, a characteristic of Lake Simcoe, for which it is widely famed. When the train leaves Barrie a really lovely country is passed through. Glimpses are caught here and there of lakes and streams shimmering in the sun, and forests and rocks border the line on both sides. At length the train pulls up at Muskoka Wharf, at the foot of Lake Muskoka, the most southern of the three large lakes of the district, and what may be termed the entrance to the Muskoka region proper is reached. The region comprises an area of about 10,000 square miles, and is perhaps the most picturesque part of the Province of Ontario. Within this district, which has a mean altitude above the sea of 800 feet, there are nearly 1000 lakes and ponds, connected by innumerable streams. The chief lakes are Muskoka, Rosseau, and Joseph. The region abounds in pine forests, and the soil is of a rocky porous nature.

On leaving the train at Muskoka Wharf I made it my business to discover a launch, which I had been informed plied between the sanatorium and the wharf for the purpose of conveying patients and visitors to and fro. I did not find the launch, but I came across Dr. W. B. Kendall, the physician-in-chief of the sanatoriums, who had come with his speedy gasoline boat to fetch some friends. I gave him the letter of introduction I carried and was quickly in his boat, which can travel at the rate of about 20 miles an hour. The Cottage Sanatorium to which we were bound is some

two miles from the wharf, and it took us but a short time to reach our destination.

The Muskoka Cottage Sanatorium.

There is, and has been for a long period, much pulmonary tuberculosis in Canada, and in 1896 the National Sanatorium Association was founded, the pioneer association of its kind in Canada. Its object is to provide institutions for the isolation, treatment, and cure of persons affected with pulmonary tuberculosis. The Muskoka Cottage Sanatorium was the first institution to be established under its auspices, and is for the treatment of those suffering from incipient tuberculosis.

The main building of the Cottage Sanatorium, the one of which I first caught sight when our boat slackened speed and drew up at the landing, is a striking landmark of Muskoka Lake. It is a large roomy wooden building, its front faced by wide verandahs and surmounted by a tower overlooking Muskoka Bay. It stands on a height, and together with its cottages is placed in a park of 75 acres, chiefly consisting of pine forest. It is sheltered from the north and north-west winds by rocky ridges and pine trees. From the standpoints of scenery, air, and soil the situation seems almost ideal for its purpose. The air is very clear, the mean relative humidity is 70 to 75, and the mean average temperature is 42° F.; the district is very rocky and the soil porous and dry.

The administration building (Fig. 1.) was erected at the joint expense of Mr. W. J. Gage and of the late Mr. Hart A. Massey, both of Toronto, and was opened in 1897 by Dr. H. Barnes, then president of the British Medical Association, which had just met in Montreal. Dr. Kendall shortly after my arrival showed me through the building. It will accommodate 20 patients and contains the sleeping apartments of the management and service of the institution, the household and medical staff offices, the laboratories, the dispensary, reception-room, music-room, and dining-room. There are sun chambers for patients who cannot sit outside on stormy days. I was favourably impressed by the roominess and comfortable appearance of the whole building, and especially by the laboratories, which form a very prominent feature of the institution. Dr. Caulfield is in charge of the laboratories, assisted by Dr. Beattie, and some valuable investigations have been, and are being, undertaken chiefly in studies of complement deviation with a view to the discovery of immunising methods. A collection of animals is kept for the purpose of experimentation and Dr. Caulfield informed me that he intended to make use of young pigs with this object in view. I am happy to be able to state that all the animals looked well and contented and did not seem to have suffered in any way as a result of the use which had been made of them.

The Muskoka Cottage Sanatorium is really a colony for consumptives, and reminded me both with respect to situation and management of another colony for consumptives at Lake Saranac in the Adirondack region of New York State. As at Saranac, the majority of the patients are housed in pretty cottages, built at the expense of private individuals, which are dotted about within easy reach of the administration building. These cottages contain from two to eight sleeping rooms each, and are, of course, one and all fitted with spacious verandahs. The cottage system was established for the sake of ensuring privacy, and also because the patients who live in cottages are not embarrassed by the feeling of restraint and confinement which is apt to oppress those who are massed together in considerable numbers in one building, however large that building may be.

Many patients live in tent cottages, small roofed wooden buildings, which can be occupied by one or two persons. Other patients occupy what are known as "shacks." A building of this kind, designed by Dr. Kendall, is a long one-storey building with entrance in the centre, which opens into a fair-sized room provided with lavatory accommodation, and which is so furnished that it can also be used as a sitting-room. On either side of the sitting-room are placed the sleeping cots. The front of these shacks from the top to within a short distance from the ground has glass shutters which can be opened or closed as the medical attendant may think fit. The accompanying illustrations will convey a good idea of the appearance inside and out of the shacks. (Fig. 2 and Fig. 3.)

It should be mentioned that all the patients of the Cottage Sanatorium have their meals in the large dining-room of the administration building at numerous tables which will each seat from four to six individuals. The food is plentiful and wholesome, but the over-feeding plan is not followed at Muskoka. I partook of meals with the patients and can therefore vouch for the good quality of the food. I likewise slept in a cottage reserved for patients, and can also give testimony as to the comfort and healthfulness of the sleeping quarters. Each patient has a separate room, but there are several large bedrooms, so that if desired two patients may share a room.

Indoor and outdoor amusements at the sanatorium are many. Muskoka Bay is well suited to boating of every description, and fair partridge and rabbit shooting is to be had. In the winter snow-shoeing, tobogganing, skating, and driving are the favourite forms of exercise. There is also a shooting club amongst the patients, and the sanatorium possesses an excellent billiard room.

The medical staff of the Cottage Sanatorium consists of a physician in chief and two medical men who devote their attention largely to laboratory work. The resident nursing staff is fully adequate to the ordinary needs of the institution, but, if required, special nurses can be secured. I noticed that several of the permanent nursing staff were British, and was pleased to learn that nurses of British birth are in request at Muskoka.

The Muskoka Free Hospital for Consumptives.

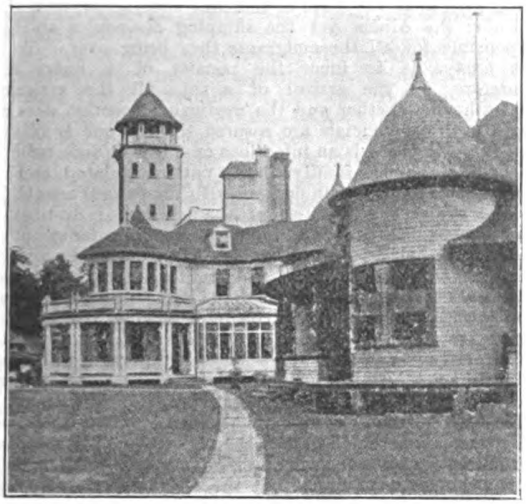
At a distance of about one mile from the Cottage Sanatorium (Fig. 4), nearer to the railway and to the town of Gravenhurst, is situated the Muskoka Free Hospital for Consumptives. The main buildings are of wood and are located on a rocky ledge above the lower part of Lake Muskoka. The buildings are large and rambling and have been added to as necessity and convenience dictated, and from the very incoherence of their architecture they present an extremely picturesque outward appearance. The sanatorium faces west and south and is protected from the north and east winds by thick pine woods. The matron of the institution accompanied me to every part and was most courteous in explaining matters. The main building contains four eight-bed wards, one of five beds, and one of four, and the patients were mostly women. The wards are lofty, well-lighted, and in the nature of things airy and well ventilated; they are also provided with wide verandahs. The bathroom and lavatory accommodation is adequate. The heating is by steam and the lighting by electricity. There are, in addition, in the main building a reception-hall and sitting-room for patients, physicians' office, throat-room, dispensary, laboratory, and staff quarters; and in a detached annex there are dining-room, pantries and kitchen, and servants' quarters. Another building contains the ice house and cold storage chambers. Most of the male patients reside in shacks, which in all essential details resemble the one already described. The basis of the treatment is open air, and it has been demonstrated that these shacks best fulfil the required conditions.

As at the Cottage Sanatorium the food is wholesome and provided without stint. I saw the patients at dinner at the Free Sanatorium, and remarked that with very few exceptions they seemed to enjoy the meal heartily. The patients are encouraged to take exercise and to do light work. Gardening is a favourite diversion with them, and I was greatly interested in the poultry-raising experiments which are conducted under the direction of a patient. I was shown over the "hennery," as it is termed, and was astonished at the success achieved in rearing chickens under somewhat adverse circumstances. Hawks are plentiful, and of course are a source of danger to the young fowls, but rats which are very numerous are a far greater peril. However, the guardian of the fowls is provided with a gun and with traps of great variety with which to fight the enemy, and his results may be gauged by the fact that he has nearly 1000 fowls in his enclosure, and that the institution is supplied with poultry and eggs from the "hennery."

General Remarks.

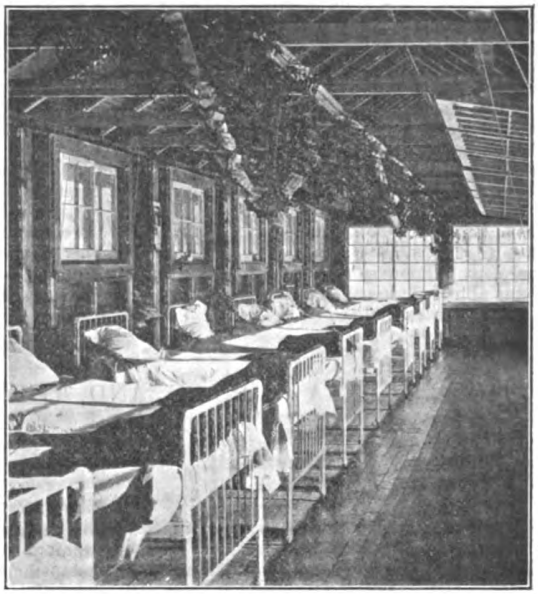
The Cottage Sanatorium is for paying patients and the prices are moderate. The Free Sanatorium, as its name implies, is more or less free. However, as is the case in all public institutions on this continent, if a person can afford to pay for treatment or care he does pay. Consequently, at the

FIG. 1.



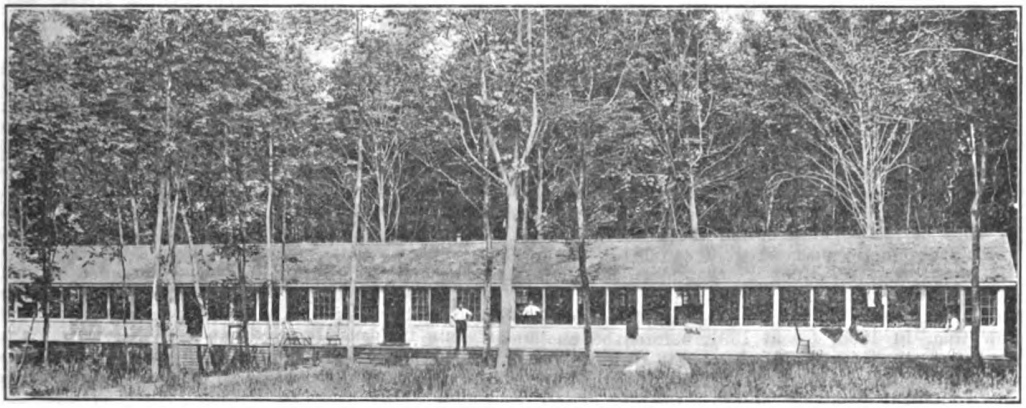
Administration Building, Muskoka Cottage Sanatorium.

FIG. 2.



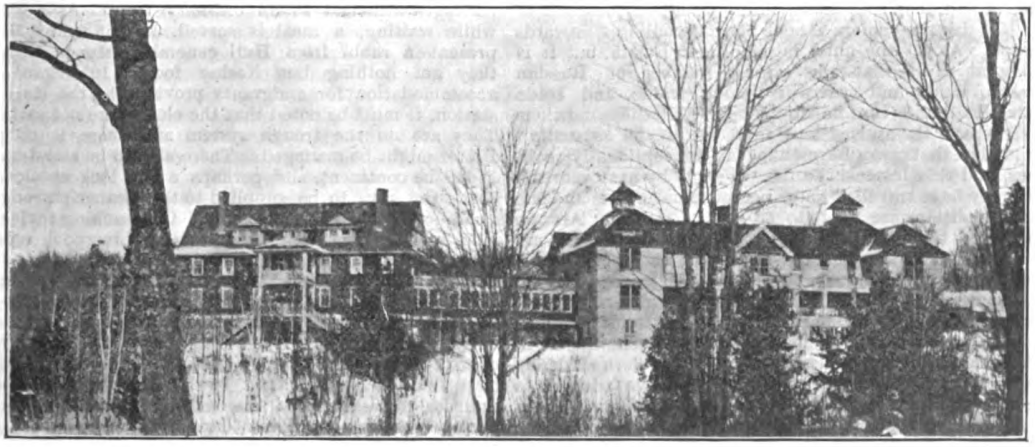
Interior view of a "shack."

FIG. 3.



Exterior view of a "shack."

FIG. 4.



Muskoka Free Hospital for Consumptives, Gravenhurst.

Free Hospital for Consumption at Muskoka a large number of the inmates pay whatever sum may be within their power towards the upkeep of the institution. The Free Hospital will accommodate more than 100 patients and is always full to overflowing. The Cottage Sanatorium will hold about 75 patients, and it is rather curious to note that the favourite sanatorium season at Muskoka is in the winter, when the temperature is frequently 20° F. below zero. The physician-in-chief visits the Free Hospital every day, and there is besides a resident medical man. It may be stated that the Free Hospital was opened in 1901 and that the results of treatment therein and at the Cottage Sanatorium have been very encouraging. After an instructive and interesting visit I travelled to the railway depôt by the omnibus in which patients are conveyed to and from the train. I am convinced that few situations can be better for the treatment of incipient pulmonary tuberculosis than Muskoka, and so far as I was able to judge the management of the two sanatoriums I visited leaves little to be desired.

THE CHOLERA MENACE AND THE RESPONSIBILITY OF HULL.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Hull, Sept. 23rd.

IT will be remembered that when, in 1892–3, the last great cholera epidemic spread throughout Europe, reaching from Hamburg to Marseilles and from Calais to Constantinople, the only towns affected in England were Grimsby and Hull. Some isolated cases of cholera occurred even in inland districts, but there were 35 cases at Grimsby, resulting in 21 deaths, and 17 at Hull, causing 12 deaths. These cases were all the more menacing as it was easy to show that most of the patients had been living in very insanitary surroundings, but there was no such clear evidence of contamination imported from abroad. It seemed as if the diarrhœa and the choleraic diarrhœa which then prevailed in an epidemic form might be the forerunners of an epidemic of genuine Asiatic cholera. Thus at Hull, from Sept. 6th to Oct. 20th, 1893, out of a population of 208,639, the 17 cases of cholera resulting in 12 deaths were notified, together with 137 cases of choleraic diarrhœa, giving rise to only 4 deaths, and 396 cases of diarrhœa causing 112 deaths—altogether 550 cases and 128 deaths. The death-rate from diarrhœa in 1893 was 2·27 per 1000 of the population, and the deaths from the seven principal zymotic diseases were equal to 4·01 per 1000. Last year, that is in 1909, the deaths from diarrhœa were only equal to 0·59 and from the seven zymotics to 1·35 per 1000. These figures do not, however, imply that we are safer now than in 1893, for in 1891, before the cholera epidemic began, the zymotic death-rate at Hull was only 1·61 per 1000 and the deaths from diarrhœa 0·60 per 1000. There was a slight rise in 1892 and then the high figures of 1893 were reached, and they constituted the maximum of the last 20 years.

The exceptional heat of the summer in 1893 was doubtless the chief cause of the extensive prevalence of diarrhœa, but it also gave rise to the fear that it would favour the importation of cholera and that Hull and Grimsby would be the doors of entry. To-day the cholera is once more travelling westwards in Europe. As yet the chief mischief is in Russia, but it is precisely at Hull that the largest number of Russian emigrants land, and there is much traffic and trade between Hull and the Baltic ports. Will the conditions of 1893 repeat themselves and shall we escape as easily? It is true that we have had an exceptionally cold summer, and this lessens the danger; but by next year the cholera may have travelled much nearer to our coasts and the climatic conditions are likely to be less propitious. Are we better armed to resist an invasion than we were 17 years ago? It would be very unsafe to rely on the fact that we escaped from serious injury on the previous occasion. So much depends on hazard. An accident may defeat the best precautions, though the better the precautions the less likely the occurrence of such an accident. The question, therefore, that the virulence of the Russian cholera epidemic forces upon us to-day is whether our defensive position is stronger now than in 1893. In answer it may be confidently asserted that, so far as the first precaution to be taken is concerned, we are distinctly in a stronger position. In 1893 the Aliens Act was not in force. This law was not meant as part of our sanitary legislation, but incidentally its application greatly facilitates the medical examination of precisely that class of incomers who are the most likely to bring with them the seeds of cholera.

Under the Aliens Act the shipping companies are held responsible for all the emigrants they bring over. To let one escape is to incur the penalty of a heavy fine. Therefore, on the arrival of a ship all the emigrants are gathered together and the medical inspection does not begin until the officials are assured that no one is missing. Of course, if there is an infectious case it is at once removed to the hospital, the family of the patient isolated, and any persons who have been in contact with the patient are notified to the sanitary authorities of their place of destination. Special care, of course, is now taken in watching for symptoms of cholera. Of the numerous and international crowd of patients treated at the Hull Hospital for Infectious Diseases it appears that the Lascars make the best patients. They are also very grateful. When, on a following voyage, they return to Hull they make a point of going to the hospital and by signs and bows endeavour to express their thanks. Chinamen also make very good patients if nothing is done to offend them. Unfortunately it often happens that some ignorant person indulges in careless, silly remarks, especially about the pig-tails, and if a Chinese patient thinks he is not treated with proper respect then it is difficult to manage him. But the real trouble, and at the present moment the special danger, is in respect to the poor immigrants from Russia. It is true that they are for the most part transmigrants and are merely landing at Hull on their way to Liverpool or Glasgow, where they are to sail for America. Formerly some of these poor people did not have a through ticket, or had been robbed at Hamburg and landed penniless at Hull under the impression that in England the streets were paved with gold. They might be seen wandering about the streets in the hope of obtaining some help. To-day, with the Aliens Act in force, this is no longer possible. Shipowners are very careful not to allow anybody to embark for an English port unless he is in possession of money or a transhipment ticket. Thus it would be difficult nowadays to meet with a stranded emigrant; and though efforts are made occasionally to sell false tickets to ignorant people, all the shipping companies are interested in preventing such fraudulent practices and securing the severe punishment of the culprits. The immigrant who lands in England must prove that he has money and give a satisfactory explanation about himself. Though this was intended to exclude undesirables and to prevent foreigners becoming paupers as soon as they landed, it will easily be understood that it also, if only incidentally, serves to keep better watch over the persons and health of these new arrivals and thus see that they do not introduce such diseases as cholera into this country.

The emigrants who are going on farther are placed in vans or wagonettes and taken to the large sheds and waiting-rooms built purposely for them by the side of the main railway station at Hull. If they are numerous enough a special train is made up for them; if not, they have special carriages attached to an ordinary train. As a rule, and while waiting, a meal is served, and if many Jews are present a rabbi from Hull generally attends to see that they get nothing but Kosher food. In regard to the accommodation for emigrants provided at the Hull railway station, it must be noted that the closets are not satisfactory. They are on the trough system and there is no privacy. Better might be managed. There should be stand-up closets as on the continent, and perhaps a few lock-up closets with seats, the keys to be supplied to the cleaner passengers at a charge of perhaps a halfpenny. On reaching their destination, which in the majority of cases is Liverpool, representatives of the shipping companies meet the train and convey the passengers on board or to lodging-houses specially prepared for them, where they remain till their ship starts. Thus, it will be seen that both the emigrant and the transmigrant are much more carefully looked after and watched than was the case 17 years ago. This, however, is only our first line of defence, and by far the weakest line. No frontier, however keen the watch; no quarantine regulations, even, as in olden days, when prolonged to the

uttermost and cruelly applied, ever succeeded in excluding all disease carriers, whether these were objects or persons. Ships from Russia may be ever so strictly examined at Hull; passengers from Russia coming by Norway and Sweden, or through central Europe, and landing, for instance, at Dover, pass along with others and are not made the objects of special medical examination.

Our next line of defence depends on the perspicacity and promptitude of every medical practitioner in the country. On him rests the responsibility of detecting the first case and of bringing the whole of the sanitary machinery to bear upon it without the loss of a moment. Very probably the fact that this was done with military discipline and lightning speed at Hull in 1893 explains why the sparks of epidemic were so successfully extinguished. Within an hour of notification the patient and his family would be removed and isolated, his dwelling and the drains disinfected. It is doubtful if even after all this time for preparation there are many authorities so well equipped and able to act with the promptitude displayed by the Hull sanitary staff in 1893. In any case, and however perfect this second line of defence may be, it may fail and cases go undetected. Also there is the possibility that persons are carriers of the germs of cholera without being themselves sufficiently affected to attract notice. Thus we are driven back to our third, and by far and away the most important, line of defence, and that is the general sanitation of the country. How far we may rely upon this can scarcely be a question of doubt. We know, and know but too well, that many dangerous insanitary areas and conditions still remain which hold out a permanent invitation for epidemics to visit our shores. On the other hand, we also know that unwholesome places are neither so large nor so numerous as they were 17 years ago. Consequently it may be said that all the three lines of defence are stronger to-day than they were 17 years ago, but that nevertheless there is no absolute security. We are better prepared than in 1893, but we may perhaps not be so fortunate. Accidental circumstances may prove less in our favour.

In regard to general sanitation, though much has been done much remains undone, and this remark applies to the country in general and to Hull in particular. In 1893 the greater number of cases of cholera occurred in Amelia-place, Starch House-lane, and other small streets or courts not far off. This district, lying to the north of the Holderness-road, has not been much improved, but a large factory now occupies the actual ground where several of the cholera cases occurred in 1893. A considerable amount of work has been done since 1893, at which date a serious effort was made to apply the Housing of the Working Classes Acts at Hull. As a result 1030 dwelling-houses were condemned as unfit for habitation and 779 were completely demolished. The remainder were converted into warehouses or were suitably altered and repaired. Several hundred other houses that were of an unhealthy character have been pulled down to make room for street improvements, and owners have voluntarily demolished their insanitary houses so as to erect buildings more in keeping with modern improvements. Thus, it may be said that the sanitary condition of the town has improved. Yet, acting under the Notification of Births Act, the women inspectors' department reports that in 1909 "1276 houses visited (in 1909) were without backways, and the contents of the privy, when emptied, were carried through the house. This must undoubtedly be prejudicial to the health of all the occupants, but more especially so with young infants, whose rapid development during the first year of life calls for the purest atmosphere obtainable if health and vigour are to be secured." Though it is claimed that, under some pretext or another, something like 200 dwellings have been demolished every year during the last seven or eight years, it will be seen from this report to what a large extent houses without sanitary closets are still tolerated; indeed, there yet remain no less than 10,616 such houses in Hull, for the most part in crowded localities. Here excremental matter accumulates in the narrow yards at the backs of the houses, and when it is shovelled up into buckets and carried through the dwelling rooms to be emptied into a cart waiting in the streets this operation naturally causes a terrible stench. If the excrement remains in the privies it occasions a nuisance, and when it is removed it causes a still greater nuisance. If at any time cholera dejecta are thrown into one of these privies the nuisance will become a very serious danger. Obviously short work should be made of such conditions. Proper water-closets must be substituted for these privies, or the whole area condemned. Portable pails, or middens, or privies, or cesspools are all abominations. In any case, they should never be tolerated unless situated at some distance from dwellings, at the farther end of a garden or backyard, where there is a back passage, so that they can be emptied well away from the inhabited part of the premises. It follows that privies are in no wise suited for town dwellings, especially in poor and crowded districts. The fact that privies still survive, and this to the extent of several thousands in the poorest quarters of Hull, just where cases of cholera occurred in 1893, is somewhat disconcerting. Such weak places in our defensive armour may well engender apprehension, but justifiable fears will be of use in helping to bring about the much needed improvements.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

The Children's Hospital, Bristol.

THE numerous friends of the Bristol Royal Hospital for Sick Children and Women have been gratified by the intimation received from Sir Arthur Bigge that their Majesties King George V. and Queen Mary have been pleased to become patrons of the institution, thus joining with Queen Alexandra to continue the patronage bestowed for some years by the late King and his Consort.

Proposed Crematorium for Bristol.

At the last meeting of the Bristol city council the proposal to establish a crematorium in Bristol was defeated by two votes. That eventually the proposition will be carried can hardly be doubted, for at present Bristol is practically the only large city without means of cremation.

Barnstaple Education Committee and Treatment of Dental Defects.

At the last meeting of the Barnstaple (Devon) education committee Mr. J. R. Harper, the medical officer, alluded to the large number of school children suffering from defective teeth, and stated that he doubted whether the present arrangements made at the local infirmary would be sufficient to treat all the cases. Some of the committee advised that a sum of money should be voted to the institution for that purpose. One speaker said that it was impossible for ordinary subscribers to the infirmary to give "recommends" to all the applicants who required dental treatment, and he stated that it was a very serious matter for some of the poor who were suffering from illnesses and could not get "recommends" owing to the dental cases. Eventually it was decided to further discuss the subject in committee.

A Public Abattoir for Weston-super-Mare.

At a meeting of the Weston urban district council held on Sept. 21st it was resolved to purchase three acres of land, at a cost of £1500, for the purpose of erecting a public abattoir. The Local Government Board has been interested in the undertaking and quite recently had informed the Weston urban district council that it would decline to sanction any further loans until definite steps had been taken to provide a public abattoir and a refuse destructor.

The Prevention of Tuberculosis.

Earl Fortescue (the Lord Lieutenant of Devon) formally opened at Plymouth on Sept. 19th the exhibition which has been arranged by the National Society for the Prevention of Consumption in association with the education committee of the Devon County Council. There was a large gathering present, amongst others being the Earl of Mount Edgcumbe and several members of the clerical and medical professions. Dr. R. Hogarth Clay, in the course of an interesting address, stated that through the generosity of the Earl of Mount Edgcumbe, Mr. Astor, and others it had been decided to start a dispensary in the "Three Towns" in connexion with the treatment of tuberculosis. A few rooms would be engaged at which medical men would attend at certain stated hours and a nurse would also be engaged. By this means early cases of tuberculosis would be diagnosed and sent to a sanatorium, whilst the advanced cases would be instructed and treated at their own homes.

Sept. 27th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Provision for Phthisis.

A DISCUSSION took place at the last meeting of the Chorlton board of guardians with regard to the treatment of the phthisical patients chargeable to the Chorlton union. So long ago as January, 1909, a resolution was passed deciding "that special accommodation for phthisical patients chargeable to the union be immediately provided." Immediately, however, is an adverb of indeterminate elasticity as regards time, and so far nothing has been done to convert the words of the resolution into deeds. Some progress, however, was made at the last meeting, for it was proposed by one lady guardian, and seconded by another, to whom should be given the honour they deserve, "That steps be taken to provide a sanatorium or special hospital for the treatment of cases of consumption, the hospital to be chargeable to the Chorlton union." She said that they had enough patients to fill a sanatorium of their own, and suggested the appointment of a committee to carry out her proposal, "which was the most economical way of dealing with the problem." After some discussion, and objection on the part of one member of the board to anything being done until it was seen what would become of a proposal for the consolidation of the Manchester unions, the resolution was adopted. Hitherto these cases have been sent elsewhere for treatment. The chairman remarked that less than two years ago the board approached the corporation on this question, and the corporation promised "to take steps to do something." So far, however, as the board knew, those steps were not taken yet, and the responsibility of making some attempt to save the lives of these poor consumptives rested on the board. It is satisfactory to know that throughout the land determined and well-advised efforts are being made to combat the scourge of consumption. Apart from humane feeling, it is said that one-seventh of the pauperism of the country is due to consumption, so that it imposes a costly burden. The magnitude of the question becomes more apparent if reference is made to Dr. James Niven's special report on this question. He points out that over 1000 deaths per year in Manchester are attributed to phthisis, and assuming that the patients are infective for three years, on an average, before death, there are 3000 cases to be dealt with. Then there are a number of other infective cases with open tuberculous disease, chiefly in children, numbering probably another 1000. He shows that in 1909 the total loss in wages in 1041 cases was £48,129, to which must be added the loss by unnotified patients who are not working, and by patients who were notified in previous years and who are now out of work. It would therefore be worth while to spend a large sum of money if a great reduction could be made in this serious loss. In Manchester there are now 585 beds available for consumptive cases. Dr. Niven suggests the somewhat revolutionary scheme of amalgamation between the three unions of Manchester, Prestwich, and Chorlton, and that the Prestwich union hospital at Booth Hall should be handed over to the corporation to deal with phthisis. In favourable cases under hospital treatment the disease may last many years, so that to deal effectually with the great array of poor consumptives in the more advanced stages "it would be necessary to obtain powers of compulsory detention and to make a provision greatly in excess of any now contemplated." The report suggests that a system of compulsory insurance, such as that adopted in Germany, would meet the requirements of the case; but until such a system is established it would be necessary to provide a sum for the assistance of households invaded by tuberculosis. Dr. Niven thinks that £5000 would go far to meet such a need. He estimates the total cost per year, including hospital accommodation, public instruction, &c., at £21,000. This scheme will take some little time before it is received very cordially by the general public, but if when thoroughly carried out it were to drive tuberculosis from our midst it would prove not only life-saving but economical. It is not everywhere, however, that by-laws and regulations have advanced to present-day requirements. A few weeks ago, at a meeting of the Bolton council, Dr. J. H. Thompson said that as to dealing with consumption with the building by-laws as they were the authorities were as helpless as little children, and he spoke of them as a standing disgrace. He said, what seems almost incredible, that "in houses being built to-day the sleeping rooms were not a particle better than the cellars of ancient times." He considered it high time "to say that dwellings should not be built to foster and generate disease." Building by-laws have a good deal to answer for, not only in Bolton but in many other places.

Fatal Operations.

On Monday an inquest was held at Preston on a case where the patient died three hours after an operation for intestinal obstruction. The senior house surgeon at Preston Infirmary said that if the operation had not been performed the man could not have lived more than a few hours, an operation being his only chance of life. It seems that the case had not been reported to the coroner, but, having heard of it, he considered it his duty to hold an inquest. The house surgeon, in answer to the coroner, said that during the three years he had been at the infirmary there had been about a dozen such cases which had not been reported to the coroner, as he did not think that reporting them was a part of his duty. He had known cases where surgeons, recognising that operations might end fatally, had decided to give patients their only chance of living by performing such operations which had repeatedly been successful in the saving of life. He was of opinion that if inquests were held in all such cases in future medical men "would not undertake the responsibility of performing operations, and the odium attached to them." He had heard medical men say they would not operate in these desperate cases. "They had to consider their own reputation." The coroner said that personally he failed to see why the operation should not have taken place, "because there was a certain amount of publicity attached to it." If, therefore, it had of necessity to be performed in a poor house, in "a mean street," would the absence of publicity be a bar to an operation? Dr. F. W. Collinson, who was also called, said that in this desperate case they might have found a condition which would have led to the man being cured. He said he had operated on nine similar desperate cases in three years, and five patients were living to-day. "Whatever was said outside, doctors must, of course, do their best." The verdict was that the man had "died about three hours after a professional operation had been performed for obstruction of the bowels, and that such death was accelerated by the operation." One juryman held out against the latter portion of the verdict, believing it might frighten the public into not allowing their relatives to undergo operations, but, not converting the others to his opinion, he gave way to theirs. It is not clear that there was any evidence to show that the poor fellow's life was shortened, and the latter part of the verdict was speculative and does not seem to be justified. Be this as it may, such cases are very anxious ones. Where possible, of course, the consent of the patient or his nearest relations would be obtained; but if this cannot be done then the surgeon will use his own judgment, and act according to it, without regard to what the consequences to himself may turn out to be.

Sept. 27th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Closing of the Corporation Milk Depôt, Glasgow.

THE end of an interesting experiment has been seen in Glasgow by the determination of the corporation to close the milk depôt established by it some years ago to supply the infants of the poorer districts of the city with milk specially prepared and suitably diluted according to the age of each child. At the time the depôt was instituted there was difficulty in getting into touch with the mothers of newly-born infants, but since the Notification of Births Act and the establishment of consultations for infants, together with the appointment of a nurse and the aid which the Infant Health Visitors' Association renders, a more satisfactory means than the milk depôt of dealing with infant mortality has been provided. During the early days of the depôt, when the milk was issued without restrictions, the daily sales reached an average of 700. When approval of the family medical attendant or of the medical officer was introduced a shrinkage took place until the establishment of the Lord Provost's fund for the relief of distress, when the daily sales again reached between 600 and 700. But on the

cessation of this the daily numbers again fell, and now average about 300. The number of infants on depôt milk at present is thus only about 1·3 per cent. of the total number under one year of age. Another point which was urged for closing the depôt was that it was not the most neglected children of the city who were getting the depôt milk, but the children of mothers who, even if there had been no such supply of milk, would have fed their children comparatively well. Further, by comparisons of children's weights, there was no evidence that prepared milk possessed special advantages as a food. And, finally, it has been found that the cost of the preparation of milk at the depôt largely exceeds the sum realised on distribution. After a lengthy debate on the subject the corporation, by 38 votes to 22, decided to close the depôt. It was suggested that it would be advisable to inquire of milk purveyors whether any of them are prepared to place on sale clean bottled milk produced under conditions which would satisfy the health committee, and in this way imitate the certified milk supply of some cities in America.

Medical Inspection of Schools in Aberdeen.

Dr. G. Rose, medical officer to Aberdeen School Board, in his first report to the school board, gives an outline of the scheme adopted, and with regard to conditions and diseases due to neglect states that "the percentage of diseases of vermin of the head and body may well disturb the self-complacency of the community, as the figures show a state of matters not creditable to the city nor, indeed, to civilisation. ..... While the board can, and would, clean the children such action would be of little use unless the families and homes were also made clean. Negotiations are being carried on with the sanitary authorities to effect this, and it is hoped that they may come to a successful issue." The report states that diseases of the nose and throat are prevalent and a serious amount of decay of teeth. Rickets is more common in Aberdeen than elsewhere. Facts ascertained as to height and weight coincide with other towns where the same defects appear and where the same problem as to remedy presents itself.

Aberdeen Parish Council Medical Officership.

I understand that no applications have as yet been received for the post of visiting medical officer to the Oldmill Poorhouse. It will be remembered that the post was advertised first at a salary of £75 annually. The local branch of the British Medical Association, however, considered that anything under £150 would be inadequate remuneration for the time required, and advised its members not to apply for the post. The parish council then agreed to offer the sum of £105 annually, but the Association decided to stick by the original resolution and stipulate on a minimum salary of £150. The outcome of the situation is being awaited with much interest by the citizens generally.

Forfarshire Joint Committee and the Use of Paraffin for Pediculosis.

The Forfarshire Joint Committee on the Medical Inspection of School Children met at Forfar on Sept. 19th in order to consider the first annual report of Dr. N. J. Sinclair, the medical inspector. A member of the committee drew attention to the suggestion of Dr. Sinclair regarding the use of paraffin for pediculosis. While he understood that the parents were warned against the danger of fire, mistakes were bound to arise, and any suggestion of the kind was far too dangerous. In a case of fire the consequences would be simply horrible, and it might mean that a girl would be burned to death. Dr. Sinclair pointed out, in reply, that it was necessary to help the people in every way, so that they could have no objections to the materials on the ground of cost. It was agreed to delay considering the matter until next meeting.

Sept. 27th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Philanthropic Reform Association.

IN an address to the Philanthropic Reform Association last week the Earl of Meath, dealing with the question of Poor-law reform, urged that the essential changes might be summed up in the word "classification." This meant that the aged, the lunatics, the invalids, the able-bodied, were to be kept in separate buildings, with separate and diverse staffs, and under different treatment. If classification was to be carried out the unions must for some purposes, at any rate, be amalgamated into larger districts in order that the old workhouses in each union might be used for special purposes, one becoming the hospital for the whole of the larger district, another the almshouse for aged people, and so on, thus avoiding the necessity for new buildings on a large scale. The rates also which were levied for the support and maintenance of these institutions must be levied over the larger area, and for these purposes there must be an end of union rating. The simplest and most radical way of effecting the change would be to give to the county councils the whole of the duties now discharged by the Poor-law guardians. The committee of this association had signified its agreement with this proposal, with certain reservations. As regards the able-bodied poor, his lordship thought that they should be withdrawn from the care of local authorities and entrusted to the State, which already dealt with the unemployed by means of Labour Exchanges. Resolutions were passed at the meeting suggesting the holding of a conference on Poor-law reform between the Poor-law guardians and others interested in the matter, and calling on the Government to give power to boards of guardians to maintain sane epileptics in suitable colonies. It was stated that the Countess of Meath had offered to equip a home for epileptics, but the Local Government Board had pointed out that it was not within the power of guardians to contribute to its maintenance.

Criticism of a National Medical Service.

Since the issue some weeks ago by the British and Irish Medical Associations of a joint circular in favour of a national medical service for Ireland some letters have appeared in the daily papers in opposition to the scheme. These letters are mostly unsigned and do not tend to discredit the belief that the majority of the profession is in favour of a national medical service. The main point made in them is that by the establishment of a State service there will necessarily be some delegation from the powers of local authorities, and it is suggested that underlying the simple suggestion of a national service is some deep-lying political motive. A curious point put forward in criticism of a national service is that it may attract professional men from parts of the kingdom other than Ireland, and it has actually been urged that competition should be limited to Irishmen.

Poor-law Medical Officers and Consultants.

A point which frequently causes friction between Poor-law medical officers and boards of guardians is the attempt of guardians to control the choice of medical officers in a consultant. It often happens that guardians desire their medical officers to employ a certain medical gentleman in all cases where they require extra medical assistance. An instance of this occurred recently in Killarney, and the Local Government Board had to point out that any such direction by the guardians was *ultra vires*. In urgent cases the workhouse medical officer was bound to call to his assistance the nearest available duly qualified medical practitioner, and no resolution of the guardians could relieve him of this responsibility. On the other hand, a dispensary medical officer requiring extra professional assistance was authorised by the regulations to obtain the services of any practitioner he might wish to employ. It is unfortunate that a like discretion is not permitted to the workhouse medical officer, as obviously the nearest medical man is not always the most helpful in every class of case.

Royal Victoria Hospital, Belfast.

It is most satisfactory to be able to announce that already the sum of money promised for the erection of a new wing at the Royal Victoria Hospital, Belfast, as a memorial to the late King, amounts to over £10,500. At a meeting of the board of management of the Royal Victoria Hospital held on Sept. 21st, it was resolved unanimously that subscribers to the King Edward VII. memorial fund, to be devoted to the benefit of the hospital, shall be treated in regard to privileges in all respects as if their donations had been paid direct to the hospital—that is, as regards endowing and naming beds in that institution, and also as regards naming or nominating life-governors of the hospital.

Insanitary Condition of Portadown.

At the mid-monthly meeting of the Portadown town council held on Sept. 20th the medical officer of health, Mr. J. L. Rowlett, in answer to a question, said there were at least 100 working-class houses in Portadown in an insanitary state, and that a great number of them ought to be declared

insanitary areas that cannot be made sanitary owing to the want of air-space. A special meeting of the council is to be held to consider this extraordinary situation.

Clones Water-supply.

Clones, one of the leading towns in the North of Ireland, is threatened with a water famine owing to the cutting off of the water-supply for the past ten days. It would appear that owing to complaints the urban council decided to have the water-main pipe thoroughly scraped, and to do this ten days ago the water-supply was cut off. But when the work was entered upon the scraping apparatus suddenly stopped at some unknown point in the pipes, and all efforts to discover the machine have failed up to Sept. 24th. Now the only supply available for Clones is from a few pumps scattered here and there over the town, a very doubtful service in most cases. Great anxiety prevails in Clones, and it is hoped that the town surveyor will soon get matters right again.

The Belfast Hospital for Sick Children.

On Sept. 23rd Dr. W. McCready was elected ophthalmic surgeon to this institution, in place of the late Dr. Joseph Nelson.

Sept. 27th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Congress Season.

MANY congresses are being held in various places at this time of year. The Congress of Obstetrics and Gynæcology, which met at Toulouse from Sept. 22nd to 27th, unfortunately coincided as regards the date with the international congress on the same subject held in St. Petersburg. The date of the last-mentioned congress was several times altered on account of the political troubles in Russia, and there was even some uncertainty as to whether it would take place this year on account of the presence of cholera. These simultaneous meetings are mutually injurious, and for the purpose of avoiding these mishaps a permanent committee of the International Medical Congresses was formed last year at Budapest—a step which was heartily commended by the British Section of the International Association of the Medical Press. Although the two congresses on obstetrics were concurrent, as already mentioned, the one held at Toulouse was very successful, and among the various papers that were read, one by M. Fieux on the uncontrollable vomiting of pregnancy attracted much attention. In addition to the meetings announced in your Diary of Congresses I may mention that the Eleventh French Congress of Medicine will meet in Paris from Oct. 13th to 15th. Professor Landouzy will preside, and three discourses are announced in the official programme, one on bradycardia (delivered by M. Vaquez, M. Esmein, and M. Gallavardin), one on the treatment of symptomatic epilepsy (delivered by M. Souques, M. Bosc, and M. Vires), and one on the pathological relations of the liver and spleen (delivered by M. Gilbert, M. Lereboullet, and M. Roch); there are also on the programme four subjects for discussion by the meeting—namely, the ill-effects occasioned by serum treatment, acute cerebro-spinal meningitis, the tuberculin treatment, and the diseases of the pancreas. The Congress of the French Surgical Association will take place at the Faculty of Medicine on Oct. 3rd, Dr. Delagenière of Le Mans being in the chair. The French Association of Urology will meet on Oct. 6th; Professor F. Guyon will preside and the subject on the official programme is Urethral Stricture not dependent on Gonorrhœa or Mechanical Injury. The Second International Conference for the Study of Cancer will be held in Paris from Oct. 1st to 5th; Professor Bouchard is the president of the French committee.

The "Office National" of the French Universities and Schools.

Under the name of the *Office National* of the French Universities and Schools, an organisation has been formed in Paris for the purpose of publishing in foreign countries full information with respect to the educational advantages which France offers to foreign students. The president of the managing committee is M. Paul Deschanel, a deputy and a member of the French Academy. The director of the Office is Dr. Raoul Blondel, director of the information bureau of the University of Paris, and for the present its work is carried on at the Sorbonne.

Intraspinal Injections of Mercurial Salts.

M. A. Lévy, M. Bing, and M. Georges Lévy have recently published in the *Annales des Maladies Vénériennes* a memoir on the intraspinal injection of mercurial salts, a new therapeutic procedure which they have employed principally in the treatment of syphilitic diseases of the nervous system, making use either of ordinary mercurial compounds or of colloidal mercury. They recommended subarachnoid administration by means of a puncture made between the second lumbar vertebra and the sacrum. The patient ought to keep his bed for the ensuing 48 hours, because pain and loss of power in the lower limbs were frequently observed. Benzoate of mercury in doses of 1 centigramme was the best salt for the purpose, the biniodide being more painful in its action. Mercury was never found in the urine. The conditions in which the most encouraging results were obtained were specific spinal meningitis, spinal paralysis, and cases of acute syphilitic myelitis. The treatment must be applied in an early stage. In tabes success was, perhaps, possible when energetic treatment was adopted at the outset, but advanced forms of the disease were not benefited. The indications for treatment were, therefore, somewhat limited, and although this method was very interesting from the experimental point of view it was not at present likely to obtain recognition in ordinary practice.

Fraudulent Claim for Compensation by a Workman.

A man employed at a restaurant has recently been sentenced by the tribunal of the Seine to three months' imprisonment and a fine of 25 francs. His offence was that his forearm having been scalded in his occupation of dish-washing he kept the sores open for several months in order that he might draw the sum allowed him by the insurance company as an injured workman. He produced two certificates by medical men who had examined the sores, and the court in giving judgment censured these practitioners for granting certificates of this kind merely for the sake of the fees.

Medical Men and the Speed of Motor cars.

A medical man driving at full speed in a motor-car to visit a patient was arrested by the police for having exceeded the speed limit. The court acquitted him on the ground that a medical man hastening to a patient in danger of death might be considered as answering the legal definition of *force majeure*.

Sept. 27th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

"The Hygiene of Journalism."

UNDER this title the Italian press is discussing its own responsibility for the appalling tale of homicides, suicides, thefts, embezzlements, and sins against society which give their country a sinister priority among its continental sisters. Are the journals—daily, weekly, and illustrated—performing the wholesome, the educative, function they profess to discharge in giving such detailed publicity to crime; in making so prominent the assassin, the self-murderer, the "borsaiuolo abilissimo" (the accomplished pickpocket), the "elegantissima truffatrice" (fashionable lady swindler), the peculating prefect, and the absconding banker, whose feats they record with a fulness and a dramatic force that convert the protagonist into a celebrity, if not a hero, and earn for him a sneaking admiration, nay, a positive fellow-feeling, on the part of many a reader? Are they not feeding and fostering that imitative instinct which man, more or less, shares with the anthropoid ape, by subjecting it to the contagion of examples often romantic, picturesque, and generally seductive? To these questions one of the ablest of Italian journals, bearing an honourable record in the national "Risorgimento," the Florentine *Nazione*, gives a reply emphatically in the affirmative, and appeals to its contemporaries, many of them as authoritative as itself, to give less publicity to the sinister and more to the honourable and exemplary incidents that come within their cognisance. The appeal is as well-timed as it is well-inspired, and will, it is hoped, evoke a response conducive to "that sacred and sound contagion" which the well-ordered

citizen can exert on his neighbour the more his conduct is put in evidence. The "liberty of the press," says the *Nazione*, "ought not to be the liberty of infection," and journalism will find its account, even financially, in letting the normal and health-giving developments of society take precedence of the irregular and degrading. It will have no lack of material, when even the misanthrope Heine could sing—

"Und wie viel ist dir geblieben,
Und wie schön ist noch die Welt,
Und, mein Herz, was dir gefällt
Alles, alles, darfst du lieben!"

Pornography.

To pursue somewhat the same train of thought, which events in Italy make a topical one, once and again I signalise the efforts of the Government to restrict, and finally to suppress, the sale of lascivious publications, illustrated or not illustrated, "plain or coloured," the diffusion of which has now attained (not in Italy only) the proportions of an "immoral epidemic." It is indeed a disheartening spectacle for all well-wishers of Italy, particularly of "the Italy that is to be," to see children of tender years and of both sexes gloating over the so-called "comic journals" exposed to view and to sale at every kiosk or street corner, often indeed in the shop windows of booksellers posing as "respectable." These prints, under the pseudonym of "comic," are really meretricious in the grossest sense, and are the *causa causans* of that physical and moral deterioration which always ensues on premature indulgence in the marital privilege, leading up to (or rather down to) the homosexualism and Sapphism which are known to be rife in Southern Italy. The Italian Premier, Signor Luzzatti, as already recorded in THE LANCET (July 16th), has taken vigorous measures against this nefarious "literature," and within three months of the issue of his circular for its confiscation and prohibition has achieved gratifying and reassuring results. In terms of the circular in question, the police, mainly in Turin, Genoa, Venice, Florence, Rome, Naples, and Palermo, have proceeded to the arrest and "denunciation" of more than 100 "traffickers in obscenity," while impounding no fewer than 32,000 postcards, 6500 photographs, 2200 books and "pamphlets," to say nothing of "objects," kinematograph films, dolls, cigarette cases, hand-mirrors, and so forth, all pandering to the most depraved animalism. The individuals arrested have been mainly itinerant vendors of postcards and illustrated journals, so-called "laqueys de place," and immoral touts, and the publications have been largely stopped at the custom-houses, the railway termini, and the landing-quays. The royal procurators and judges of tribunals have allowed but few of the prisoners brought before them to escape their penalty, and it is one very hopeful symptom that the public are coöperating with the prefects in giving the police such information as may facilitate the enforcement of the law. Almost daily (I am assured) reports are forwarded to the Ministry of the Interior, over which the Premier presides, to stimulate and strengthen the officers of the crown in their beneficent crusade—it being the firm determination of His Excellency Signor Luzzatti "che la campagna moralizzatrice continui con oculata ma tenace energia" (that the campaign in promotion of morality shall be prosecuted with vigilant but unrelaxing energy).

Sept. 22nd.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Professional Secrecy and the Law Courts.

A DECISION of the highest Court of Justice in this country, which finally settled a long dispute, has been much commented upon, for it shows that a patient can no longer rely on his medical attendant's silence with respect to professional matters. The law passed in 1852 has hitherto always allowed a practitioner to keep to himself what he knows as to the ailments of his patients, even in a court of law; but in a divorce suit heard recently in one of our largest cities the medical adviser of the husband was called as a witness and the judge ordered him to disclose the nature of the man's illness, which the wife alleged was contagious. The practitioner on being informed that a certain paragraph of the common law orders such a disclosure to be made to the judge and to nobody else, gave evidence accordingly, and as the wife's assumption was right the action was decided in her favour. The husband in appealing against this decision alleged that the first judge had erred in ordering the medical man to disclose what he knew and thereby to violate the law, but the appeal was dismissed, and in the third and last instance the husband's claim was again dismissed. It therefore appears that according to the law of this country the confidential relations between practitioner and patient are not inviolable. The law, in fact, declares that a medical practitioner, a midwife, or an accoucheur who discloses the secrets of a patient to anyone other than an officially constituted authority shall for the first offence be suspended from practice for three months, the next time he shall be suspended for one year, and the third time altogether. A new Bill which is now under consideration is less considerate for the general public and no doubt it will call forth very vehement protests. It provides that breach of professional secrecy may be excused if it has been the means of preventing anything to the public detriment or has protected private interests. It binds medical men, lawyers, and apothecaries, as well as their subordinates, to keep secret all knowledge which they obtain through their occupation, and the same rule applies to students of medicine who may get such knowledge in the course of their studies. It punishes such offence with imprisonment for a period varying from two weeks to two years, or with a fine of 2000 kronen (£80). Proceedings will be taken only if the person who considers himself aggrieved makes application to that effect. The above-mentioned decision, which is in harmony with a few other similar judgments given lately in this country, has been discussed in the various medical councils, and to the credit of the medical profession all these representative bodies were unanimous in declaring such an interpretation of the law to be unacceptable to the profession. The members of the local medical divisions were urged to refuse all disclosures of such a kind, even under the threat of punishment, professional secrecy being one of the most important obligations of a practitioner.

A Medical Insurance Company.

In the estimation of insurance companies medical practitioners occupy a disadvantageous position which necessitates the payment of increased premiums on their policies. This exceptional treatment has for a long time been a subject of controversy, and as the companies show no sign of giving way a group of medical men have founded a medical insurance company whose chief object is to insure their professional brethren against accidents. The premiums paid hitherto by medical men, even to the company offering the most liberal terms, are 40 per cent. higher than those required by the new company, which has been named "Kosmos." The shares of the new undertaking were offered to medical men only, and all of them very soon found buyers. At present it is intended to limit the business strictly to medical insurance. As actions for malpractice are at present increasing in Austria at an alarming rate this branch of insurance will also be taken up by the new company.

The Health of the Working Classes in Vienna.

The Krankencassa for Vienna is publishing monthly statistical reports showing the general state of health of its members, and as these reports are very carefully made, their value can hardly be overestimated. The number of the members who belong to the Krankencassa is 310,000, all being of full working age, between 18 and 60 years, so that a very considerable proportion of the wage-earning population is under constant scientific observation. A total of 35,000 females, married and unmarried, belong to the Krankencassa, being 11 per cent. of the members, whilst the aggregate of the members is 16 per cent. of the entire population of Vienna, or 30 per cent. of the population between the ages of 18 and 60 years. During last July 8631 members were incapacitated for work by reason of illness. More than 10 per cent. of that number (870) suffered from tuberculosis of the respiratory organs, whilst other diseases of these organs were observed in 750 instances. There were 27 cases of pneumonia amongst them, all the patients being ironworkers. 369 patients suffered from tonsillitis with high pyrexia, and 143 were laid up with influenza. Diseases of the circulation were reported in 320 cases, disturbances of

the alimentary canal in 768 persons, and rheumatic attacks in 694 cases. Among the latter, tonsillitis had existed in 120 cases between six days and 14 weeks previously. In 1799 instances, accidents had caused inability to work which had continued for more than three days, for only such cases were placed on the sick-list. The total number of deaths was 265, being 3 per cent. of the patients, or less than 0·75 per 1000 of all members. Tuberculosis claimed 89 victims, being 30 per cent. of all the deaths in this month, only 18 persons dying from other diseases of the respiratory organs in that time. 59 patients succumbed to heart disease and 17 to neoplasmata. Six accidents proved fatal, whilst 15 persons committed suicide, 12 of them taking their own lives in consequence of prolonged illness caused by incurable disease.

Sept. 26th.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Amsterdam:* Dr. G. P. Van Trooyen has been recognised as *privat-docent* of Surgery.—*Berlin:* Dr. Georg Gaffky, Director of the Institute of Infectious Diseases, has been appointed Honorary Professor.—*Bologna:* Dr. Goffredo Sorrentino has been recognised as *privat-docent* of Dermatology, and Dr. Fabio Rivalta as *privat-docent* of Internal Pathology.—*Bonn:* Dr. Friedrich Fröhlich, *privat-docent* of Physiology, has been granted the title of Professor.—*Budapest:* Dr. Markus Pauntz has been recognised as *privat-docent* of Otology and Laryngology.—*Catania:* Dr. Domenico Mirto of Sienna, has been appointed to the Chair of Medicine.—*Clausenburg:* Dr. Ludwig Góth has been recognised as *privat-docent* of Gynæcology.—*Florence:* Dr. Pietro Bastianelli has been recognised as *privat-docent* of Operative Medicine, and Dr. Francesco Motolese as *privat-docent* of Ophthalmology.—*Geneva:* Dr. G. B. Zanda, of Messina, has been recognised as *privat-docent* of Materia Medica and Experimental Pharmacology, and Dr. Giovanni Galli as *privat-docent* of Internal Pathology.—*Halle:* Dr. Berthold Pfeiffer, *privat-docent* of Neurology, Dr. Arthur Menzer, *privat-docent* of Medicine, and Dr. Hildebrandt, *privat-docent* of Pharmacology, have been granted the title of Professor.—*Heidelberg:* Dr. Erich Grafe has been recognised as *privat-docent* of Medicine.—*Kazan:* Dr. D. V. Polumordrinoff has been promoted to the chair of Physiology.—*Modena:* Dr. Giuseppe Ovis, extraordinary professor of ophthalmology, has been promoted to be Ordinary Professor.—*Montreal:* Dr. J. C. Simpson has been appointed to the chair of Histology and Embryology.—*Munich:* Dr. W. Gilbert has been recognised as *privat-docent* of Ophthalmology.—*Naples:* Dr. Antonio Lombardi has been recognised as *privat-docent* of Therapeutics.—*Palermo:* Dr. Ernesto Paltacca has been recognised as *privat-docent* of Ophthalmology.—*Philadelphia (University of Pennsylvania):* Dr. David L. Edsall, professor of therapeutics, has been appointed to the chair of Medicine in succession to Dr. James Tyson, resigned. Dr. Paul A. Lewis has been appointed Adjunct Professor of Pathological Anatomy.—*Pittsburg:* Dr. Oscar Klotz of McGill University has been appointed to the chair of Pathological Anatomy.—*Rome:* Dr. Agenore Zeri, Extraordinary Professor of Medical Semeiology, has been promoted to be Ordinary Professor. Dr. Filippo Caccia has been recognised as *privat-docent* of Surgery, Dr. Tullio Luzzatti as *privat-docent* of Pædiatry, and Dr. Mario Fontana and Dr. Mario Serena as *privat-docenten* of Physical Therapeutics.—*Sassari:* Dr. Andrea Conti of Rome has been recognised as *privat-docent* of Internal Pathology.—*Seville:* Dr. Juan Bantista Teset has been appointed Professor of Forensic Medicine and Toxicology.—*Sienna:* Dr. Sante Solieri has been recoginsed as *privat-docent* of Surgery and Operative Medicine.—*St. Louis (Washington University).*—Dr. Georg Dock of Tulane University has been appointed Professor of Medicine; Dr. Joseph Erlanger, Professor of Physiology; Dr. Eugene L Opie, Professor of Pathological Anatomy; and Dr. John Howland, Professor of Pædiatry.—*St. Petersburg (Military Medical Academy):* Dr. V. A. Levasheff has been promoted to the chair of Hygiene and Police Sanitation. Dr. F V Verbitski has been recognised as *privat-docent* of Medicine.—*Sydney:* Dr. A. E. Mills has been appointed Lecturer on Medicine, and Dr. R. H. Todd Lecturer on Forensic Medicine.—*Vienna:* Dr. Viktor Widakowich has been recognised as *privat-docent* of Embryology.—*Würzburg:* The title of Professor has been granted to Dr. Karl Wessely, *privat-docent* of Ophthalmology.—*Zürich:* Dr. Karl Henschen has been recognised as *privat-docent* of Surgery.

THE annual dinner of the London School of Tropical Medicine will be held on Friday, Oct. 14th, at the Hotel Savoy, Mr. James Cantlie in the chair.

THE Public Inaugural Lecture at King's College, London, will be delivered on Oct. 5th by Professor David Waterston. The chair will be taken by Sir Alfred Keogh.

IN the obituary notice of Dr. T. E. Smyth of Tavistock, Devon, published in our issue of June 25th, 1910 (p. 1793), we inadvertently referred to "the late" Dr. Swale. Dr. Harold Swale is employed by the Sena Sugar Factory, Limited, Villa Fontes, Mozambique, and we tender him our apologies for implying that he was dead.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced: Dr. Calhoun, professor of ophthalmology in Atlanta College of Physicians and Surgeons.—Dr. H. Kanitz, *privat-docent* of dermatology in Clausenburg.—Dr. Sigmund Mayer, professor of microscopic anatomy in the German University of Prague, at the age of 67 years. He was a pupil of Helmholtz and Brücke, and assistant to Professor E. Hering in Vienna, whom he followed to Prague. He was a voluminous writer on physiological and microscopical topics, and was highly esteemed in social circles in Prague.

THE WOMEN'S IMPERIAL HEALTH ASSOCIATION.—Under the auspices of this association two new health caravans are immediately to be sent on tour, one through the eastern counties and the other in the parks of the metropolis. The London County Council has given permission for the lectures in the parks to be illustrated by the kinematograph, and an invention for the use of this apparatus during daylight will be used for the first time. The "Aurora," the first caravan of the association, which was sent out on August 20th, has visited 19 towns and villages, and an evidence of the success of this first campaign is the fact that after the visit of the van to a town or village a much larger number of open windows could be counted than before the visit.

DONATIONS AND BEQUESTS.—The executors of the will of the late Louisa Sophia Lady Goldsmid have made a further distribution of £20,210, representing part of her residuary estate, and among the charities which have been selected for participation in this sum are: London Fever Hospital, Liverpool-road, £500; University College Hospital, £500; Friedenheim Hospital (Home of Peace for the Dying), Swiss Cottage, £1000; St. Luke's Home (Home for the Dying Poor), Pembridge-square, £500; Brompton Hospital for Consumption (for boarding-out scheme), £1000; Convalescent Homes Association (to form the nucleus of a fund in perpetuity, the interest on which is to be given from time to time in aid of needy convalescent homes), £1000; Victoria Home for Invalid Children, Margate, £750; Banstead Surgical Home for Boys, Banstead, £750; Convalescent Home for Poor Children, St. Leonards, £500; Mary Wardell Convalescent Home for Scarlet Fever, Stanmore, £500; Home for Invalid Gentlewomen, St. Leonards, £500; and Children's Home Hospital, Barnet, £500. Among the Jewish charities benefited are the following: Home and House of Rest and Convalescence, Broadstairs, £800; Jewish Convalescent Home and Sanatorium for Consumption, Hove, £300; and Baroness de Hirsch Convalescent Home, Hampstead, £300.—Among other large charitable bequests the late Mr. R. G. Vivian of Swansea and London has bequeathed £1500 for a Glynn Vivian bed at the Swansea Hospital, conditional upon the governors undertaking to use the legacy for the colliers, miners, or metal workers of Vivian and Sons, or men connected with the Miners' Mission; £1000 towards the endowment of the hospital for the blind founded by him recently; £500 to St. George's Hospital, London; and £50 each to the National Hospital for the Paralysed and Epileptic, the Swansea Institution for the Blind, and the

Swansea Institution for the Deaf and Dumb.—Mr. William Crawshay of Newnham, Gloucester, who died on July 11th, left £3000 to the Gloucester Infirmary.—Lady Mond has forwarded £479 17*s.* 3*d.* to the Infants Hospital, Vincent-square, Westminster, as part proceeds of the matinée recently given at His Majesty's Theatre in aid of the Infants Hospital and the Royal Waterloo Hospital.

SECOND INTERNATIONAL CONGRESS OF ALIMENTARY HYGIENE.—This Congress will meet in Brussels from Oct. 4th to 8th. On Tuesday, Oct. 4th, a lantern lecture by Professor Dastre on "The Ultra-violet Rays and their Application to Alimentary Hygiene" will be given; on Wednesday a lecture by Professor Paterno on "The Chemical Sciences"; on Thursday a lecture by M. Bordet, director of the Pasteur Institute, Brussels, on "Hygiene and Bacteriology." Members and Associates (subscription 20 francs and 10 francs respectively) are admitted free to the Universal Exhibition during the time of the Congress. Special railway facilities have been arranged. Further information may be obtained from the honorary secretary, Mr. Cecil H. Cribb, 136, Shaftesbury-avenue, London, W.

THE HOUSING AND TOWN PLANNING ACT, 1909.—We have before us the first series of procedure regulations issued by the Local Government Board of Scotland for the guidance of local councils applying for authority to prepare or adopt a town planning scheme within the Board's jurisdiction. The regulations are those which might be expected relating to notices to be given to other local authorities interested and to information required by the Board. The elasticity of the Act and the discretionary powers intentionally assigned to those making use of it are exemplified in Article XI. of the regulations, which promises permission to depart from them where the Board is satisfied that there is reasonable cause for so doing. Freedom of this kind will probably be appreciated in rural districts, where the Act is likely to be employed usefully but on a small scale to meet special circumstances.

THE MIDDLESEX HOSPITAL.—We have received a letter from Prince Francis of Teck, in which he informs us that he has now obtained the £20,000 which he asked for to enable him to remove the debt from the Middlesex Hospital, an anonymous friend having just handed him a cheque for £231. In expressing the deep sense of gratitude which he feels towards all those who have so loyally responded to his appeal, he says that rich and poor alike have contributed to the success of his effort, the sums received ranging from 1000 guineas to 3*d.* But the task is not yet finished, for the debt of £20,000 represented the accumulated deficits between income and expenditure for three years, and it is obvious that until a steady and permanent addition of £7000 per annum is made to the hospital's income its financial position is not secure. "It is my ambition," says Prince Francis of Teck, "to substitute, for a hand-to-mouth administration, one which will provide the governors with an income sufficient to meet the normal expenses of the year."

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on Sept. 16th. There were present: Dr. de Havilland Hall (in the chair), Mr. J. Brindley James, Dr. M G. Biggs, Dr. J. W. Hunt, Dr. F. C. Martley, Dr. Frederick S. Palmer, Mr. Frederick Wallace, Mr. H. P. Symonds (Oxford), Dr. H. A. Sansom, Mr. F. S. Edwards, Mr. J. F. Colyer, Dr. F. J. Allan, Dr. St. Clair B. Shadwell, Dr. M. Greenwood, and Dr. J. B. Ball. The accounts presented showed that the business was satisfactorily progressing. As usual during the summer months, the sickness experience has been well under the amount expected and provided for in the tables of contribution, and a considerable sum has thus been added to the large reserves of the society. These have grown steadily from the time when the society first started its operations and now amount to over £240,000. There is no fear that the liberal conditions offered by the society to its members will have to be curtailed for many years to come. Prospectuses and all information can be obtained on application to Mr. F. Addiscott, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

BOOKS, ETC., RECEIVED.

CONSTABLE AND CO., LIMITED, London.

The Encyclopædia of Municipal and Sanitary Engineering. Edited by W. H. Maxwell, A.M.Inst.C.E., and J. T. Brown, M.R.San.Inst. Price 42*s.* net.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

History of Medicine. By Dr. Max Neuburger, Professor of Medical History in the Imperial University of Vienna. Translated by Ernest Playfair, M.B., M.R.C.P. In two volumes. Vol. I. Price not stated.

Oxford Medical Publications. A System of Syphilis. In six volumes. Edited by D'Arcy Power, M.B. Oxon., F.R.C.S., and J. Keogh Murphy, M.C. Cantab., F.R.C.S. With an Introduction by Sir Jonathan Hutchinson, F.R.S. Vol. V. Price £2 2*s.* per volume net.; or to subscribers £10 10*s.* net. the set of six volumes.

Oxford Medical Publications. Fractures and their Treatment. By J. Hogarth Pringle, M.B. Ed., F.R.C.S. Eng., Glasgow. Price 15*s.* net.

Cunningham's Manual of Practical Anatomy. By the late D. J. Cunningham, M.D. Edin. et Dubl., D.Sc., LL.D. St. And. et Glas., D.C.L. Oxon., F.R.S. Fourth edition. Revised by Arthur Robinson, Professor of Anatomy in the University of Edinburgh. In two volumes. Vol I.: Upper Limb; Lower Limb; Abdomen. Vol. II.: Thorax, Head, and Neck. Price 10*s.* 6*d.* net. per volume.

KEENER, GEORGE, AND CO., London.

Hookworm Disease. Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment. By George Dock, A.M., M.D., and Charles C. Bass, M.D. Price 9*s.* net.

Nephrocoloptosis. By H. W. Longyear, M.D. Price 12*s.* 6*d.* net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

Practical Physiological Chemistry. By R. H. Aders Plimmer, D.Sc. Price 6*s.* net.

The Fats. By J. B. Leathes, M.A., M.B., F.R.C.S. Price 4*s.* net.

MURRAY, JOHN, London.

Diseases of the Skin, including Radiotherapy and Radiumtherapy. By Ernest Gaucher. Translated and edited by C. F. Marshall, M.Sc., M.D., F.R.C.S. Price 15*s.* net.

The Prevention of Malaria. By Ronald Ross, D.P.H., F.R.C.S., D.Sc., LL.D., F.R.S., C.B., Nobel Laureate. (With contributions by twenty other authorities.) Price 21*s.* net.

REBMAN, LIMITED, London.

Portfolio of Dermochromes. By Professor Jacobi of Freiburg im Breisgau. English Adaptation of Text by J. J. Pringle, M.B., F.R.C.P. Third revised and enlarged edition. Three volumes. Price, full bound, £4 14*s.* 6*d.*; half bound, £4 6*s.*

SAUNDERS (W. B.) COMPANY, Philadelphia and London.

Hydrotherapy. A Work on Hydrotherapy in General, its Application to Special Affections, the Technic or Processes Employed, and the Use of Waters Internally. By Guy Hinsdale, A.M., M.D. Price not stated.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London. WOOD, WILLIAM, AND COMPANY, New York.

Urgent Surgery. By Félix Lejars, Professeur Agrégé à la Faculté de Médecine de Paris. Translated from the Sixth French Edition by William S. Dickie, F.R.C.S. Vol. II. The Genito-Urinary Organs, the Rectum and Anus, the Strangulated Hernias, the Extremities. Price 25*s.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALFORD, E. F. R., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Woodbridge District of the county of Suffolk.

APPERLY, R. E., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Anæsthetist to the Middlesex Hospital.

BERRY, GEORGE A., M.B., C.M. Edin., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for the Sheriffdom of the Lothians and Peebles, with a view to his being employed in ophthalmic cases which may arise in the Sheriffdom.

BUCK, HOWARD, M.B., Ch.B. Vict., F.R.C.S. Eng., has been appointed Assistant Surgical Officer to the Manchester Royal Infirmary.

COLE, SAMUEL JOHN, L.R.C.P. Lond., M.R.C.S. Eng., has been elected a Fellow of the Royal Institute of Public Health.

DODDS, THOMAS GEORGE BOSWALL, M.D., Ch.B. Edin., has been appointed *pro tem* Medical Officer and Public Vaccinator for the Northern District of the Cirencester (Gloucestershire) Union.

EMRYS-ROBERTS, E., M.B., Ch.B. Vict., M.D. Liverp., has been appointed Professor of Pathology at University College, Cardiff, and Pathologist to the Cardiff Infirmary.

HICHENS, FRANK, M.D., B.S. Lond., M.R.C.S., L.S.A., D.P.H. Eng., has been reappointed Medical Officer of Health for the Redruth (Cornwall) Urban District.

HUNTER, MITCHELL, M.D. Miami Med. Coll., L.S.A., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for the City and County of Londonderry.

MCBEATH, WILLIAM, M.D., M.Ch. R.U.I., D.P.H. Camb., has been appointed Medical Officer for the Kingsteignton District by the Newton Abbot (Devon) Board of Guardians.

MAPLETON, HENRY BANBURY, M.D., C.M. Edin., D.P.H. Lond., has been reappointed Medical Officer of Health for the Newton Abbot (Devon) Urban District.

O'KANE, MICHAEL, M.B., L.S.A. Lond., M.R.C.S., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for the City and County of Londonderry.

QUIRK, E. J. J., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at Charing Cross Hospital.

RABY, LEONARD, M.D. Durh., M.R.C.S., L.S.A., has been reappointed Medical Officer for the Third District by the Devizes (Wilts) Board of Guardians.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

BATH, ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with lodging, board, and washing.

BEDFORD COUNTY HOSPITAL.—House Physician. Salary £60 per annum, with apartments, board, and washing.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—Two House Surgeons for six months. Salary at rate of £75 per annum, with board and residence.

BRIGHTON AND HOVE HOSPITAL FOR WOMEN.—House Surgeon, unmarried, for six months. Salary £30 per annum, with apartments, board, &c.

CARDIFF INFIRMARY.—Honorary Ophthalmic Surgeon.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.—Registrars and Clinical Assistants.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £75 per annum, with board and lodging. Also Surgeon-in-Charge of Branch Dispensary. Salary £80 per annum, with board and lodging.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £60 per annum, with board, apartments, and laundry.

COLCHESTER, BOROUGH EDUCATION COMMITTEE.—Assistant School Medical Officer (female). Salary £250 per annum.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum, with board, washing, and residence. Also House Physician. Salary £80 per annum, with board, residence, and washing.

DENBIGH, DENBIGHSHIRE INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with apartments, board, laundry, &c.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Second Medical Officer for six months. Salary at rate of £40 per annum, with luncheon and tea.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—House Surgeon. Salary £120 per annum, with board, apartments, and washing.

HALIFAX, ROYAL INFIRMARY.—Second and Third House Surgeons, unmarried. Salary £100 and £80 respectively, with residence, board, and washing.

HAMPSTEAD GENERAL HOSPITAL.—House Physician and House Surgeon for six months. Salary at rate of £70 per annum, with board and residence.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with rooms, board, and washing.

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Assistant Medical Officer and Pathologist, unmarried. Salary £250 per annum, with board, lodging, washing, &c.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Fourth Anæsthetist. Salary £15 15s. per annum. Also House Surgeon, unmarried, for six months. Salary £30, with board, residence, &c.

HULL ROYAL INFIRMARY.—Senior House Surgeon, unmarried. Salary £150 per annum, with board and apartments.

JERSEY INFIRMARY AND DISPENSARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and attendance.

KETTERING AND DISTRICT GENERAL HOSPITAL.—Resident Medical Officer, unmarried.

KING EDWARD VII. SANATORIUM, Midhurst, Sussex.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and attendance.

LEEDS, HOSPITAL FOR WOMEN AND CHILDREN.—House Surgeon for six months. Salary at rate of £50 per annum, with board.

LONDON HOSPITAL, Whitechapel, E.—Two Surgical Registrars. Salary £100 per annum each.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.

MANCHESTER ROYAL INFIRMARY.—Surgical Registrar. Salary £70 per annum.

MANCHESTER WORKHOUSE INFIRMARY, Crumpsall.—Visiting Surgeon Salary £150 per annum.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Assistant House Physician for six months. Salary at rate of £20 per annum, with board and residence.

MORPETH, NORTHUMBERLAND COUNTY ASYLUM.—Junior Assistant Medical Officer (female). Salary £120, with board, apartments, laundry, and attendance.

NEWCASTLE, CO. WICKLOW, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND.—Junior Resident Medical Officer. Salary £75 per annum, with board and residence.

NEWCASTLE-UPON-TYNE CITY ASYLUM, Gosforth.—Junior Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, and laundry.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—Honorary Dental Surgeon. Also House Physician and House Surgeon for six months. Salary in each case at rate of 50 guineas per annum, with board and residence.

RADNOR COUNTY COUNCIL.—County Medical Officer of Health and County School Medical Officer. Salary £300 per annum.

RAINHILL COUNTY ASYLUM, near Liverpool.—Assistant Medical Officer, unmarried Salary £150 per annum, with apartments, board, washing, &c.

READING, ROYAL BERKSHIRE HOSPITAL.—House Physician and Second House Surgeon, both for six months. Salary £30 and £60 per annum respectively, with board, lodging, and washing.

ROBERT BROWNING SETTLEMENT, Walworth, S.E.—Honorary Superintendent.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—Resident House Surgeon, unmarried, for six months. Salary £100, with board, residence, and washing.

ROYAL NAVAL MEDICAL SERVICE.—Fifteen Commissions.

ST. MARYLEBONE ANTI-TUBERCULOSIS DISPENSARY.—Medical Officer. Salary £250 per annum.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £80 per annum.

SALFORD ROYAL HOSPITAL.—Honorary Assistant Surgeon.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon, unmarried, for six months. Salary £70 per annum, with residence, board, and washing.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Senior and Junior House Surgeons. Salary £100 and £90 per annum respectively, with residence, board, and washing.

SUNDERLAND WORKHOUSE, Hylton-road.—Resident Assistant Medical Officer. Salary £120 per annum, with rations, apartments, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Act at Tighnabruaich, in the county of Argyll; at Painswick, in the county of Gloucester; and at Ryde (Isle of Wight), in the county of Hants.

Births, Marriages, and Deaths.

BIRTHS.

DANIEL.—On Sept. 21st, at 8, St. James's-avenue, West Ealing, the wife of Alfred W. Daniel, M.D. Cantab., of a son.

DAVIDSON.—On Sept. 26th, at Queen's-road, Coventry, the wife of Duncan Davidson, M.B., B.Ch. Oxon., of a daughter.

DOUTY.—On Thursday, Sept. 22nd, at The Manor House, Clifford Chambers, Gloucestershire, the wife of Edward H. Douty, of a son.

FALK.—On Sept. 23rd, at Dunedin, Chichester-road, Croydon, the wife of Captain H. Falk, I.M.S., of a son.

HODGES.—On Sept. 21st, at Cotelands, Buxton, the wife of Dr. A. D. P. Hodges (of Uganda), of a daughter.

KEELING.—On Sept. 24th, at Market Bosworth, the wife of Hugh Nevill Keeling, M.R.C.S. Eng., L.R.C.P. Lond., of a daughter.

TAYLOR.—On Sept. 20th, at Tun Bridge, Liphook, the wife of J. J. Taylor, M.A., M.D., of a son.

WILLCOX.—On Sept. 18th, at Welbeck-street, W., the wife of W. H. Willcox, M.D., of a son.

MARRIAGES.

PURNELL—BEE.—On Sept. 19th, at St. Martin-in-the-Fields, London, Charles Arthur Purnell, M.B., to Nora Kathleen Jean, daughter of James Bee, Normanhurst, Lee, Kent.

ROOME—PETTER.—On Sept. 20th, at Bromley Parish Church, Alfred Martin Roome, M.R.C.S. Eng., L.R.C.P. Lond., to Charlotte Eleanor, youngest daughter of the late Arthur Petter and of Mrs. Petter, of St. Matthew's-gardens, St. Leonards-on-Sea.

WARD—MARGRAVE.—On Sept. 21st, 1910, at All Saints' Church, Llanelly, by the Rev. Watcyn Morgan, Vicar of the parish, assisted by the Rev. J. Popkin Morgan, uncle of the bride, Ernest Ward, M.D., M.A. Cambridge, F.R.C.S. Eng., third son of the late Sir John Ward of Leeds, to Nora, eldest daughter of Fred Margrave, Esq., of the Old Vicarage, Llanelly.

WILLIAMS—HENSHAW.—On Sept. 24th, at the Church of St. Michael and All Angels, Bedford Park, Cyril O. O. Williams, M.R.C.S., L.R.C.P., to Gertrude Mabel W. Henshaw, youngest daughter of William A. Henshaw, of Esmond-road, Bedford Park.

DEATHS.

CHURCHILL.—On Sept. 1st, at Swatow, China, from hydrophobia, John Aylward Churchill, M.R.C.S., L.R.C.P., aged 35 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"THE STERILISED TRAIN."

THE opening of the tourist season south of the Alps is within measurable distance, and the "Amministrazione delle Ferrovie di Stato" (writes an Italian correspondent) is laudably engaged in providing for the comfort of the passenger and also for his protection from risk to health. In both respects there has hitherto been much to be desired; but in the latter, with the cholera scare menacing the mainland and islands, the necessity for increased vigilance in the prevention of contagious or infective disease is, literally, a *prima cura*. To ensure the custom of the paying traveller who is also a paying guest, there must be rigorous exclusion of that other type of traveller and guest ("non-paying" in every sense!) which has hitherto found a place, particularly in first-class carriages—the microbe, to wit, as protean in its form as it is noxious in its effects. "The padded arm-chairs," according to a sub-alpine authority on hygiene, "are quite a preserve or hot-bed of animalcule life, abounding in bacteria, cocci, vibriones, spirochætæ, to mention a few varieties, whose contact with the passenger, prolonged for hours by day and night, is about as risky an experience as he can encounter." With the head resting on a cushion surcharged with these microbes (the previous "fare" having often imparted a contribution of his own), the unsuspecting passenger exposes himself to infection of every kind, resulting often enough (according to the medical authority above referred to) in "precoce calvizie" (premature baldness) from continued pressure against the said cushion, while courting, among other bacilli, that of tuberculosis or of diphtheria itself. The overheating of the train, the indisposition, not to say the positive resistance, of the continental, particularly the Teutonic, fellow-passenger to the admission of fresh air, maintains a temperature at which bacilli of every kind are at their maximum of infectivity. To this cause was attributed during the last winter and spring in Italy the increase of victims to influenza, many of whom traced their having contracted it to a six or seven hours' journey in a stifling atmosphere, itself a "blend" of all manner of infective agencies. "To travel under conditions hygienically sound, in a carriage 'batteriologicamente puro,' such is the *sine quâ non* of railway transit," says the authority already quoted, adding useful hints in other directions, one of them being the observance of punctuality, or the coincidence of departure and arrival with the figures of the time-table, for which he humorously suggests "un orario sterilizzato" (a sterilised Bradshaw or A.B.C.). But even this unpunctuality of trains, involving prolonged detention on draughty platforms or in stuffy waiting-rooms, is of secondary consideration to the hygienic purity of the rolling-stock. So, to sum up, there is little or no time to lose on the part of the Italian lines, now under State control, in originating and running "il treno sterilizzato"—especially when the great International Exhibitions to be held in Turin and in Rome next year are likely to attract a greater number of visitors from abroad than Italy has yet had to convey and to cater for.

THE VALUE OF BOOK-DEBTS.

To the Editor of THE LANCET.

SIR,—In buying a practice and taking over the book debts, what amount in the £ is it customary to pay for the latter?

I am, Sir, yours faithfully,

Sept. 26th, 1910. GENTIAN.

*** It is impossible to give much idea from these data. As a rule it is not advisable or customary to buy book debts, but if it is done the value may be anything from 2*s.* 6*d.* to 17*s.* 6*d.* in the £. A recent debt in a good-class practice would be worth the higher figure, but an old account from a poor patient would be valueless. "Gentian" should have the debts properly valued by a medical accountant used to such business.—ED. L.

HEALTH AND SANITATION IN SIERRA LEONE.

IN his report to the Colonial Office on the Blue-book of Sierra Leone for the year 1909, just issued as a Parliamentary paper, Mr. G. B. Haddon Smith, C.M.G., deals at some length with questions of health and sanitation in both the Colony and Protectorate. The estimated area of the former is 4000, and of the latter 27,000, square miles. The territory is bounded on the north and north-east by French Guinea and on the south-east by the negro republic of Liberia, whilst on the west the Atlantic Ocean forms the boundary. The population of the colony is estimated at 76,572; that of the Protectorate at 1,146,000. Freetown, the capital of the colony, had an estimated population on Dec. 31st, 1909, of 39,531, and the death-rate during the year was 19 per 1000 and the birth-rate 13 per 1000. The death-rate amongst infants under the age of 1 year was 344 per 1000. This, though still very high, is the lowest for the past seven years, the decrease having been sustained since 1905. The reasons assigned for this high death-rate amongst infants are malaria, carelessness in the management of childbirth, insanitary surroundings, and ignorance as to feeding and clothing and cleanliness of children. Native children are not weaned until they are about 18 months old, but the natural food of the child is supplemented at an early age—a few months after birth in the case of the poorer natives—by a gruel made of maize. This is given to very young children, the mother "drenching" the child with it. In the meantime the high infant death-rate is a matter of great importance to the Sierra Leoneans, as, owing to the fact that the deaths are considerably in excess of the births, the race is gradually dying out. The natives all realise this, the more intelligent also realising that unscientific midwifery plays a prominent part in the matter. Some years ago the Government opened a special midwifery ward at the Colonial Hospital, and at first it was little used. Now, however, the natives of all classes, even the highest, make use of it, and it is hoped that its good effects will be as far-reaching as they are beneficial. The general health of the Europeans (who number about 620) was satisfactory, and the death- and sick-rates were below the average. There was no outbreak of small-pox, though a few cases were reported in the Protectorate. This disease, which was looked upon so recently as in 1907 as an "annually recurrent disease which usually makes its appearance in the dry season," appears to be gradually disappearing, a fact which can only be attributed to the action the Government has taken towards the prevention of the disease. Vaccine lymph is sent out fortnightly from the Liverpool Institute of Comparative Pathology. The total number of persons vaccinated in 1909 was 7443 as compared with 4317 in 1908. Of the former number 6491 were successful, 430 were unsuccessful, and 522 were not seen again. Lymph deteriorates very quickly in this climate, and the unsuccessful cases are attributed to the delay, owing to difficulties of transport, in despatching the supplies to their respective destinations. Great attention is being paid to sanitation generally and anti-malarial sanitation in particular. Hill Station, which is half-an-hour by rail from Freetown, undoubtedly justifies its existence, and is the finest and most successful anti-malarial measure carried out so far by any West African colony. There were 54 residents there during the year. The chief characteristics of Hill Station from a health point of view are—(1) its marked freedom from mosquitoes and most other winged insects, these being only very occasionally seen or heard; (2) its coolness and breeziness, especially at night; and (3) its restful quiet at night compared with residence in or near a native town, where the nights are made hideous by the barking of dogs, the beating of tom-toms (which, however, stops in Freetown at 9 P.M.), and the heat and stuffiness of the atmosphere. It is a great pity that it is not possible for all officials working at headquarters to reside at Hill Station, and if only it were possible for the public offices to be erected on the site the extension of the term of residential service could be considered. The native chiefs and their people in the Protectorate seem eager to carry out the suggestions made through the District Commissioners and medical officers for the improvement of their towns. Every year the Government awards prizes to the chiefs of the two towns in each district which have shown the greatest improvement in sanitation. These prizes, when won for the first time, take the form of very handsome swords with gilt hilts and scabbards, and the swords already awarded have stimulated other chiefs to improve their towns with a view also of obtaining swords themselves. When a prize is won a second or third time a parchment certificate is given to the winner of the prize. The chiefs are informed that if they allow the towns in respect of which prizes have been given to relapse into their original unsatisfactory condition the much-coveted swords will be taken away from them. Elementary hygiene continues to be taught regularly in all the secondary schools.

The climate of Sierra Leone is unhealthy and unsuitable for Europeans, but a more careful mode of living, and the adoption of precautions against the bites of mosquitoes, have done much to lessen the danger of the climate. The conditions of leave under which European officials serve—viz., four months' leave in England after a residence in Sierra Leone of 12 months—also materially affect the question of climate as far as these officials are concerned. There are only two seasons—the wet and dry—the former commencing in May and lasting until October. The lowest temperature last year was 67° on July 27th; the highest 99·4° on Feb. 12th. The total rainfall during the year was 139·97 inches.

The Colonial Hospital, Freetown, contains six wards with 62 beds. 1214 patients were admitted during the year. 217 surgical operations requiring the use of anæsthetics were performed during the year, this number being the highest on record. Only eight deaths took place in connexion with these operations. The number of out-patients treated at the Colonial Hospital during the year was 27,474. The records show a marked increase in the number of out-patients treated from year to year. Fifty cases were admitted during the year to the nursing home, a building in the town in the neighbourhood of the public offices. In the Male Incurable Hospital there were 78 patients at the beginning of the year, and 75 were admitted during the year. The deaths numbered 45, due chiefly to old age, syphilis, paralysis,

and exhaustion. There were six lepers in the hospital at the beginning of the year and two admissions in 1909, making a total of eight under treatment. There are hospitals and dispensaries at the headquarters of all the districts of the Protectorate. 428 cases were treated in these hospitals in 1909. The number of out-patients treated in the various dispensaries of the Colony and Protectorate (exclusive of the Colonial Hospital, Freetown) during the year amounted to 20,481.

Incidental allusion is made in the report to the extensive use by the natives in the Protectorate of kola nuts (much grown in the interior) as a tonic stimulant. "One nut well masticated and eaten will sustain a man for a whole day without food. The nut has no intoxicating or reactionary effect, though it has a very bitter and astringent taste."

TOOTHBRUSH DRILL.

To the Editor of THE LANCET.

SIR,—Will you kindly enlighten an interested reader with respect to the meaning of the term "hyd. perchlor." which appears at p. 76 of your issue of Saturday, July 2nd, 1910, in a communication entitled "Toothbrush Drill," signed Edward Carnall, M.R.C.S., D.P.H.?

If "hyd." is an abbreviation for hydrogen, I am not familiar with its perchlorid, which leads me to suspect that "perchlor." may be a misprint and that peroxid is what was intended. Or if hydrargyri perchloridi is what is intended, I would respectfully suggest that in view of the well-known poisonous qualities of corrosive sublimate, especially when used in oral work, it would be well to designate that compound with rather less ambiguity than your correspondent has done in order to avoid serious or even fatal results which might readily arise from this careless method of dealing with such a powerful poison.

And may I also add that practical experience has shown that a much more dilute solution of sublimate is amply sufficient to sterilise a toothbrush, even 1 in 10,000, if used long enough and in sufficient volume. And further, that a weak solution of formol, because of its non-toxic character, is a much more suitable toothbrush antiseptic in any event than is corrosive sublimate.

I am, Sir, yours faithfully,

Philadelphia, Sept. 20th, 1910. EDWARD C. KIRK.

*** Perchlor. was not a misprint, and the abbreviated term, rightly or wrongly, is in such daily use in this country that we cannot imagine the risk mentioned by Dr. Kirk to exist.—ED. L.

A DISTINGUISHED AGGREGATE.

Messrs. Burroughs, Wellcome and Co. have obtained what is believed to be a record number of distinctions in an exhibition of international character. The products of this firm have been awarded eight grand prizes, three diplomas of honour, and one gold medal at the Brussels International Exhibition.

STONE-BLIND.

To the Editor of THE LANCET.

SIR,—I have only to-day, on my return from holiday-making, seen my file of LANCETS published during my absence, and have read Dr. H. L. Gregory's ingenious suggestion with interest but without conviction. Of course, I had not forgotten Shakespeare's contribution to the subject, but confess had never thought of it but as a playful expansion of the idea such as might be expected from the character who, in the same sentence, speaks of his "true-begotten father." Apart from this I do not remember the expression "gravel-blind," and "sand" I took to be a popular mispronunciation of the A.-S. sam = half.

Dr. Gregory *may* be right (I am not an authority), but if he is right we should expect to find not only "stone-deaf" but "gravel-deaf" and "sand-deaf"—or with the analogous "deaf as a post," "deaf as shavings," "deaf as sawdust," and so on! But we don't.

I am, Sir, yours faithfully,

Cavendish-square, W., Sept. 27th, 1910. J. Y. W. MACALISTER.

FOURTH OF JULY CASUALTIES IN 1910.

THE *Journal of the American Medical Association* of Sept. 3rd contains a note on the number of deaths and injuries from the use of fireworks during the celebration of the Fourth of July. The casualties are decidedly less in number than heretofore. There were only 72 cases of lockjaw this year, where last year there were 150. This is the lowest number of tetanus cases reported since our contemporary began the compilation of these statistics in 1903. The *Journal of the American Medical Association* says: "There were 131 deaths this year as compared with 215 last year, and 2923 injuries this year as compared with 5307 last year. This remarkable decrease in deaths and injuries is undoubtedly due to the adoption by a number of cities, such as New York, Chicago, Boston, and Toledo, of restrictive measures, whereby the number of casualties was largely reduced, and also by the adoption of prohibitive measures by a number of cities, such as Baltimore, Washington, Cleveland, Trenton, and others, whereby deaths and injuries were entirely prevented or reduced to the minimum. A large number of cities also furnished special programmes in which music, the marching of soldiers, the flying of flags and banners, children's parades, historic floats, &c., were prominent features. This more sensible method of celebration of the Fourth of July is rapidly coming into vogue."

Antisweater has omitted to send his name and address. An answer will be sent him on receipt of the information.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1910:—

Oct. 1st–5th (Paris).—Second International Conference for the Study of Cancer.
" 3rd–7th (London).—Sixth London Medical Exhibition.
" 3rd–7th (Berlin).—International Congress on the Care of the Insane.
" 4th–8th (Brussels).—Second International Congress of Alimentary Hygiene.
" 5th–8th (Brussels).—Ninth International Tuberculosis Conference.
" 10th–15th (London).—Town Planning Conference.
" 13th–15th (Paris).—Eleventh French Congress of Medicine.
" 16th–22nd (Barcelona).—First International Spanish Congress of Tuberculosis.
Nov. 7th–12th (Cape Town).—Twelfth South African Medical Congress (1910).

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Mr. W. Fox: Clinique (Skin). 5.15 P.M., Lecture:—Dr. R. Jones: The Teaching of Insanity in the British Isles.

TUESDAY.—4 P.M., Dr. H. Campbell: Clinique (Medical). 5.15 P.M., Lecture:—Dr. Scanes Spicer: The Causation and Care of Obstinate Nasal Discharges.

WEDNESDAY.—4 P.M, Mr. A. H. Tubby: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. R. Lake: Eustachian Obstruction.

THURSDAY.—4 P.M., Mr. E. L. Evans: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. D. Grant: Some Practical Points in the Diagnosis and Treatment of Tuberculosis of the Larynx.

FRIDAY.—4 P.M., Mr. E. K. Campbell: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Robinson: Diseases of Women.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Dunn: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Dr. D. Grant: Methods of Examination.

FRIDAY.—3.45 P.M., Lecture:—Dr. D. Grant: Methods of Examination.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE CHEST, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Essentials in the Study of Dermatology.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.),

TUESDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (5th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (6th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (8th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. I. of 1910, which was completed with the issue of June 25th, were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 28th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 22	30·44	N.W.	...	94	62	49	51	54	Fine
,, 23	30·43	S.W.	...	105	64	48	50	53	Overcast
,, 24	30·29	E.	...	99	66	53	53	55	Dull
,, 25	30·23	S.E.	...	83	63	52	53	55	Overcast
,, 26	30·03	S.E.	...	89	67	52	55	56	Overcast
,, 27	30·16	S.W.	...	110	70	54	55	56	Fine
,, 28	30·12	E.	...	112	73	54	54	56	Fine

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P.—Miss E. Page, Harold Wood; Dr. R. H. Palipaka, Puri; Provincial Board of Health, Victoria, Secretary of; Messrs. Pratt and Co., Manchester; Mr. K. Pearson, Lond.

Q.—Queen's University, Belfast, Bursar of.

R.—Dr. T. Robertson, Eyemouth; Messrs. Ramies and Co., York; Mr. R. Redpath, Newcastle-on-Tyne; Captain R. M. Ranking, R.A.M.C., Cork; Royal Pimlico Dispensary, Lond., Secretary of; Royal National Sanatorium, Bournemouth, Secretary of; R. W.

S.—Mr. G. Steinecke, Munich; Mr. H. W. Scriven, Lond.; Mr. G. C. Stamper, Skegby; S. M. M.; Dr. H. J. Starling, Norwich; Salford Union, Clerk to the; Messrs. Spiers and Pond, Lond.; Mr. W. Shaw, Larne; S. O. H.; Stamford Infirmary, Secretary of; Dr. F. E. Shipway, Lond.; Sanitas Electrical Co., Lond.; Saarbach's News Exchange, Mainz.

T.—Dr. E. S. Torres, Gijon; Mr. J. Tainton, Chalford; T. R.; Major R. G. Turner, Saharanpur; T. M.; Mr. D. Thomas, Lond.

V.—Virol, Lond., Secretary of; V. S.

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Z.—Messrs. C. Zimmermann and Co., Lond.

The Huxley Lecture

ON

THE HEREDITARY ASPECTS OF NERVOUS AND MENTAL DISEASES.

Delivered at the Opening of the Winter Session at Charing Cross Hospital on Oct. 3rd, 1910,

BY F. W. MOTT, M.D. LOND., F.R.S., F.R.C.P. LOND.,

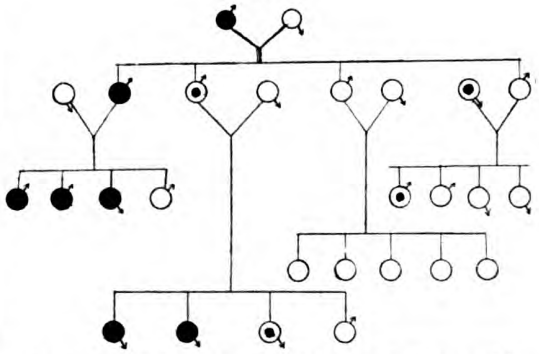
PHYSICIAN TO THE HOSPITAL; PATHOLOGIST TO THE LONDON COUNTY ASYLUMS; FULLERIAN PROFESSOR OF PHYSIOLOGY, ROYAL INSTITUTION.

MR. CHAIRMAN,—Permit me to thank you and my colleagues of Charing Cross Hospital Medical School most cordially for the great honour conferred upon me by the request to deliver the Huxley Lecture this year. When I look back on my distinguished predecessors I feel that, with this honour, there is a great responsibility, for it is not an easy task for me to deliver a lecture worthy of the occasion; and I felt, therefore, some difficulty in the selection of a subject. I was, however, guided in my selection of the hereditary aspect of nervous and mental diseases by the following facts. Heredity is a subject that the master mind of Huxley illuminated in several of his essays, and it is fundamental in the study of the Origin of Species and Natural Selection, which he did so much to forward. Next, recent developments in our knowledge of the subject of heredity owing to the labours of Galton, Pearson, and their followers in the study of biometrics, and Bateson and his followers in Mendelism, have aroused the keenest interest in the subject of human inheritance, not only in the medical profession, but in the thinking and intellectual portion of the nation. Another reason was that none of the illustrious lecturers in the past have dealt with the subject of heredity in relation to disease. Lastly, it is a subject to which I have recently devoted a large amount of attention in the study of the causation of nervous and mental diseases, and more especially the relation of heredity to various forms of insanity. The wealth of material in the London County Asylums has permitted a biometric investigation in a novel manner. The subject is one of national importance and interest, and it affects many social and legislative questions. The interest taken by the general public in the question of heredity is a sign of social progress. People are recognising the truth of Thomson's saying, "The present is the child of the past; our start in life is no haphazard affair, but is vigorously determined by our parentage and ancestry; all kinds of inborn characteristics may be transmitted from generation to generation."

DOCTRINES OF HEREDITY.

Fifty years have elapsed since Huxley wrote an essay on the Origin of Species in the *Westminster Review*, and the doctrine of Natural Selection which he upheld with such remarkable force remains unshaken and unshakable, but mutation or discontinuous variation has replaced in great measure the continuous accumulation of small differences to which Darwin attributed so much importance in evolution; and it is interesting to note that Huxley in this same essay said, "Mr. Darwin's position might, we think, have been even stronger than it is, if he had not embarrassed himself with the aphorism, *Natura non facit saltum*, which turns up so often in its pages. We believe that nature does make jumps now and then, and a recognition of the fact is of no small importance in disposing of many minor objections to the doctrine of transmission." Huxley cites the case of the Ancon sheep, also an interesting pedigree of polydactylism narrated by Réaumur. I will show a diagram (Fig. 1) illustrating this condition in three generations. Réaumur narrates this case only as far as the third generation, and Huxley remarks: "Certainly it would have been a curious thing if we could have traced this matter any further; had the cousins intermarried, a six-fingered variety of the human race might have been set up." In the light of the Mendelian law of gametic segregation even this would not be necessary, for a variation is "not swamped out." But sexual selection would tend against the perpetuation of this variation, which does not serve a useful purpose, nor is it an ornament. Huxley in another essay on Hereditary Transmission and Variation refers to the different product of crossing a stallion with a she ass, and a male donkey with a mare. "Here you see is a most curious thing; you take exactly the same elements, Ass and Horse, but you combine the sexes in a different manner and the result is modified accordingly. Here, then, is one and perhaps a necessary cause of variation." There is in these instances a prepotency of the male in certain physical characters; for on the one hand when the donkey is the sire a mule is produced with the head, ears, and voice resembling that

FIG. 1.



Polydactylism. The circles with black centre indicate partial polydactylism. The black circles are complete polydactylism. The chart is very suggestive of Mendelism.

animal, when on the other hand the horse is the sire a hinny is the product, with head, ears, legs, and voice like the horse.

Again quoting Huxley: "A certain amount of variation is the necessary result of sexual propagation itself; for inasmuch as the thing propagated proceeds from two organisms of different sexes and temperaments, and as the offspring has to be either of the one sex or the other, it is quite clear it cannot be a diagonal of the two or it would be no sex at all; it cannot be an exact intermediate form between that of each of its parents; it must deviate either to one side or the other. You will have noticed how very often it may happen that the son shall exhibit the maternal type of character, or the daughter possess the characteristics of the father's family."

The law of ancestral heredity of Galton supposes that every ancestor of a particular individual contributed its quota to the heritable qualities of the individual. The law also states that the average amount of resemblance between an individual and any particular ancestor is capable of definite numerical expression. Thus the mean amount of correlation between (1) the two parents and the offspring; (2) the four grandparents and that offspring; and (3) the great-grandparents and that offspring, and so on backwards in the ancestral lineage, is believed to diminish in a geometrical series one-half, one-quarter, one-eighth, which is the same for all organisms and their characters. Pearson represents a more rapidly diminishing series: (1) for the two parents, 0·6244; for the grandparents, 0·1988; for the great-grandparents, 0·0630, &c. We thus have a mosaic of ancestral characters.

It is quite possible that the above represents correctly the average total contributions of ancestors when applied to the race as a whole, but it cannot be universally applied to individuals, for, according to Mendel's theory of inheritance, certain ancestors may contribute nothing to the constitution of certain offspring in respect to certain characters. Moreover, as Maudsley truly says, it is a conclusion which, however true on the average of such simple characters as height, is manifestly not true of individual cases. Anyone selecting for observation different characters—e.g., noses or ears—can see plainly the nose may be like the father's or the mother's, or perhaps one of the grandparent's or further back. This fact was well known to the ancients, and, according to modern ideas of heredity, there is not much to be said against the teaching of Lucretius.

"Sometimes, too, the children may spring up like the grandfathers, and often resemble the forms of their grandfather's fathers, *because the parents often keep concealed in their bodies many first beginnings mixed in many ways, which first proceeding from the original stock*, one father hands down to the next father and then proceeding from these, Venus produces forms after a manifold chance and repeats not only the features but the voice and hair of forefathers, and the female sex equally springs from the father's seed and males go forth equally from the mother's body, since these distinctions no more proceed from the fixed seed of one or other parent than our face and bodies and limbs. Again, we perceive that the mind is begotten along with the body and grows up together with it, and grows old along with it." The individuality of every human being depends upon the mingled natures of two separate parents, and Goethe poetically refers to his own hereditary endowments in the following lines:—

"Vom Vater hab ich die Statur,
Des Lebens ernstes Führen,
Vom Mütterchen die Frohnatur
Und Lust zu fabulieren."

According to the Mendelian doctrine of dominant and recessive, the corresponding character of the second parent always exists in the offspring side by side with the character which finds expression, only the former, termed recessive, is obscured by the latter, the dominant. This is the explanation of a characteristic feature of a particular grandparent which was not visible in the parent reappearing in the child (*vide* Fig. 1). It also accounts for those heritable diseases and abnormalities which are transmitted by the females in ancestry and appear in the males—e.g., hæmophilia, Daltonism, pseudo-hypertrophic paralysis. As it passes from a father through a daughter to a grandson, and so on, it must be latent in the germ cells (concealed in the body) though for some obscure reason it has not found expression. In fact, non-expression of a disease does not necessarily imply non-inheritance of a disease, rather a predisposition to disease. It is well known that a hereditary tendency to nervous disease may have different expressions in successive generations—e.g., insanity and epilepsy; the hereditary transmission of nervous or mental disease is rather of the nature of a neuropathic tendency, the character of the disease being largely determined by the exciting cause. I have not time to discuss further the large question of Mendelism in relation to human inheritance, so far I have not met with any cases in entire support thereof, in the study of the hereditary aspect of nervous and mental disease, but, as pointed out by Professor Bateson, there are many reasons why it has not been found applicable. Of its enormous importance to biology and heredity there can be no question; even Professor Pearson, its most strenuous opponent, said, "The importance of Mendel's work and his followers lies in the observation of segregation"—this great fact holds whether Mendelism in its simple form remains or not.

THE RARER NERVOUS DISEASES AND HEREDITY.

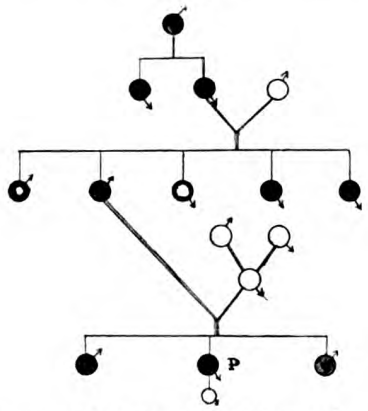
Among the rarer nervous diseases in which it is generally recognised that heredity plays an important part may be mentioned myotonia congenita, pseudo-hypertrophic paralysis, progressive muscular dystrophy (especially the Landouzy-Dejerine facio-scapular type), the neuritic type of progressive muscular atrophy, hereditary ataxia, Huntington's chorea, and family periodic paralysis. In nearly all the recorded cases of myotonia congenita (Thomsen's disease) the disorder has existed in several relatives of the patient, generally in one of the parents and in the patient's brothers, sisters, and children. More than 20 cases of the kind occurred in the family of Dr. Thomsen in four generations. It is to him that we owe the first accurate description. As in Huntington's chorea (a remarkable pedigree of which I shall show you), other neuroses frequently occur in the family tree. Many of Thomsen's relatives were affected mentally. Sir William Gowers in the recent discussion on heredity in relation to disease at the Royal Society of Medicine referred to the frequency with which pseudo-hypertrophic paralysis is hereditary; he likewise pointed out that the disease is characterised by sex limitation, and cited a very remarkable case, in which the disease, although not affecting the females, passed through to the males in several successive generations; there were two families and probably both originated in the same stock. Again, he referred to a remarkable case of facio-scapulo-humeral atrophy (Landouzy-Dejerine type) which could be traced for six generations.

Family periodic paralysis is a rare disease with a well-marked hereditary tendency. It is characterised by periodic attacks of more or less extensive flaccid motor paralysis with a loss of electrical excitability in the paralysed muscles and of the reflexes, but without sensory affection or disturbance of consciousness. Between the attacks the patient is well. In a family recorded by E. W. Taylor there were 11 cases in one generation; in the family of a patient of Goldflam there were 11 cases on the maternal side, and Holtzapple observed 17 cases in four generations. The disease may be transmitted indifferently through the father or the mother, although occasionally there has been limitation of transmission to the same sex. As in other diseases with a similar hereditary character, individual cases may occur in which there is no family history of the disease. A remarkable case of neuritic progressive muscular atrophy, showing that it might be of a hereditary character, was reported by Herringham; the disease was transmitted by females, but only males were affected. The disease, however, may be transmitted by both males and females, and both sexes are affected.

Friedreich's disease, although called hereditary ataxia, is seldom directly hereditary—it is a familial disease. Several families and several isolated cases have come under my observation, but in the isolated cases no family history of the disease in ascendants was found, nor was it in the two cases affecting a number of members of the family; in one of these there was a history of consanguinity, the parents of this family of hereditary ataxia cases being first cousins. A remarkable pedigree of hereditary ataxia worked out by Sanger Brown, however, shows the disease occurring in five generations of a family. Gordon Holmes states that Schoenborn found a family incidence in 114 of the 200 cases he analysed. Yet in a not inconsiderable number of recorded cases the same disease occurred in the ascendants or in the collateral lines. It may be transmitted through either males or females. Occasionally there is not direct heredity, but the disease occurs in families in which there seems to be a proclivity to spinal disease; for instance, a pedigree which I obtained at Darenth Asylum showed this relationship; moreover, occasionally, as this pedigree showed, it may be associated with idiocy. Nolan and Pritzsche have recorded cases associated with progressive idiocy.

I will now pass on to the consideration of a disease which I have met with occasionally in the asylums—viz., Huntington's chorea, in which a direct heredity has been found practically in all the cases studied. The accompanying pedigree (Fig. 2) is a striking one kindly furnished to

FIG. 2.



Paternal great-grandfather suffered with chorea—also paternal grand-mother and sister. Two paternal aunts and father suffered with chorea and died in asylums or infirmary—brother and sister physically unsound. P., the patient chorea and insane, one brother in asylum and one died. It will be observed that the maternal side is quite free from any taint.

me by Dr. C. H. Bond of Long Grove Asylum, under whose care is the patient of the fourth generation. Huntington, who first gave a complete picture of the disease, and after whom it was named Huntington's chorea, remarks:

"If one or both of the parents have shown manifestations of a serious nature, one or more of the offspring almost invariably suffer from the disease if they live to adult life, but if by any chance these children get through life without it, the thread is broken and the grandchildren or great grandchildren may rest assured that they are free from the disease. Unstable and whimsical as the disease may be in other respects, in this it is firm; it never skips a generation to manifest itself in another; as soon as it has yielded its claims it never regains them." Huntington also remarks upon the presence of the nervous temperament in all, or nearly all, of the families in which there is the taint of this disease, and says "that nervous excitement to a marked degree almost invariably attends upon every disease these persons may suffer from, although they may not in health be over nervous." Heilbronner states that there is a tendency in successive generations for the onset of the disease to be delayed, and Wollenberg has shown as this pedigree very clearly indicates, that choreic heredity in some cases may be transformed into other neuroses—i.e., epilepsy, imbecility, paranoia, grave hysteria, &c. Wollenberg has collected statistics of 128 cases in 22 families, of which 74 were in men and 54 in women, thus confirming Huntington's statement that it is more common in men than in women. Again, it was observed by Huntington that "the tendency to insanity, and sometimes that form of insanity which leads to suicide, is marked, and the mental condition usually terminated in dementia." In several cases a microscopic examination revealed a marked neuronic atrophy, with some neuroglia hyperplasia of both the frontal lobes, including also the central convolutions. Changes in the Betz cells have been described which might be correlated with the motor disorder manifested during life. I have observed changes of an abiotrophic character in the Betz cells in paramyoclonus multiplex affecting four members of a family; an uncle was an epileptic, but no other ancestral defect was discovered.

These forms of nervous disease are usually due to characteristic morphological defects, and for the most part are best explained by germinal defects in the specific vitality of groups of muscles or systems of neurons whereby they waste prematurely. Sir William Gowers has introduced the term of abiotrophy for this condition. From a practical point of view on account of their rarity abiotrophies are of little importance as compared with insanity and epilepsy, to which I shall now direct your attention.

EPILEPSY.

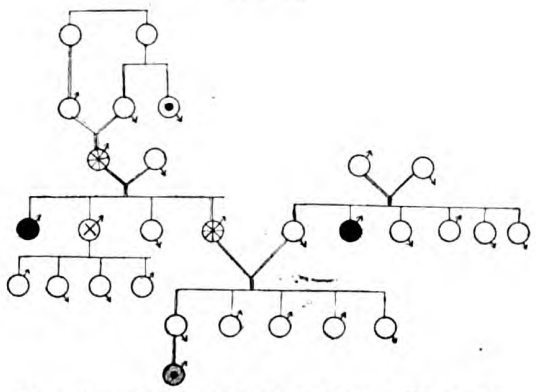
With regard to epilepsy I feel convinced from my own observations and experience that Sir William Gowers is correct when he asserts that there are few diseases in the production of which inheritance has a more marked influence and the traceable influence is always far less than that which exists. Voisin, Ferè, Nothnagel, Dana, Peterson, and Aldren Turner express similar opinions.

In the discussion of the subject of heredity and disease Sir William Gowers said: "In my own enquiries into the heredity of epilepsy I have limited myself to these two maladies, epilepsy and insanity. Heredity was ascertained in 39 per cent. of 1193 males and 43 per cent. of 1207 females. When epilepsy itself occurred in a parent it was the father who was epileptic in 49 per cent. and the mother in 51 per cent. The cases with insanity in a parent are only one-third the number compared with parental epilepsy. Of the cases with parental insanity the father was insane in 37 per cent. and the mother in 63 per cent. One effect of heredity is to increase the female cases. When it was absent the excess of males amounted to 4 per cent., but in cases of heredity the same excess was presented by females. This is partly due to the fact that inheritance is more frequently from the mother's side by 17 per cent., and that the females are in excess by 18 per cent." These facts (obtained by Sir William Gowers) are in many ways in striking conformity with the results obtained by my investigation of insane relatives in the London county asylums as regards certain types of insanity which I shall shortly relate. Moreover, I have observed that a similar heredity occurs in a considerable number of cases of insane epileptics, at least 20 per cent. Spratling from his large experience at Craig Colony gives 16 per cent. of similar heredity.

HEREDITARY CAUSATION OF INSANITY.

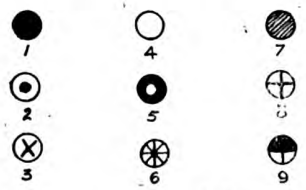
There are a few alienist physicians who do not have a strong belief in the hereditary causation of insanity, and my esteemed colleague, Dr. C. A. Mercier, at the discussion on heredity said: "When we are confronted with the percentage of persons among whose near relatives insanity is known to exist we cannot fail to be impressed with two remarkable facts, first how relatively small their percentage is, and second, that the statistics, even if taken at their face value, do not purport to be anything but an *enumeratio simplex* and cannot be made the basis of any valid conclusion until they are compared with similar statistics of the percentage of insane relatives among the sane." He also stated that the published statistics are of no value at all for any practical or scientific purpose. With this I would entirely agree, but in taking statistics among the sane population we should find that insanity and epilepsy would often occur in families where there are neuroses, eccentricity, and even genius, all of which were variations from the normal average of the species. I have endeavoured to ascertain what is the proportion of insane, feeble-minded, and epileptic members occurring in the pedigrees of my hospital patients; and I am greatly indebted to my house physician, Dr. W. R. Thomas, for the careful and painstaking way in which he has obtained information from the friends. In 32 pedigrees, which would include about 1000 living representative and 250 dead individuals, there were eight who had been in asylums and in eight others fits were chronicled. In no case was either parent of the patient insane or epileptic. Two of the pedigrees furnished most of the cases. (Fig. 6.) One was a patient suffering from neurasthenia in which there were, besides insanity and epilepsy, migraine, hysteria, deaf-mutism, and imbecility,

FIG. 3.



This pedigree shows a marriage of first cousins. The son possessed brilliant talents, likewise a grandson, but of two other grandsons, one was insane, another a suicide. The fourth generation are all sound.

The following is the key to this figure and all the remaining figures:—



1. Insane.
2. Physically unsound.
3. Suicidal.
4. Healthy.
5. Nervous disease.
6. Brilliant.
7. Died young.
8. Drunkard.
9. Drunkard and insane.

and the other a patient with exophthalmic goitre with several neuropathic members in the stock. I must confess that had I to prove my case by comparing the pedigrees thus obtained with some pedigrees obtained at the London County Asylums and Imbecile Asylum at Leavesden (20 non-selected pedigrees were kindly taken for me by Dr. F. A. Elkins and his medical officers), I should not have a very strong case, for in a very considerable proportion of the cases admitted to these asylums interrogation of the friends elicits no evidence of insanity on either side. Yet most alienist physicians would not agree with Dr. Mercier in casting doubt upon the importance of heredity in the production of insanity. I would rather say certain types of insanity. Many of the inmates of asylums

are suffering with congenital or post-natal organic brain disease; these conditions are certainly not due to inheritance. General paralysis of the insane, syphilitic brain disease, and softening from vascular disease are acquired conditions and should not be classed among the inherited insanities, nor should Korsakoff's psychosis and chronic alcoholism.

In all attempts, however, to ascertain what forms of insanity are especially due to inheritance there is always the difficulty of finding out by inquiry of the friends what was the nature of the insanity, not only because the friends do not know, but also because different opinions may be held by the medical men who have had charge of the cases, and different systems of classification and terminology have been used. Therefore, any statistical inquiry formed upon pedigrees the data of which are based *solely* upon information which has been obtained of friends of the patient may have several radical faults. The lack of statistical evidence of heredity in relation to feeble-mindedness was noticed by Sir Francis Galton in his comments upon the Report of the Commission on the Feeble-minded, and yet the opinion of experts was unanimous in favour of the importance of heredity as a causal factor.

Two years ago an experienced biometrician and scientist, Mr. Edgar Schuster, kindly undertook to coöperate with me in the study of the convolutional pattern of the brains of relatives dying in the asylums, with a view of seeing whether, just as there is a similarity of physiognomy in the members of the same family, there is also a similarity in the convolutionary pattern. An inquiry was initiated concerning relatives at the various asylums, and a request was made that brains of relatives should be kept for examination after the necropsies had been made. Isolated instances of two or more members of the same family were known to exist by me in the various asylums; but it soon became evident that a properly coördinated card system would reveal the fact that a *very large number* of parents and offspring and brothers and sisters, besides collateral relatives, were resident in the London County Asylums, or had been recently. In June the numbers had risen from a few hundred known instances to 1834 (763 males and 1071 females), and since then, owing to a newly opened asylum not having then furnished full reports, and owing to the fact that fresh cases are continually turning up at other asylums, the numbers have now reached 2000. These instances have been afforded by the records of patients under observation during the last two years, and include their relatives who have died in, or who have been discharged from, the London County Asylums previously. A large number of cases of recurrent insanity are included in these instances—e.g., one case has a record of 23 admissions—and during the time taken for the collection of the above cases several of them have been discharged and readmitted; but at the present time it is computed that over 60 per cent. of the relative cases are still resident in the London County Asylums. But this list does not include patients with relatives in the asylums of the Metropolitan Asylums Board, nor patients with relatives in other asylums in Great Britain and Ireland.

Before proceeding to give further details of the inquiry I wish to express my indebtedness to the clerk of the asylums and the superintendents and medical officers for the valuable assistance they have afforded me in obtaining information.

STATISTICAL DATA RELATING TO INHERITANCE OF INSANITY.

The 1834 cases are made up from 854 families as follows: 2 instances of 6 of a family, 3 instances of 5 of a family, 12 instances of 4 of a family, 85 instances of 3 of a family, and 752 instances of 2 of a family. Of the 752 instances of 2 of a family, making in all 1504 cases, it will be observed that the vast majority are directly, and not collaterally, related. Another fact stands out prominently in an analysis of the 752 instances of 2 of a family, and that is the much greater incidence of transmission from parents to offspring through the female side as the following figures show:—

Parental Heredity.

		Males.	Females.
Father and son	44 instances	88	—
Mother ,,	51 ,,	51	51
Father and daughter	58 ,,	58	58
Mother ,,	104 ,,	—	208
	297 ,,	197	317

It will be observed that the mother transmits to the offspring in the proportion of 60·7 per cent., the father 39·3 per cent. This is not accounted for wholly by the fact that there are more females in the asylums insane than males, for the ratio of females to males in the asylums is rather less than 11:8. Sir William Gowers in his statistics regarding insanity in the parents and epilepsy in the offspring observed that in cases with parental insanity the father was insane in 37 per cent. and the mother in 63 per cent. This, he says, is partly due to the fact that inheritance is more frequently from the mother's side by 17 per cent., and that the females are in excess by 18 per cent. It will be observed that these figures of mine closely correspond with his on the transmission of insanity from mother and father to offspring.

Cofraternal Heredity in Two of a Family.

		Males.	Females.
Two sisters	130 instances	—	260
Two brothers	87 ,,	174	—
Brother and sister	136 ,,	136	136
		310	396

The above table shows when pairs of offspring of the two sexes are affected the proportion of males to females is 43·9 per cent. to 56·1 per cent., a difference of 12·2 per cent. But the percentage in which the mother transmits insanity to the offspring as compared with the father is as 60·7 per cent. to 39·3 per cent., a difference of 26·4 per cent., and this increase of 14·2 per cent. is mainly due to the fact that she transmits to the daughter nearly twice as often as the father does. It may well be asked whether this may not partly be due to the fact that the daughter, at the time of life when insanity is manifested, is more at home than the son, and therefore has more to do with her insane mother.

Grandparents' Heredity.

Female with insane grandfather	1 instance.
Male ,, ,, ,,	1 ,,
Females with insane grandmother	6 instances.
Males ,, ,, ,,	5 ,,

This is undoubtedly very much below the proper ratio; it is due to the fact that there is far more difficulty of obtaining records. The hereditary transmission from females, however, markedly preponderates.

Collateral Insanity.

Female with uncle	12 instances	Male with uncle	11 instances
Female with aunt	33 ,,	Male with aunt	11 ,,
	45 ,,		22 ,,

There is here a more marked preponderance of females affected than males than in direct heredity, but the numbers are too few to draw any very decided conclusions, except the fact that the females with aunt affected are as numerous as all the rest combined.

The proportion of collateral relatives discovered in the London County Asylums is comparatively small for several reasons: the information is not so readily obtainable, and they are less likely to come into the same asylum, as their residence is not nearly so likely to be in the same district or county as that of parent and offspring.

I have analysed the above figures, only taking into account near blood relations (parents and offspring, brothers, sisters, or brothers and sisters) where two or more representatives of the family *are now* resident in the London County Asylums. The following figures show that of an average insame population of approximately 20,000, 717 cases are thus related, representing 342 families. We may ask the question, Should we find in 20,000 adults, living in the County of London, which some random non-inheritable cause had collected together, this proportion of direct relationship? I think not.

The figures, to my mind, in a broad way, are eloquent in favour of the importance of heredity as a cause of insanity, and the numbers being great, the data indisputable facts, independent of the personal equation of the inquirer, enable satisfactory statistics to be made and inferences to be drawn in regard to certain points relating to the hereditary aspect of mental disease.

Analysis of Instances where Two of a Family (near Blood Relations) are now Resident in the London County Asylums.

	Cases.		Cases.
Father and son	34	Two sisters	144
Father and daughter	58	Two brothers	80
Mother and son	44	Brother and sister	160
Mother and daughter	102		

making a total of 622 cases, representing 311 families. In addition to

the above there are 95 cases in which *three* (and in two instances four) members of the same family *are now* insane residents in the London County Asylums—31 families. Thus the grand total is 717 cases, representing 342 families.

TENDENCY TO INHERITANCE OF DIFFERENT TYPES OF INSANITY.

When taking part in the discussion at the Royal Society of Medicine on Heredity and Disease, I expressed the opinion that, without then being able to give any precise data, the investigation I was conducting had led me to conclude that we should find among these relatives in the asylums certain types of insanity exhibit a more marked tendency to inheritance than others, and I enumerated recurrent or manic-depressive insanity, delusional insanity and the insanity of adolescence (dementia præcox), and imbecility as having this tendency most marked. Moreover, I observed that cases of general paralysis were relatively few in number. In the light of modern views as regards the causation of general paralysis being due to syphilitic infection, I was not surprised to find my inference was correct. Again, in the evidence which I gave before the Royal Commission on the Feeble-minded I pointed out that during the eight years ending Dec. 31st, 1902, there were 8933 patients discharged from the London County Asylums as recovered; the percentage of readmissions was 25·59, and one-half of these cases were readmitted within 12 months of their discharge. The clinical records showed that a considerable number of these readmissions were cases of recurrent insanity termed "recurrent mania" and "recurrent melancholia"; the more modern term for this periodic insanity is manic-depressive insanity. But by whatever term it is called there is one feature—viz., periodicity. When I inquired into the family histories of these cases I found insanity in other members of the family in 55 per cent., even though I did not eliminate those cases which were not visited by friends, and there was no record regarding inheritance; moreover, I found particulars of many relatives of patients being in the asylum at the time or who had previously been in there or died there. These observations were made at Colney Hatch Asylum, where the superintendent, Dr. W. J. Seward, had for a long time been in the habit of taking the history himself from the friends who visited. I may add that this asylum has afforded valuable information in this research, partly because it is an old asylum with records often of three generations, and partly because, containing, as it does, all the Jews, one has the opportunity of comparing the incidence of inheritance of this race with the non-Jewish population. I am indebted to Dr. Seward for the following statistics relating to the percentage of relatives among the Jewish and non-Jewish population. The number of cards belonging to Jews is 80, the number belonging to non-Jewish inmates is 254. The total number of inmates is 2450, and of these 459 are Jews. So that rather less than one-fifth of the total population is Jewish. A little more than one-fourth of the relative cards belong to Jews, so that the incidence of ascertained relationship among the Jewish inmates is considerably more than among the non-Jewish. No doubt the temperament of the Jews renders them as a race more liable to the neuropathic tendency; but the greater incidence of ascertained relationship among the Jews is partly due to the following facts: They are more often visited by their friends. They have more pride of family, know more about their family, and, as a general rule, are more intelligent and anxious to afford information.

Statistics are often distrusted when an inquirer sets out to find something. I was therefore fortunate in having the coöperation of such an unbiassed statistician skilled in biometrics like Mr. Edgar Schuster. The cards were all sent to him for an independent and unbiassed investigation; his valuable report is published in the forthcoming annual report of the Asylums Committee, but I will summarise his results in great part in his own words.

There were 319 pairs of parents and children; of these the children in 69 cases suffered from periodic insanity. Of the 69 so afflicted 28, or 40·6 per cent., had parents similarly affected, while in 59·4 per cent. the nature of the parent's disease was different. Of the remaining 250 children only 41, or 16·4 per cent., had parents suffering from periodic insanity. Bratz working at Wuhlgarten Asylum, Berlin, on similar lines has obtained similar results, but as yet he has not published any statistics. He speaks of this similarity of insane inheritance as a Vererbungskreis.

There was even greater similarity of insane inheritance between brother and brother, between sister and sister, or between brother and sister, when suffering from this form of insanity, than between father and mother and son and daughter. Thus there were 200 pairs in which the first brother or sister was periodically insane, and in 92, or 46 per cent., of these pairs the second member also suffered with manic-depressive insanity, while in the remaining 108, or 54 per cent., the two members differed in the nature of their disease.

Where the first brother and sister suffered from some other form of insanity, in only 13·8 per cent., as compared with 46 per cent., was the other member afflicted with periodic insanity, while in 86·2 per cent. were other forms associated together. This indicates similar cofraternal inheritance more than three times as frequent in recurrent insanity as in other forms. Allowing that the term "recurrent" may have been used sometimes for a second attack of mania or melancholia which was not truly a manic-depressive insanity, still it would not account for this vast difference when dealing with such a number of cases.

Delusional insanity.—Although the numbers dealt with are many fewer, yet Dr. Schuster's statistics show that the tendency of this disease to run in families is more strongly marked than between parents and offspring. The tables he gives show that delusional insanity occurs with almost four times as great a frequency (33·3 per cent. instead of 9 per cent.) than among the insane parents of other insane people, while among the brothers and sisters the frequency is just six times as great (43·2 per cent. instead of 7·2 per cent.). There is a decided tendency for the brothers and sisters of imbeciles to be also imbecile.

In dementia præcox there is a strong correlation between members of the same cofraternity. Seeing, however, that quite 80 per cent. of the cases of this form of insanity occur before the age of 25, it is not surprising to find Schuster had no available material for statistics on parents and offspring. Perhaps the term "insanity of adolescence" is a better one than "dementia præcox." The report also shows a strong correlation between brothers and sisters when affected with chronic mania or melancholia, but the numbers are perhaps too small to draw any very definite conclusions.

With regard to general paralysis he found no indication of this disease running in families. The brothers and sisters of general paralytics seem no more likely than anybody else to be themselves general paralytics, and the same may be said about their children. Of the very few cases of juvenile general paralysis recorded, only one is the son of a general paralytic.

The second problem enunciated was, Is there any tendency for members of the same family (as in some hereditary nervous diseases) to become insane at similar periods of their lives? Seeing that adolescence is the period in which stress is likely to affect the individual with an insane inheritance, it is not surprising that Schuster in his report states that "a strong tendency exists for brothers and sisters of the same family to become insane at similar periods in their lives, and only a slight one between parents and children."

APPEARANCE OF THE BRAIN.

Since certain forms of insanity exhibit so much greater tendency to similarity of type in parents and offspring and brothers and sisters, it may be concluded that *these are the types* in which an inheritance of a tendency to insanity is three or four times as great as in other forms. Now we may ask ourselves the question, Is there any correlation between the macroscopic and microscopic appearances of brains of persons suffering from manic-depressive insanity, delusional insanity, epilepsy, and insanity of adolescence where there is no terminal dementia? It would be difficult in the vast majority of cases to discover any abnormal morphological change, nor would microscopic investigation afford much (if any) help in the elucidation of these psychoses. Indeed, I know of only one form of insanity that is really (as I have already said) an acquired organic disease—namely, general paralysis—which on macroscopic and microscopic investigation of the brain post mortem shows such change in the organ of mind as to justify a diagnosis of the form of

insanity which had affected the individual during life. I do not mean to say that these psychoses may not eventuate in a dementia, and then changes may be found in the brain.

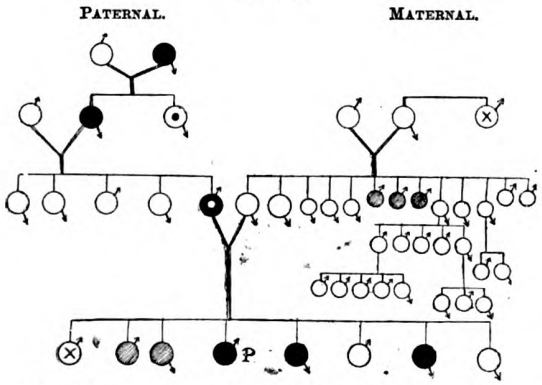
There is a disease affecting Jewish children which is quite specific in the changes observed in the brain and nervous system: I refer to so-called "amaurotic idiocy." Why it should affect only Jewish children and occasionally occur in several members of the same family is not known; nor is it explicable unless it be by an abiotrophy due to some racial hereditary condition. This disease shows a pathological change quite unlike any other disease of the nervous system that I have seen; the Nissl substance disappears from without inwards towards the nucleus, and eventually the nucleus itself dies and the whole cell undergoes a true fatty degeneration; the neurons which were the last developed are the first to go—thus the pyramidal layer of the cerebral cortex shows this fatty degeneration much more markedly than the subcortical neurons.

SOME PEDIGREES ILLUSTRATING INHERITANCE.

Every insane patient should be considered as a biological study. To say, merely, that one of his ancestors was insane and therefore he has a bad heredity, and to label him thus, as is the common custom, is absurd. What we wish to know is what he was born with and what has happened to him since birth. I have found that a conversation with the mother will very much help in understanding the causes which have led up to the mental breakdown, and she is often able and generally very willing to tell all she knows about the family. I am speaking only of the poorer classes.

The causes of insanity are seldom simple; they are in varied degrees inborn tendencies combined with some form of mental or bodily stress. I use the word "stress" in its widest sense as implying a strain on the important organs and functions of the body. But it is not within the province of this lecture to deal with these causes of insanity, for my object is to dwell upon the elucidation of what were probably the inborn tendencies. The construction of a pedigree will often answer the question, Did the patient come from a good stock on both sides, or was there physical or mental defect or both on maternal or paternal or on both sides? The fact that a cousin was insane, or even several members of a large stock, does not show a bad heredity; often, indeed, with several insane members there will be found men of genius and men and women of great civic worth (*vide* Fig. 3). A bad stock is where we find degeneracy, insanity, drunkenness, and criminality in the pedigree (Fig. 4), or a general low standard, mental and physical, in both stem and branches of the family tree. The general tendency is for insanity not to proceed beyond three generations, and I have only three such records. As a rule, there is either a regression to the normal or the stock dies out. Not infrequently the stock

FIG. 4.



The patient, P, was a murderer, a brother committed suicide, and two sisters were insane; although there was a suicide on the maternal side the insane tendency came mainly from the father's stock.

dies out by the inborn tendency to insanity manifesting itself in the form of congenital imbecility or insanity of adolescence —dementia præcox. (Fig. 5.) Such patients are especially prone to die from tuberculosis; thus "rotten twigs are continually breaking off the tree of life." (Figs. 8 and 10.) I will illustrate these facts by some examples of pedigrees.

Consanguinity does not appear to produce insanity or nervous disease provided both stocks are free from taint, but if there is insanity or epilepsy, not necessarily in the first ascendants, but even in the collaterals, then intermarriage of first cousins from these two stocks with collateral insanity will tend to insanity, in some cases very marked, in the offspring of the two sane related parents.

FIG. 5.

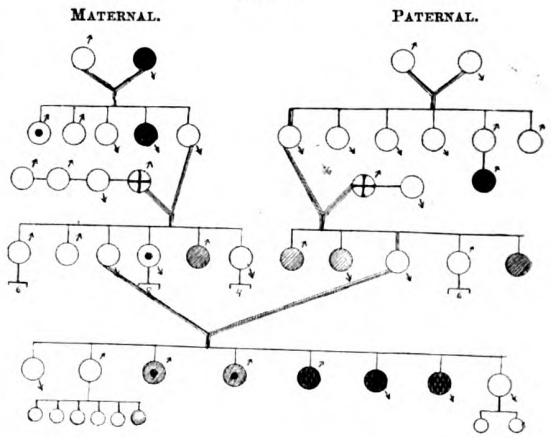
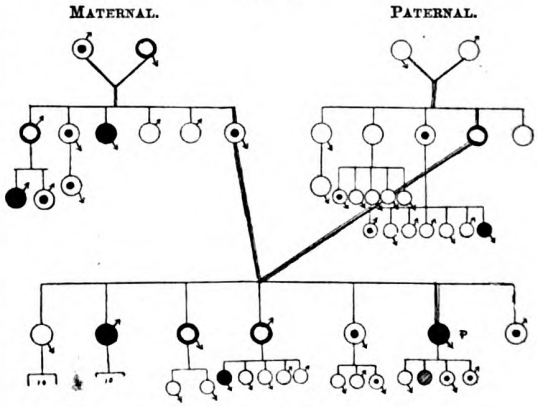


FIG. 6.

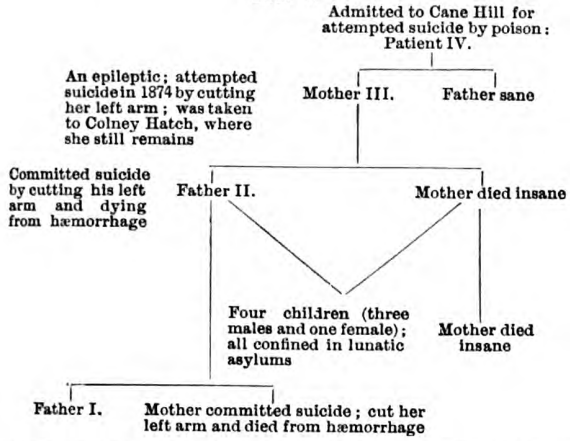


This pedigree is of a hospital patient P. suffering with neurasthenia and mental symptoms. It will be observed that nervous disease and insanity affect a number of members, especially on the maternal side.

I have observed in many of these pedigrees, but have not as yet compiled precise data, that manic-depressive insanity in a stock is frequently associated with suicide in the members so affected, and even in others not affected. The tendency to suicide often runs in families, and some remarkable pedigrees have been published in which members of families in successive generations have taken their lives in a particular way, and sometimes even at a particular age; there is a suicidal obsession. Morel mentions an instance where seven brothers destroyed themselves though in good position and suffering no misfortune. Mudge in the first number of the *Mendel Journal* has published a remarkable pedigree of two families that were united by marriage. In one the members committed suicide by drowning, the other by shooting. I would explain this by imitative suggestion acting on a neuropathic stock. A member of a family of four generations of suicides, of which two were inmates of the London County Asylums—namely, Colney Hatch and Cane Hill—and the pedigree of which I will now show you,

affords a striking example of suicide and insanity in successive generations:—

FIG. 7.



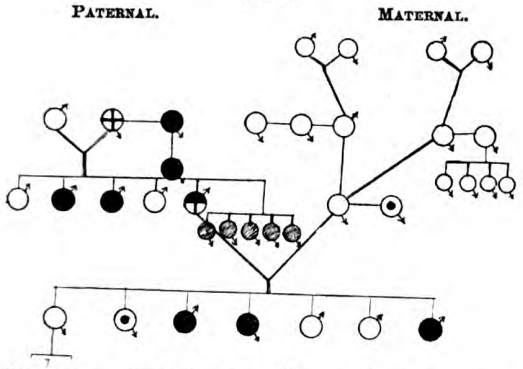
It will be observed that in three successive generations suicide was attempted or committed by cutting the left arm.

Another interesting case of a suicidal family in which a member developed impulsive obsessions of suicide and automutilation occurred at Cane Hill Asylum and was published by Dr. H. Devine, accompanied by interesting observations on the subject. The development of the obsessions in the patient dated from the aunt's suicide, which is a proof that suggestion was the cause, acting in conjunction with insane inheritance.

ALCOHOLISM.

The vexed question of transmission of acquired characters, specially in relation to alcoholism, is one of great importance and interest. That the germ cells are sequestered—"in the body and not of the body," therefore not participating in the biochemical changes which occur therein—and that in prolonged toxic conditions are uninfluenced in their nutrition and their specific vital energy, is contrary to reason. It may therefore be asked how it is, as so often happens, a chronic alcoholic may have offspring mentally and physically sound? The question is wrapped up in the causes which lead a man to drink, and my observations seem to show that a man who can drink continually for numbers of years and keep out of a lunatic

FIG. 8.

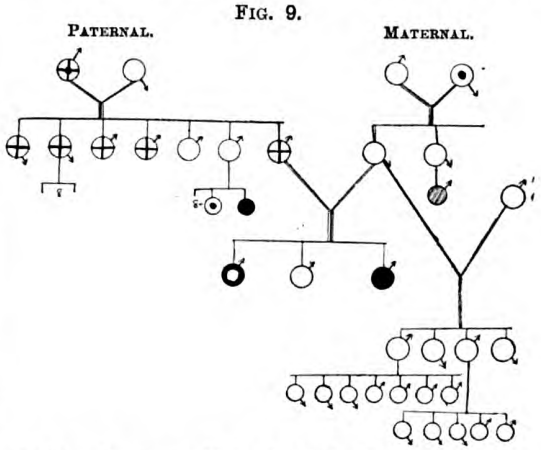


Drink and insanity in three generations; for description see text.

asylum, a prison, or a hospital, must have possessed an inherent stable physical and mental organisation, and he in a measure transmits this, the virility of the stock remaining potent in spite of the vicious habit, although it is undeniable that his offspring in all probability would have been stronger and better had he been a temperate man. Drunkenness in successive generations would undoubtedly lower the virility, and mental and physical degeneracy would result. Dr. Archdall Reid has expounded the tendency of the uncontrolled alcoholic type to work itself out and the same is true of other types.

I have often noticed that the children of chronic drunkards, especially when the father drank and the mother was temperate, are total abstainers. There can be no question that chronic alcoholism does figure largely in the pedigrees of patients admitted to asylums; but the same occurs—though I think not with such frequency—in the pedigrees of hospital patients. The accompanying pedigree (Fig. 8) was always regarded as a proof that alcoholism may be productive of insanity in several members of a family. The institution of the card system revealed the fact that there was collateral insanity (Fig. 8). I discovered that the sister of the drunken paternal grandmother died in Colney Hatch Asylum, where she was resident for 20 years, and her daughter, an imbecile, was at Leavesden. Further unbiased inquiries on these lines are very necessary. Occasionally I have met with a pedigree (Fig. 9), such as the one I show you, in

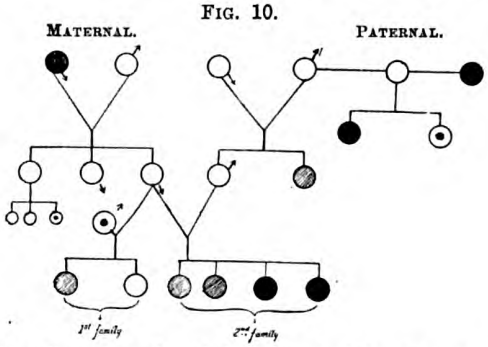
FIG. 9.



Pedigree of a woman with two husbands. By her temperate first husband a healthy stock; by her second drunken husband only one of them sound.

which a woman has had two husbands; by her first husband (a temperate man) she had a family of healthy children and numerous grandchildren; by her second husband (a chronic drunkard and one of a family of drunkards of several generations) she had three children, one with a muscular dystrophy, another an epileptic imbecile, and another apparently healthy. A few cases such as this may be a mere coincidence, but multiplied, seeing that they are almost of the nature of an experiment, would form a convincing argument in support of the injurious effects of alcohol on the germ cells. It has long been the opinion that chronic drunkenness of the parents leads to mental degeneracy in the offspring in the form of feeble-mindedness and epilepsy. With this I should

FIG. 10.



This pedigree shows the end of a degenerate stock. A woman of an insane stock marries twice; by her first husband there is one child living; by her second husband, presumably syphilitic, there are two born dead and two others in the asylum, one being a juvenile paralytic.

agree, but that the desire for alcohol is transmitted from parent to offspring, in the form of like begetting like instead of like begetting *a tendency* to like, is without foundation. What may be transmitted is the temperament

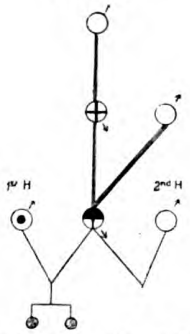
that induces alcoholism, a lack of will-power and moral sense. The transmission of an acquired character, such as the desire for alcohol, is contrary to the doctrine of heredity.

PEDIGREES OF IMBECILES, ETC.

In a number of pedigrees obtained from an imbecile asylum (Leavesden), for which I am indebted to Dr. Elkins, the superintendent, I observe (though the numbers are not sufficient yet to give any precise data) that the families are prolific, quite as prolific as those of the pedigrees of hospital cases, but there is relatively a larger number of deaths from various diseases, especially tuberculosis. Some family pedigrees show a large number of miscarriages and still-births associated with imbecility and epilepsy and occasionally juvenile general paralysis. The cause of this is syphilis. (Fig. 10.) The mental defect in a large number of these cases in imbecile asylums is undoubtedly due to organic brain disease and injuries at birth and after.

I have still another pedigree to show; it illustrates the transmission of a similar character and life in two generations and possibly three. (Fig. 11.) The grandfather was a

FIG. 11.



Two generations of drunken mothers and the stock of a great man is ended.

most distinguished man who lived to a great age, much respected. He had a daughter concerning whose mother no particulars were obtained. This daughter was a drunkard and of a defective moral character. She had a daughter who behaved in a somewhat similar manner, and is at present in an asylum; she has married twice. By her first husband she had two still-born children; by her second husband no children; fortunately this stock has died out.

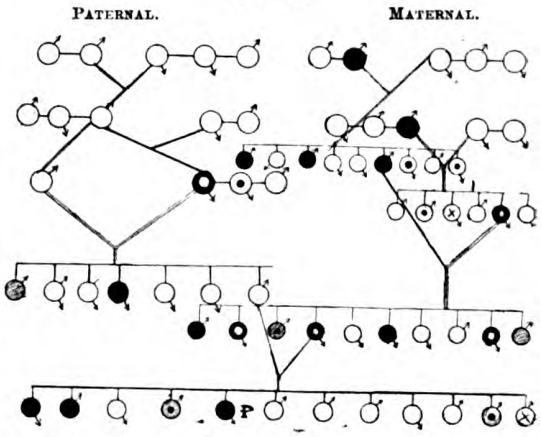
A study of pedigrees teaches us the truth of the conclusion which Maudsley emphasises in "Pathology of Mind": "First, that a person does not inherit insanity, but a tendency or predisposition; and, secondly, that the tendency is inherited from the stock." ..... "Nor need the unsound strain in the stock show itself in any form of actual insanity; it may appear in some allied nervous disorder, in hypochondriasis, in suicide, in epilepsy, in dipsomania, in weakness of mind, in neuralgias, in chorea, in stammering, in spasmodic asthma, in some periodical nerve storm of abnormal character; and conversely these disorders of one generation may in their turn forebode some form of insanity in the next generation." (Fig. 12.)

EUGENICS AND NATIONAL DEGENERACY.

With the spread of the knowledge of heredity and the interest shown among the intellectual and thinking classes by the study of such works as Whetham's "The Family and the Nation," more care will doubtless be taken in marriage selection; moreover, the cult of eugenics—literally good breeding—a term employed by Sir Francis Galton to denote the science and art of the improvement of the human race by the double process of multiplying the fit and eliminating the unfit—is daily gaining ground. Again, the study of heredity teaches that the measure of the physical, mental, and moral capacity of the individual for civic worth and usefulness depends largely upon inborn characters; you do not gather grapes of thorns or figs of thistles. Bateson has truly said, education, sanitation, and the rest are but the giving or withholding of opportunity. The diminishing birth-rate of the professional and middle classes with the high birth-rate and diminished infant mortality of the lower classes is now agitating the minds of many, but the fact nevertheless remains that Nature cares little about individuals or societies; it is mindful only of the species, and the instinct to propagate is so rooted in our animal natures that in the process of the mental evolution of man it has become the root and stem of the tree of life upon which have been grafted the moral virtues and altruistic sentiments which are most nobly personified in maternity. We can therefore understand how the Madonna and Child has appealed symbolically to the simple faith and devotion of countless millions.

An intellectual development, whether of the individual, or community, or race, that starves the natural instincts of love, marriage, parentage, and pride of family,—these, the noblest of all human aspirations, will pay the penalty, and

FIG. 12.



This pedigree of four generations is interesting on account of its completeness and by the large number of members of the stock on the maternal side which are affected with insanity, nervous diseases, and suicide; but there is not a single alcoholic on either the paternal or maternal side. The paternal stock is not free from taint, but the three cases of insanity and the suicide of the fourth generation, making up nearly half the living members, have for their parents a healthy father and a mother with nervous disease. It shows how necessary it is to study the maternal and paternal pedigrees in coming to any just conclusion about hereditary transmission.

one way in which the penalty for the starvation of this instinct will be paid for by advanced civilisation is the increase of the neurotic, self-regarding type of temperament, the forerunner frequently of neuroses and insanity.

We are constantly reminded of the fact that insanity is on the increase; in the last 15 years the London County Council has opened four new asylums and an epileptic colony, and is now building another huge asylum; loud is the cry of national degeneracy, but when people are feeling most pessimistic about a *natural* decay of the race it would be well, if they would remember this passage from a lecture by Huxley on "Harvey and the Discovery of the Circulation of the Blood": "I myself am of opinion that the memory of the great men of a nation is one of its most precious possessions—not because we have any right to plume ourselves upon their having existed, as a matter of national vanity, but because we have a just and rational ground of expectations that the race which has brought forth such products as these may, and in good time, under fortunate circumstances, produce the like again. I am one of those people who do not believe in the *natural* decay of nations, I believe, to speak frankly, that the whole theory is a speculation invented by cowards to excuse knaves. My belief is that so far as this old English stock is concerned, it has as much sap and vitality and power as it had two centuries ago, and that with due pruning of rotten branches and due hoeing up of weeds which will grow about the roots the like products will be yielded again. The weeds to which I refer are mainly three: the first of them is dishonesty, the second is sentimentality, and the third is luxury."

Abstracts
OF
INTRODUCTORY ADDRESSES, ETC.,
DELIVERED AT THE
MEDICAL SCHOOLS
AT THE
Opening of the Session 1910-11.

UNIVERSITY COLLEGE, LONDON.

INTRODUCTORY ADDRESS BY THE DEAN OF SALISBURY.

AT the opening of the Winter Session the chair was taken by Sir THOMAS BARLOW, President of the Royal College of Physicians of London, whose retirement from the active staff of University College Hospital has just been announced.

The DEAN OF SALISBURY said it was the admiration and affection with which he regarded medical men which compelled him to consent to undertake the responsibility and gave him his qualification in coping with the difficulty of addressing the students, teachers, and authorities of University College Hospital. He felt justified in saying that there never had been a clergyman who, during his tenure of a metropolitan living, had gathered around him in one church for nearly 30 years so large a number of men eminent in the medical profession as he had, and that fact was the pride of his life. It was the practice of his calling to take a text, as it was that of theirs to write a prescription. He would take as his text a section from the "Pensées" of Pascal, mathematician, physicist, philosopher, and man of science and ascetic piety: "Man is evidently made for thinking. This is his whole dignity and the whole of his merit. To think as he ought is the whole of his duty, and the true order of thinking is to begin with himself, his Author, and his end. And yet what is it that is thought in the world? Not one of these objects, but how to take pleasures, how to make ourselves kings, without ever reflecting what it is to be a king or even to be a man."

He impressed the necessity for realising the powers, potentialities, and special appetences with which man is endowed, but recognised that in this life time is wanting for a complete self-culture and development; and, moreover, the special subjects on which medical men must occupy the main power of their minds were impediments in the way of complete self-development, but concentration of all the mental energies in one direction must leave the other powers and capabilities of the mind unused and cause them to dwindle and die. Lord Morley had said: "One of the most narrow and what will eventually be one of the most impoverishing characteristics of our day is the excessive claims for physical science," from which other manifestations of intellectual activity need protection.

For artists, poets, and for many women such subjects as psychology, mathematics, and the exact sciences would tend to balance the mind and strengthen the judgment and make imagination the charm and not the master of life, but for them the realm of the fine arts was that into which they should make excursions for the refreshment and enlargement of their mental life. Some attention to architecture, painting, sculpture, music, and poetry should by a solemn determination always engage some of their energy. It might be said that such a discipline would only produce diletantism with variety for its inseparable accident; but was a little knowledge less desirable than complete ignorance or a dunce more admirable than a dilettante? Most of all he urged the claims of poetry and continued:—

Not so long ago one of the most learned scholars in Europe said to me, "Last time we met you did me a great service; you told me to read a little poetry every day, and I have done it ever since." If I could induce all you I have the privilege of addressing to go and do likewise you would think of me with gratitude when I am no more. For poetry is the queen of the arts. It is the thought, the vision, the emotion, of some powerful mind vitalised by imagination and expressed in that mode of music we call rhyme or rhythm. People who say that the subjects of poetry can be more effectively told in prose do not know what they are talking about. They are as wise as a blind man who denied the charm of colour or one incapable of perceiving odour the sweetness of the violet and the rose. It was a doctor of medicine who wrote the play called *The Good-natured Man*. It was Oliver Goldsmith. Jack Lofty, on hearing the name of the poet Waller exclaimed: "Is he of the house?" Mrs. Croaker replied: "The modern poet of that name, sir." Jack: "Oh, a modern! We men of business despise the moderns; and as for the ancients, we have no time to read them. Poetry is a pretty thing enough for our wives and daughters; but not for us. Why now, here I stand that know nothing of books—I say, madam, I know nothing of books; and yet I believe I can talk my two hours without feeling the want of them." I suppose there may be found to-day people equally vain of their imbecility. What are some of the greatest names in history but the names of poets? In telling such names over who could leave out Homer, and Virgil, and Dante, and Shakespeare, and Milton, and Goethe? I have no patience with people who without shame say they do not care for poetry, for they say they do not care for some of the loftiest products of the human mind. If you have not at present a liking for poetry then make one. How can it be done, and so done as not to withdraw too much energy from your professional work? I should say choose a poet who is acknowledged by the weightiest authorities to be a true and great poet. Do not waste time on what are called the minor poets. Some of them in time may be placed among the major poets. But if you can have but little it is all-important you should have the best. Having chosen your great poet, and one not of your own generation, who can only idealise the age of which you are a part and represent yourself, then every day, even if it be but for five minutes, read a page. Read it carefully, noting every suggestive word and visualising every scene. When something pre-eminently expressive or melodious strikes you mark it with a pencil. Each day peruse your page, looking back on previous ones to re-impress what you have already noted. Do this; and not a year will have gone by without your growing keener to perceive beauty and more sensitive to the impact of its charm. A short time ago I was told that Wordsworth was little read by Oxford men. Well, there are men and men as well as ninth parts of men. I can scarcely believe that those university men who are destined to make a mark in the world, men of sound and wide attainments, can be indifferent to, or unacquainted with, this great poet—who, alas, was often a great proser. Too much metrical prose is to be found in his longer poems; but they have in them bursts of inspiration radiant as the sunshine gilding the lake he loved. Mr. Bradley, who was professor of poetry at Oxford, said of Wordsworth, "Indisputably the most sublime of our poets since Milton." John Stuart Mill, a man whose young life no sunshine of poetry brightened its dreary laborious days, speaks of Wordsworth's poems as "a medicine for his state of mind." He said "compared with the greatest poets he may be said to be the poet of unpoetical natures possessed of quiet and contemplative tastes. But unpoetical natures are precisely those who require poetical cultivation. This cultivation Wordsworth is more fitted to give than poets who are intrinsically far more poets than he." Try, I would say to those who at present are not students, still less lovers, of poetry, try Wordsworth's "Prelude" and "Excursion." One page a day, five minutes' meditation, proof by experiment; and I am sure that all except the organically and incurably dull, who are as incapable of poetic sensibility as a piece of putty for emitting music, in a single year will, without interfering with professional work, have evoked from hidden, unperceived, subliminal depths a poetic sensibility which will be an organ of ever-increasing delight. I am not suggesting that you should all attempt to become poets. I daresay many of you have written verses, and some fair being has placed them in her bosom and thought them beautiful. Well, what can be happier than to be in love! Imagination and emotional sensibility which belong to youth and ripening manhood are especially quickened by the ardours of love. They give glow and expression and poetic sensitiveness in the days when the heart is more than a muscle, and the eyes of a girl more than a study in optics. May you have no *cardiac* failure in this respect, and may your love and its gladness live longer than your verses. There have been members of your profession to whom has been accorded the name of Poet. But I have a suspicion that their eminence as poets

was inversely as their success in practice. Oliver Goldsmith was perhaps one of the best representatives of poetic accomplishment in the medical profession. It is uncertain where and how he obtained his medical degree, but it is scarcely possible to doubt that he did, in his foreign wanderings, receive a nominal qualification for practice. This must have been small and brief. It is said that he drew out a prescription for a certain Mrs. Sidebotham which so appalled the apothecary that he refused to make it up, and that as the lady sided with the apothecary he threw up the case and his profession at the same time. But what a delightful, fascinating writer Goldsmith is! All who have any poetic taste are charmed by the tenderness and simple yet perfect grace and music of the "Deserted Village." All who care for genial humour mingled with the restraining pensiveness of one who knows the sorrows of life as well as the eccentricities which provoke a smile are in love with the "Vicar of Wakefield." All who care for English comedy without vulgarity and without pruriency welcome the revival on the stage of *She Stoops to Conquer*. A story is told of Goldsmith that after visiting a very poor patient he gave him a very large pill-box, in which he had placed such money as he had, and on it the words "To be taken as occasion requires." Ah! I have forgotten a greater poet still—first almost in my opinion of the brilliant stars which shine in the firmament of the nineteenth century—I mean Keats. He studied medicine at St. Thomas's Hospital, and when his poems appeared vulgar reviewers tried to extinguish them by sneering at the author's medical training. "Go back to the shop, Mr. John; stick to plasters and pills and ointment boxes." ..... The poems live and the reviewer is everlastingly damned. I do not call upon you to devote yourselves to the production of poetry; suffice it to say that your minds should become, as it were, cabinets of beautiful things. Even if you had to limit your pecuniary gains for the sake of a complete development, would it be a serious loss? It was asked by one, who must be venerated by all, as He is worshipped by millions, "What is a man advantaged if he should gain the whole world and lose his own soul?" By losing the soul I mean losing the finer capabilities and potentialities of the thinking being, with all the gracious satisfactions which they produce, and by so much becoming less than man. There are thousands of things which are not necessary for happiness. A simple home where love and refined taste and mental accomplishments and social graciousness are established may be had on a comparatively small income. In many a humble clerical home, British and German, there is refinement of manners and intellectual accomplishment; there are sons and daughters in whom virtue, brains, and religion are worthily combined, who become strength and fibre in their native land. What more is necessary? That they should start life with a fortune? Better that they should make one. At any rate it is more to be a man than to be a money-bag. Those who think otherwise must be left to amass the most they can and then descend to a grave where gains of coins can never enter. What if there is afterwards a long life even for ever and ever! What to enter a spirit world with a pauper mind! I am not certain but an eight hours Bill enforced upon successful members of the learned professions might not be good for them, and certainly an advantage to those who have to wait until middle life before a real start in successful practice can be made. Perhaps there should also be fixed a time for retirement, as in the army and navy, in order to make way for younger practitioners, and afford opportunity to complete the neglected development of the elder. In a very interesting study of social conditions called the "Camel and the Needle's Eye" Mr. Ponsonby observes that "in all professions, arts, trades, and crafts, the fixing of a limit within which to operate, is the secret of the attainment of a high quality of work, because it is the recognition of human limitations." But dwelling upon a wider culture than that which may be had from professionalism, the culture which aims at the realisation of ideal manhood, I have had the privilege of recommending to you, I know you will pardon me if, as I conclude, I remind you that the æsthetic powers are allied to that highest and most complete mode of embodying all that is beautiful, all that is true, and all that is good, we call God. To combine these three ideals, the ideals of science, art, and ethics in one supreme unity is to set before ourselves an object to which the homage, the worship of our whole composite nature can wisely be rendered. No humiliating sense of littleness nor of puerility, nor of irrationality can shame the artist aiming at perfect beauty, the scientist and the philosopher at absolute truth, and the moralist at a supreme good, who offers up his worship; and worship, as Browning tells us, is "Loved and praised at height."

ST. MARY'S HOSPITAL.

INTRODUCTORY ADDRESS ON "THE ROMANCE OF MEDICINE," BY SIR ARTHUR CONAN DOYLE.

AFTER a few introductory words, in which he referred to his experiences as a medical man in a rural village, in the slums of great cities, in an Arctic whaler, in the neighbourhood of Cavendish-square, Sir ARTHUR CONAN DOYLE went on to say that a medical training was a most valuable possession for a man, even if he did not afterwards engage in practice. After a medical education all work in life, if done in the right spirit, became far more easy. He then referred to the undue materialism of the period when he received his education—a materialism which he thought was due to a reaction against transcendental dogmas. Mellow experience and riper thought, however, made a man realise that materialism did not explain everything, and he continued:—

"I would ask you then, gentlemen, in your studies of matter, not to be precipitate in your conclusions as to spirit. Keep your minds open on the subject. And besides an undue materialism, there is another danger upon which I would warn you. It is intellectual priggishness. There is a type of young medical man who has all his diseases nicely tabulated, and all his remedies nicely tabulated, the one exactly fitting the other—you produce the symptom, and he will produce the tabloid—who really is a very raw product. Life may turn him into a more finished article. Each generation has thought it knew all about it, each generation has in turn discovered its limitations, and yet with invincible optimism each fresh lot still thinks that they really *have* got to the bottom of the matter. Not only have we never got to the end of any medical matter, but it is only the truth that we have never got to the beginning of it. What we have done is to come in in the middle of it, with more or less accurate empirical knowledge. It will help to keep you humble if you remember how largely the very words we use, Life, Matter, Spirit, and so on, are mere symbols of the real meaning of which we know little.

There is another fact which life will teach—the value of kindliness and humanity as well as of knowledge. That is exactly the point which the intellectual prig has missed. A strong and kindly personality is as valuable an asset as actual learning in a medical man. I do not mean that trained urbanity which has been called 'the bedside manner,' but the real natural benevolence which may be slowly cultivated in the character, but cannot be simulated by any forced geniality. I have known men in the profession who were stuffed with accurate knowledge, and yet were so cold in their bearing, and so unsympathetic in their attitude, assuming the rôle rather of a judge than a friend, that they left their half-frozen patients all the worse for their contact. While on the other hand, I have known—and who has not?—men who were of such exuberance of vitality and kindliness that however humble their degrees the mere clasp of their hand and light in their eyes have left their patient in a more cheery and hopeful mood. Above all, no doctor has a right to be a pessimist. If you are conscious of that temperament you should fly the profession. A reasoned optimism is essential for a doctor. He must believe the best, and so he goes half-way to effecting it. We have known for all time that the cheery man was the healing man, but now in hypnotic suggestion we come upon the physical explanation of the fact. If you can convey the expectation of cure you have served your patient well. You need not go the lengths of a doctor I knew, who used to say to his neurotic and hysterical cases, 'Now, Miss So-and-So, you will take three doses of the medicine, and then watch the clock till it is quarter-past five, and at that instant all your troubles will disappear.' It is true that his prophecy was often fulfilled, and yet the method was perhaps a little crude for general use.

With a knowledge of medicine you will find that you bear with you a little private lantern which throws a light of its own. It illuminates many an incident which is dark to the

layman. In every transaction of the world, you are likely to find medical facts down at the root of it, influencing its origin and growth. I know few more interesting lines of thought than this, and there is a wide field for the writer who will explore the influences of medical facts upon social customs and upon historical incidents. To take an obvious example of what I mean, for centuries mankind beautified themselves by means of wigs. You go into any picture gallery and you see your bewigged ancestors, full wigs, and tie wigs, and bob wigs, staring arrogantly at your cropped modern pate. Whence came such a custom, unknown to antiquity and absurd in its nature? Medical, of course. A skin disease on the top of the head of Francis the First of France, which induced alopecia, or bald patches, compelled him to cover himself with artificial hair; his courtiers all followed suit, exactly as they all whispered when the same monarch got laryngitis; and so, the custom enduring after the true cause of it was passed, you find the explanation for all your tow-headed ancestors. It is a very typical instance of the influence of a medical fact upon social manners. But when you come out into the wider field of history, what an enormous and fascinating range of thought lies before you, one almost untouched by the lay historian, and seldom explored by the medical writer. The association of certain diseases with certain characters is an extraordinary problem. To take an example, I suppose there are few men who have influenced history more deeply than Julius Cæsar and Mahomet. They were both epileptics. Is not that a most remarkable fact? Many other great men, including Napoleon, St. Paul, and Alexander the Great, may be said to be under suspicion, but these two were undoubted. Julius Cæsar was, I believe, at all times of his life subject to fits, although it is on record that the open-air life which he led with the legions during the Gallic war had a very favourable influence upon his health. But to the end he was an epileptic. Then as to Mahomet, we know that he also had sudden trance-like fits, quite apart from his religious visions, so that even the most pious Mahomedan must admit them to have been symptoms of disease. Such conjunction of the highest human qualities with a humiliating disease has surely both its pathological and its moral interest. Pathologically, one might suppose that there is a limit to the point to which the keenness of the spirit can drive the body; that at last the strain tells, and they tear away from each other, like a racing engine which has got out of control. Morally, if the human race needed anything else to keep it humble, surely it could find it in the contemplation of the limitations of its own greatest men. I have mentioned Napoleon, and I would further adduce him as an example of the sidelights and fresh interests which a medical man can read into history. One can trace for many years, certainly from 1802, the inception of that disease which killed him at St. Helena in 1821. In 1802 Bourrienne said: 'I have often seen him at Malmaison lean against the right arm of his chair, and unbuttoning his coat and waistcoat exclaim, "What pain I feel!"' That was perhaps the first allusion to his stomachic and hepatic trouble; but from then onwards it continually appeared, like Banquo at the banquet. He could scatter the hosts of Europe and alter its kingdoms, but he was powerless against the mutinous cells of his own mucous membrane. Again and again he had attacks of lethargy, amounting almost to collapse, at moments when all his energy was most required. At the crisis of Waterloo he had such an attack, and sat his horse like a man dazed for hours of the action. Finally, the six years at St. Helena furnish a clinical study of gastric disease which was all explained in the historical post-mortem examination which disclosed cancer covering the whole wall of the stomach, and actually perforating it at the hepatic border. Napoleon's whole career was profoundly modified by his complaint. There have been many criticisms—not unnatural ones—of his petty, querulous, and undignified attitude during his captivity; but if his critics knew what it was to digest their food with an organ which had hardly a square inch of healthy tissue upon it they would perhaps take a more generous view of the conduct of Napoleon. For my own part, I think that his fortitude was never more shown than during those years—the best proof of which was, that his guardians had no notion how ill he was until within a few days of his actual death.

History abounds with examples of what I have called the romance of medicine—a grim romance, it is true, but a realistic and an absorbing one. Medicine takes you down to the deep springs of those actions which appear upon the surface. Look at the men, for example, who were the prime movers in the French Revolution. How far were their inhuman actions dependent upon their own complaints? They were a diseased company—a pathological museum. Was Marat's view of life tainted by his loathsome skin disease, for which he was taking hot baths when Charlotte Corday cut him off? Was the incorruptible but bilious Robespierre the victim of his own liver? A man whose veins are green in colour is likely to take a harsh view of life. Was Couthon's heart embittered by his disfigured limbs? These are the problems where medicine infringes upon history, and these are the illustrations of the philosophy which is only open to the medical thinker. How many times do the most important historical developments appear to depend upon small physical causes? There is, for example, the case of the Revocation of the Edict of Nantes. By this measure the whole history of France has been profoundly modified, because by that action there were driven forth the Huguenots, who were the most stable and Teutonic portion of the nation—I say Teutonic, because religion is a great test of race—and the result has been to destroy the balance of the nation and to leave France as brilliant as ever, but without a certain solidity which she possessed before. On the other hand, it reacted profoundly upon surrounding nations, giving us and others a fresh accession of the most valuable strain which has prospered greatly ever since. Now, how came Louis XIV., who had always held out upon this point, to give way at last to the pressure of Madame de Maintenon and his clerical advisers? The answer lay in one of his molar teeth. It is historical that he had for some months bad toothache, caries, abscess of the jaw, and finally a sinus which required operation; and it was at this time, when he was pathologically abnormal and irritable, that he took the step which has modified history. Great results may depend upon a king's jaw or a statesman's digestion. There is one thing which may be said of those terrible competitive examinations which are called Parliamentary elections, and which give us our rulers. No one who is not physically fit is ever likely to get through them."

Sir Arthur Conan Doyle then briefly sketched the empirical methods of medicine in the past and the consequent weakness in medical science which was due to vagueness of knowledge. Of the present generation he said it "has, as it seems to me, brought about a greater change in medical science than any century has done before. At last there is some attempt to make it exact instead of empirical. Great results have been obtained, and even greater ones have been promised for the future. We fought a hidden enemy. You have brought him out into the open. It is true that the microbic origin of zymotic disease was taught 30 years ago, but we could hardly hope at that time that so many of these minute organisms would be actually separated, and that we should be able to artificially cultivate these lowly vegetable growths with the same certainty as we grow watercress or sweet peas. This would indeed have seemed to us to be a most far-fetched chapter in the romance of medicine. In every literary or dramatic romance you will observe that from the time that the villain is unmasked he is innocuous. It is the undiscovered villain who is formidable. So it has been in this wonderful romance of medicine. All this work of late years has been in the direction of exposing the villain. When once this is done, be he micrococcus or microbe, and be his accomplice a mosquito or a rat-flea, the forces of law and order can be turned upon him, and he can be broken in to comply with that system which he has defied. The story of how these forces of evil were exposed, how one by one their machinations were traced, is, I think, one of the most wonderful and certainly one of the most eventful in science. It is one also which we, as Britons, can regard with a peculiar satisfaction, for our fellow-countrymen have been protagonists in the battle. That great line which honours British medicine since the days of Harvey has never had a more brilliant group than that which contains the names of Manson, Ross, Bruce, and Wright."

Then in language calculated to arrest the attention and excite the emulation of the student he told of the untiring patience of Sir Patrick Manson in his pursuit of the methods by which filaria was transferred from one human body to another, a good instance, he said, of the fact that knowledge and good work are never thrown away and often find their fruition in a manner never contemplated by the original

worker, for in this case the work of Sir Patrick Manson put Major Ronald Ross on the track of finding the methods of conveyance of malaria, with the result that life in Italy, Greece, Ismailia, the West Coast of Africa, the West Indies, and other places was being profoundly altered. Sir Conan Doyle then briefly alluded to the splendid work of Sir David Bruce in the discovery of the micrococcus of Maltese fever, and the proof that the milk of goats was the chief medium of infection, and he also showed how Sir Almroth Wright by his opsonic researches had supplemented the work of Koch in the fight against disease. He concluded:—

"Now I have spoken long enough. Let my last words be personal to yourselves. The great Abernethy, when he was asked to give such an opening address, and when he saw the lines of students before him, cried out, 'Good God, gentlemen! what is going to become of you all?' I think that under modern conditions one can say what will become of you all. You will find your work ready to your hand. Some will find their way into the great Services, some into the over-sea Empire, many into private practice. For all of you life will offer hard work. To few of you will it give wealth. But a competence will be ready for all, and with it that knowledge which no other profession can give to the same extent, that you are the friends of all, that all are better for your lives, that your ends are noble and humane. That universal goodwill without, and that assurance of good work within, are advantages which cannot be measured by any terms of money. You are the heirs to a profession which has always had higher ideals than the dollar. Those who have gone before you have held its reputation high. Unselfishness, fearlessness, humanity, self-effacement, professional honour—these are the proud qualities which medicine has ever demanded from her sons. They have lived up to them. It is for you youngsters to see that they shall not decline during the generation to come."

MIDDLESEX HOSPITAL.

INTRODUCTORY ADDRESS ON "THE MEDICAL PROFESSION AND ITS ATTRIBUTES," DELIVERED BY WALTER S. NOWELL, M.R.C.S. ENG., L.R.C.P. LOND., L.D.S. R.C.S. ENG., DENTAL SURGEON TO THE HOSPITAL.

Lord GRENFELL, in the absence through illness of Prince Francis of Teck, presided over a large company who had assembled on the occasion of the presentation of the prizes by Lord Kitchener.

Lord KITCHENER, who had a great reception, pointed out the vast work which had been accomplished by the Army Medical Service and the Indian Medical Service, and insisted upon the necessity that the combatant branch should second the efforts of medical officers in the treatment of disease in times of peace as in times of war. He bore personal testimony to the vastly improved sanitary conditions of India and of Egypt as a result of the efforts of the medical officers of the two services, but regretted that there still remained in India vast sanitary evils which had to be combated. Making full allowance for the difficulties of dealing with 300 millions of natives, many of them blindly obedient to creed or cast and dwelling mostly in insanitary and overcrowded cities, Lord Kitchener still found that England had somewhat fallen behind other nations in the struggle for the prevention of disease by means of organised sanitary methods, and he appealed to his audience to do their best to remedy the situation.

Mr. NOWELL, after thanking Lord Kitchener for coming to present the prizes and expressing his appreciation of the honour he felt in having been invited to give the address, quoted the passage in which Robert Louis Stevenson refers to the physician as the "flower of our civilisation," and made some remarks on the antiquity of medicine, passing in review the influence on its character and practice of such men in turn as Hippocrates, Celsus, Galen, Paracelsus, Sir Thomas Browne, Harvey, John Hunter, and Jenner, and coming to the nineteenth century Sir Charles Bell, John Abercrombie, Sir Benjamin Brodie, Sir James Simpson, Lord Lister, Koch, Pasteur, Ross, and many more. Mr. Nowell continued:—

"Thus you will observe that not only is the profession of medicine ancient and honourable, but throughout the ages it has maintained, broadly speaking, a remarkable continuity of purpose in its aims, ambitions, methods and work. Its aim and ambition have been by scientifically studying Nature to discover the cause and origin of disease, and by putting such knowledge through the sieve of practical experience to render the tested residue available for preventive and curative treatment. Its method has been intelligently to observe and to reflect on the phenomena of life in health and in disease, verifying these by experience, experiment, and reasoning research, whilst our practical work or function, especially in the eyes of the public, has been, and is, to prevent and to eradicate disease, to heal the sick, and to relieve suffering. These seeds of purposeful energy have always borne good fruit. Throughout the ages the men who have in their day, and usually in a quiet unobtrusive way, added to the sum-total of medical knowledge, or upheld the dignity of the profession, or elevated it a notch or two up the social grade,—such men, I say, have not effected these things merely by profound medical learning, but also by blending into their characters methods of work, habits of life, and certain high ideals which may aptly be termed the 'professional attributes.' Professional work of any kind tends to narrow the mind. Most of us have noticed this in callings other than our own, particularly perhaps in that of the schoolmaster, but the tendency exists with us also; least I think in the case of the busy, cultivated general practitioner, most in the individual who, like myself, has narrowed down his field of practice and possibly also his field of mental vision to some special branch. Therefore, you should cultivate those good habits you already possess, and gradually endeavour to assimilate such characteristics as may, and indeed must, from time to time favourably impress you in others. But perhaps the 'wisest habit of all is the habit of care in the formation of good habits,' inasmuch as it is often harder to unlearn than to learn, and to uproot a bad habit is sometimes painful and difficult. In forming 'methods of work' fix on your object, but do not allow your thoughts to wander and worry over future difficulties, try rather to concentrate your attention on the day's work. To be successful in your work you must be self-reliant, thorough, accurate, methodical, and above all you must be interested in it. Now if you become interested in medical work you are bound in natural sequence to become interested in human nature and to realise the truth of that line in Terence: 'Nihil humanum a me alienum est puto.' In this spirit you will acquire the gentle art of gleaning knowledge from everyone you meet, whether lecturers, teachers, nurses, fellow students, or patients, until you can truly say, like Tennyson's Ulysses, 'I am a part of all that I have met.'

With regard to 'habits of life' I would merely say cultivate regularity and punctuality, avoid extremes, and pursue the '*το μεσον*'—that is, be reasonable in all things. If you would attain lasting happiness you must constantly endeavour to maintain physical as well as mental fitness.

Fellow students of medicine, allow me to wish all of you happiness and success in this school, in this hospital, and in your future careers; and when your working days are over may you be able to say, as Richter did, 'I have made as much of myself as could be made of the stuff, and no man should require more.'"

ST. GEORGE'S HOSPITAL.

INTRODUCTORY ADDRESS ON "PRIZES AND PERFORMANCES," DELIVERED BY S. SQUIRE SPRIGGE, M.D. CANTAB.

AFTER remarking on the double occasion which had brought together his audience—viz., the award of prizes and scholarships to the successful students of the school in the past academic year, and the inauguration of the new session—Dr. SPRIGGE went on to discuss the relation between prize-winners and their after performances. He alluded to the fact that different persons, or the same person on different occasions, viewed the relation between winning of prizes and the winning of success in after life in diametrically opposite manners. "I am certain," he said, "many of us have spoken as though we believed that prize-men are apt not to stay the course. This is when we hear of the insignificant future which some brilliant student has made for himself—perhaps when we hear of the first mathematical scholar in our batch at school as an under-master in a second-rate seminary or notice the best classic of our year at college dozing away a valueless existence in front of a club fire, or using his knowledge of the classical dictionary in guessing acrostics." Yet most people, in congratulating a prize-winner, protest that nowadays in a world of stress and competition, there is nothing

like making a good start. The two views, he said, indicated a considerable diversity of estimate with regard to the merits of the system of awarding prizes, exhibitions, and scholarships in the course of the educational career, if the same people could be found uttering such opposite opinions, and not only uttering them but sometimes acting upon them. But, the lecturer pointed out, whichever view is taken no one ever suggests that education can be carried on to a practical end in any other way. Verbally men are found willing to sacrifice a lightly held conviction as to the value of prizes and examinations to a desire to be agreeable, but even then they endorse the principle of examinations and rewards, alluding to them as a growing abuse good to grumble at. This he considered to be really an admission that there is no way of ascertaining whether students are up to a certain standard save by examinations, and that there is at least no surer way of stimulating the work of a group of students than by appealing to an honourable as well as to an inevitable spirit of rivalry. That thinking men are divided into two distinct camps on the question of the value of prizes and the necessity of their inevitable accompaniment—examinations—Dr. Sprigge found due to the usual fact where sensible people disagree, viz., that both parties are not talking about the same thing. "Those," he said, "who cry out most clearly and persistently against the need of examinations and the reliability of prizes as a gauge of future success are regarding education as a thing which begins at a certain time and ends at a certain time—something like measles which you get young, and get done with. If this view of education be taken, it is easy not only to show that success in examinations is no certain gauge of success in life, but also that the whole system of examinations and prizes is wrong. But medical education does not happen to end with registration, or qualification, with the obtaining of a commission, a diploma, or a degree, and there is no professional curriculum in which this can be seen more clearly than in the medical curriculum, in relation to which it is stark staleness to say that education never ceases and that the longer we practise our calling the more we have the opportunity of learning, of testing that learning, and of obtaining its rewards. Modern conceptions of medicine are such that all men in whatever walk of life they are practising see that their life is one long education, and that all they have learned in the past may be regarded to some extent as an introduction to all that they hope to learn in the future."

Regarding education in this comprehensive way, Dr. Sprigge argued that the two contrary views as to the value of examinations and prizes became at once reconcilable. Prizes and examinations had their necessary place in the early educational scheme because they were a necessary part of a determination, resolved on by those responsible for the State scheme of medical education, that no one should enter the ranks of the profession who is not so far educated that he can take full advantage for his own benefit, and notably for the public benefit, of the greater and more comprehensive education which is to proceed during the rest of his life-time. Examinations, he said, were a means to this end and no more; prizes were an incentive to this end and no more; at which point the speaker introduced a protest against the multiplicity of the examinations and their intricacy which had of late marked the medical student's curriculum. "The system of examination," he said, "is too hardly worked, because of the unfortunate feeling that all the modern developments of medical science, general and special, laboratorial and clinical, ought to be represented in the examination papers. The mesh of the net spread by the examiners has become too delicate; they catch in their elaborate toils too many." But he warned his hearers against regarding knowledge pursued for its own sake and with no materialistic proposal as of little account, finding that the subtlest classic and the most transcendental mathematician had his place in the scheme of education in the broad humanities, just as the elaborate biochemist and statistical eugenist had his in medicine. Their knowledge was required as a reinforcement of ordinary learning, as a proof of its basis, and as an index to the direction of its expansion. Therefore, it was unfortunate that the highest ranges of philosophical research seldom brought their due return in money, and their devotees were forced largely to depend for their reward upon the sweetness of their labours, the keen and splendid delight in the exposition of the rarest wisdom. "In the commercial world," said Dr. Sprigge, "the creation of interests is too often intended merely to extinguish other interests, but in the world of medicine the gains of one man are used for the good of all, and the supreme type of this unselfishness was the worker in the highest planes of research. But in this country those engaged in such work are far away from the pleasures and lures of tangible prizes. Unless the philosopher can by his learning show the capitalist or the shareholders how to transmute baser material into gold, it's little enough gold that he will get in return for his toil. And this is not because the exponent of the highest wisdom is necessarily a visionary, but because the application of his researches is never quickly obvious to a nation that is still in the ancient attitude regarding education—a nation which still believes that education is something like a disease of childhood. To such the man who continues in the laboratory or the library appears to be a sort of permanent invalid removed by a malady of interesting duration from connexion with the real problems of life." He claimed it as one of the greatest glories of modern medicine that it had taught the modern generation of its workers a broader view, for the whole story of pathological progress, which has been so striking during the last 20 years, might be summed up in the statement that scientific research of the highest and broadest kind, in physics and chemistry—in which was included physiology—had been made to play a part in practical medicine, therapeutical and preventive.

The lecturer concluded as follows: "Although the profession of medicine is showing the way by which in its work-a-day proceedings the finest flowers of its philosophy can be gathered and used, the fact remains that prizes, material prizes, come no more in medicine than in other walks of life to the actual exponents of that philosophy. The simple way in which this great wrong could be in fact set right would be by some wider endowment of teaching. Into the hands of the leaders of our thought falls the duty of teaching our students, but in London in particular the duty is largely discharged as a gratuitous one. The shortsightedness and false economy of encouraging students freely with exhibitions and scholarships while making scanty provision for those who teach them is simply an exhibition of the old and narrow view of education. The successful student is rewarded with prizes at the end of his first lap; let him rejoice and be glad in them, for assuredly his strictly academic career will bring him few more emoluments. It is an absurdly wrong policy which leads wealthy and generous persons so much more frequently to found scholarships for the students than lectureships, readerships, fellowships, and professorial chairs for their teachers. Both are wanted; but the needs of the instructed always appear in this country to appeal much more powerfully to donors than the needs of the instructors. What right have we to expect that the highly-endowed student will receive adequate instruction if we fail to endow his masters? The course of education is a long one. Those who once were taught become the teachers; they have reason to expect some continuance of the encouragement which they received at the early stages of the race."

LONDON SCHOOL OF MEDICINE FOR WOMEN.

INTRODUCTORY ADDRESS BY E. W. ROUGHTON, B.S., M.D. LOND., F.R.C.S. ENG., SURGEON TO THE ROYAL FREE HOSPITAL.

Mrs. GARRETT ANDERSON, M.D., President of the school, in opening the proceedings, mentioned that the entry this year was the largest they had ever had—viz., 31—and that of these 30 were starting with the definite intention of taking the M.D. degree of the University of London.

The subject upon which Mr. ROUGHTON spoke was "Woman's Sphere in Medicine." After offering a cordial welcome to the new students, he gave an outline of the course of study, comparing the human body to a piece of mechanism which, though prone to wear out and to get out of order, possessed to a wonderful extent the power of repairing itself and withstanding the influence of injurious surroundings. He then said: The distinguishing feature of this school is that it is for women students and for women only. It is, therefore, appropriate that I should say something about medicine as a profession for women and about the suitability of women for medical work. Of late one has heard so much about the equality of the sexes that one can hardly help thinking that in the minds of many people sex distinction is chiefly a matter of costume and political

disability. For such, medicine is just one of the numerous occupations which may be taken up equally well by male or female. On the other hand, there are still some old-fashioned people who believe that woman's place is in the home and that no occupations outside the domestic sphere are suitable for her. They are apt to forget that owing to the preponderance of the female sex there are not enough husbands to go round; moreover, there is no reason why a woman should get married if she prefers to remain single and earn her own living. Sixty years ago it may have been necessary for Bob Sawyer to engage in pugilism, cock fighting, wrenching off door knockers, and such like pastimes in order to make himself sufficiently brutal to be able to perform a major operation whilst the patient was writhing and shrieking in agony. Such a profession was scarcely suitable for the early Victorian young woman, whose chief occupation seems to have been keeping her hands white and making her mouth a pretty shape by diligently repeating the words pears, prunes, and prisms. The invention of anæsthetics and antiseptics has made surgery a gentle art which can be practised by the most tender-hearted man or woman. Over and above the fact that medicine is a suitable profession for women, there is a very cogent reason why there should be a female section of the profession. I suppose that everybody (including even the opponents of medical women) would agree that it is desirable that women should be attended by persons of their own sex, if only one could be sure that the female practitioner was as efficient and reliable as the male. The need for medical women in countries where men are not allowed to attend the female sex is of course obvious. Custom accounts for a good deal, and I feel sure that the present custom of women being attended by men has only grown up through sheer necessity, and that when in the course of time there is a plentiful supply of medical women, people will wonder how their grandmothers could have submitted to the services of the male obstetrician or gynæcologist. Although there are many ailments where the sex question hardly comes in, I feel strongly that the more the sexes are separated in medical matters the better. For my own part, I should be glad to see a complete division of male from female in hospital work. The example set by the New Hospital for Women is an excellent one. I should like to see the male counterpart—viz., a hospital for men with male officers and nurses; but I very much doubt whether a sufficient number of men would ever be found with the necessary qualities for making good nurses; but that question, though an interesting one, is outside the scope of this address. I also think that mixed classes of medical students are undesirable, and I congratulate you on having joined a school where there are women students only. I would go even further and would say that it is desirable that your teachers should all be women; at present such perfection is not possible, but it will come some day.

Granting, then, that medicine is a suitable profession for women, the next consideration is the suitability of women for the profession. Many women will no doubt be inclined to dismiss the question by saying confidently, "Of course they are suitable, just the same as men." I crave your indulgence for a few minutes in order to discuss this question; for although I shall arrive at very nearly the same conclusion I may be able to lay before you some propositions attention to which may tend to increase your suitability for the profession you are aspiring to enter. Firstly, let me remind you that there are radical differences between the sexes, and that these differences are not comprised by what are usually known as the primary sexual characters; there are other differences between male and female which are called secondary sexual characters; some of these are self-evident and therefore well known; for instance, the greater muscular development of the male, the deeper voice, the beard, and so on. These obvious characters have little or no bearing on the practice of medicine. There are other more subtle differences between the sexes which are sometimes known as tertiary sexual characters, and which I think are more important in deciding the suitability of the sex for the work in question. These characters are especially worthy of attention because they are not so radical and unalterable as the more obvious secondary characters; they are to a large extent capable of being influenced by education and by discipline. In order to understand them it is necessary to remember that in primitive races the different parts taken in the reproduction of children by the two sexes has made the occupations of man and of woman essentially different. Of necessity the woman has been obliged to stay at home and nurse the babes, whilst the man has had to go out and procure food by hunting and fishing; having got the food he often has to fight with his neighbours to protect his belongings. Male and female have therefore been thrown amongst different surroundings, and in obedience to the law that organisms must adapt themselves to their environment have developed different qualities. Thus the male has developed muscular strength, courage, and cunning in the chase, whilst the female who would rear her children successfully could only do so by unselfishness, solicitude, and sympathy; as an Australian Kurnai is reported to have said: "A man hunts, spears fish, fights, and sits about; the rest is woman's work." One of the most obvious results of this division of labour is the woman's sense of dependence upon the man. "She has so long looked to the man as protector, breadwinner, almost as owner, as the one to initiate, to lead, to control, that her capacities have been dwarfed in these directions; her powers of self-reliance, origination, invention have found no outlet and have in consequence remained quiescent or at least have but feebly developed, her mental growth being rather in the direction of such qualities as are comprised under what has, in consequence, come to be called womanly sweetness, or more briefly, womanliness."[1] Evidently these qualities are more suitable for a nurse than for a doctor; if all women were alike in this sense of dependence upon men it is fairly certain that there would be no women doctors. But the history of the woman's medical movement shows clearly that there are many women in whom the qualities of independence and self-reliance are very fully developed. The mere fact of a young woman desiring to enter the medical profession shows that she possesses these qualities in some degree, but it will be well for you to remember all through your career that there is a tendency to revert to the primordial type; therefore take every opportunity of increasing your self-reliance by doing things for yourselves as much as possible whilst you still have your teachers to fall back upon in case of failure. Very lucky indeed are those young women who will have an opportunity of strengthening themselves in this respect by holding a resident post at the Royal Free Hospital.

Women appear to adapt themselves mentally to varying surroundings more readily than men; this peculiarity has been attributed to the necessity she has been under of adapting herself to man, always her superior in strength, and always, therefore, possessing the authority which strength confers. This mental adaptability shows itself chiefly in the greater tactfulness which the woman has no doubt acquired through the moulding influence of the stronger sex; for, finding herself opposed to brute force, and being no match for her husband in this respect, she has had to depend on other resources, defensive and offensive. Closely allied to her tactfulness is another quality which is not so commendable. It is her capacity for dissembling. There are many reasons, which I need not enter into, which account for the undoubted fact that women are more clever at deception than men. There can be no doubt that in the practice of medicine it is sometimes necessary to deceive a patient in her own interest, but as a general rule I strongly advise you to say what you mean and mean what you say. Although this sounds quite simple and easy, I can assure you that it is really very difficult and requires a great deal of practice. You will find this out when as dressers or clerks you write records of the cases in the wards. You will find it difficult enough to record your own observations accurately; and when you come to writing down the patient's account of his symptoms and history, and comparing it with the answers he gives to the physician or surgeon at his afternoon visit you will realise the truth of what I say. Another result of the primordial differences in the male and female environments is that the woman's mind retains more of its child-like characters than does that of the man. All through the animal kingdom the adult female is more like the young of either sex than the adult male, and this is so in the human species. Up to the time of puberty the development of the two sexes runs

[1] Differences in the Nervous Organisation of Man and Woman, by Harry Campbell, M.D.

fairly parallel, although from the earliest age there is a foreshadowing of essentially masculine and feminine traits. At puberty the unlikeness of the two sexes suddenly increases, the male departing much more than the female from the previous childlike characters. Thus it comes to pass that some women are inclined to be weak-willed, acting upon the impulse of the moment without due reflection on ulterior consequences; some, again, are highly emotional, passing rapidly from one phase of feeling to another, from tears to laughter, from frowns to smiles; others are wanting in control, wayward and petulant. These childish women are no use at all in the medical profession; but there are others who possess the childlike qualities of sincerity, modesty, simplicity, honesty, and trustfulness; such possessions should be carefully preserved lest in the development of the higher faculties they be crowded out.

Coming now to the more purely intellectual powers, there are some interesting points to be noted. There is no doubt that in European races the absolute weight of the brain in men is considerably greater than in women, but when we allow for the greater size of the male and compare the proportion of brain weight to body weight, we find that women's brains are at least as large as men's, and, indeed, often a trifle larger. It is, therefore, not surprising that our students do just as well as, if not a little better than, the men students presenting themselves for the London University examinations. You must not, however, be unduly puffed up at your success in examinations; allowance must be made for the marked precocity of the female brain in childhood and adolescence. Girls between the ages of 4 and 7 have already gained 92 per cent. of their final brain weight, whilst boys of the same age have only reached 83 per cent. The girl's brain grows but little after the age of 7, and has practically ceased to grow about the age of 20, whereas the man's brain does not reach its maximum size until the age of 30. It is not surprising, therefore, that girls are often intellectually ahead of boys of the same age; it may be fairly assumed that girls of 16 or 17 have arrived at the same stage of mental evolution as young men of 21 or 22. It is probable that there is very little difference between the intellectual capacity of the average man and the average woman; the boasted superiority of man only shows itself when we pass into the region of genius. Genius of the highest order is almost limited to the male sex, and this is in harmony with the well-known law—viz., that natural variations are more common and pronounced in the male. A genius may be regarded as an extreme natural variation—in a sense an abnormality. In harmony with this view is the fact that the opposite mental type—the idiot—is much more frequently met with amongst boys than girls. In the matter of rapidity of perception the advantage is distinctly with the female sex; thus it is by no means uncommon for a woman to be able to take in another woman's costume at a single glance, and to do it so thoroughly that she is able to give a minute description of it to a friend. Such powers brought to bear upon the clinical aspect of a difficult case cannot fail to be of the greatest use. In selecting things for various purposes there is a marked difference between the sexes. As a general rule a man selects a thing because it is useful, whilst a woman chooses an article because it is pretty, or because it conforms to some artificial standard which happens at the time to be in vogue. I have never been able to find out why a woman usually prefers a delicately sharpened chisel to a screwdriver for turning a screw or for forcing a packing-case open; but I am inclined to think it is due to lack of education in such matters. The problem of the screw is also a difficult one to decide, but as I have so often observed a woman attempt to turn a screw the wrong way before turning it the right way, I am inclined to think that the peculiarity must rest on some essentially sexual basis. Women do not, as a rule, seem to be so handy as men in looking after pieces of mechanism and in keeping instruments in order. They have a dislike for oil and a tendency to administer a violent bang to anything that will not work. This, again, may be to a large extent due to the fact that girlhood has nothing to do with carpentering or any other form of handicraft except dressing dolls. In my operative surgery class I usually have some preliminary sawing of pieces of wood before we proceed to the amputations.

There are many other points of difference between the sexes which I could tell you about, but it would take up too much time. I think I have said enough to convince you that man and woman are very different persons, and that in some respects, perhaps, man is at present more suited for medical work than woman, but that these differences are not all of them essential, but are capable of being overcome by education and assiduous practice. There are many men and many women who are quite unfit for the practice of medicine, and no doubt there are fewer women than men who have the necessary qualities. Nevertheless, when I compare the young women of to-day with the young women of Dickens or Thackeray I feel confident that there will always be a sufficient and a steadily increasing number of women taking up medicine.

Just as there are differences between the medical man and the medical woman, so there must be differences in the kind of work they are most suited for. For many years to come men will continue to attend both sexes as they have done hitherto, but *you* must limit your activities to your own sex and to young children. I do not know any medical woman who professes to treat allcomers, but if there is such a person I hold her to be an abomination. More especially will you devote yourselves to the diseases peculiar to women, for they are indeed the justification for your existence. Obstetrics, of course, is a subject in which our students ought to shine. Any student from this school who failed to satisfy the examiners in obstetrics and gynæcology ought to be heavily fined. Many of you, of course, will eventually go to India and engage in Zenana work, but there is plenty of work in this country for those who wish to stay at home. There are good posts to be had under the county councils and other public bodies. I do not mean that they are very good from the point of view of remuneration, but the work required is admirably suited for the average medical woman. Although it is responsible work, it is mainly of a routine nature, and is not likely to unduly tax the woman's self-reliance by suddenly calling upon her to assume responsibility of the first magnitude. The teaching of elementary hygiene, especially that part of it concerning the home and the care of young children, is essentially woman's work. You must not be downhearted if your teaching is spurned by some woman who will boast of having had twelve children and having buried nine of them; you will not find it wise to inquire after the odd three, as it often happens that one is a cripple, another a lunatic, and the third is "doing time." There are many valuable resident posts in hospitals for women and children, in sanatoriums, infirmaries, asylums, &c., scattered all over the country. Although valuable from the point of view of experience, they are mostly of a temporary nature and do not therefore offer much opportunity of earning a livelihood. Many women are now established in general practice in most of the large towns in England, and I understand that all of them are earning a living and some of them are doing very well indeed. I do not think all medical women are suited for general practice. The successful general practitioner must be able to work hard all day and a large part of the night year in and year out; he (or she) must be able to dispense with regular meals, a full night's rest, and an annual holiday. He must always be ready to listen to anybody's tale of woe in such a way as to give the patient the impression that his is the only interesting case in the world; he must never be impatient or lose his temper, even when after driving several miles on a cold night he is told he is not wanted. He must be capable of carrying any amount of responsibility on his shoulders, and of giving people the impression that he knows a good deal about his work. At the present time the majority of women employ male doctors because, having little or no confidence in themselves, they find it difficult to place any in their medical sisters; if, therefore, you have any doubt about being able to do all the things I have just mentioned you had better think twice before putting up a brass plate. As time goes on the sex will become better educated and there will be room for more and more women practitioners. The number of women suitable for the higher branches of professional work is necessarily small, though not smaller in proportion than in the opposite sex. Major surgery is only for the few, and I advise you not to attempt it unless you have confidence in yourself, your apparatus, and your assistants. That there are women whose operative work is of the highest excellence is proved by the statistics

of the New Hospital, which I believe are as good as those of any other hospital, special or general.

I have now occupied your attention long enough, and it only remains for me to wish you much happiness in the career you are about to embark on. My sincere hope is that in after-life you will always find pleasure in remembering the days when you were students at the London School of Medicine for Women.

MEDICAL DEPARTMENT, UNIVERSITY OF MANCHESTER.

INTRODUCTORY ADDRESS ON "THE EVOLUTION OF SURGERY," DELIVERED BY WILLIAM THORBURN, F.R.C.S. ENG., PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY.

AFTER affectionate references to Mr. F. A. Southam, who after 30 years' service has retired from the active staff of the infirmary, and to the late John Edward Platt, cut off by early death, Professor THORBURN recalled to their memory also John Dewhurst Milne, who, though not a member of the profession or of the University, had done so much for the welfare of their school. They were not, however, concerned with their personal losses so much as with their gains in the art of surgery. It would be easy by continued quotation from older text-books to show that the changes which they had seen with their own eyes and practised with their own hands had implied an evolution in surgery not less wonderful than the development of rapid locomotion, distant communication, and electrical science. He had made an effort to estimate what the gain had been in saving of life, limb, and suffering in their own infirmary in 25 years. Their death-rate from all causes after operation had fallen from 10·5 to 8·5 per cent., and they now operated upon nearly three-fourths as against one-fourth of all patients in the surgical wards. Whereas in 1883, 20 per cent. of deaths after operation were due to infective conditions, they could not now attribute more than 1 per cent. to such causes. Still more striking evidence of improvement in surgery was furnished by the class of operation now undertaken as a matter of routine which formerly was approached with fear and trembling. This great surgical advance owed itself unquestionably to two great fundamental discoveries—anæsthesia and asepsis. To-day they knew that the injury done by the knife was limited to the track of the knife itself, and that it would be repaired with a rapidity so great that after a few hours the most extensive dissections would have left no obvious trace, and it was to this fact above all others that they owed the comparatively recent extension of surgical dissection. There were a few tracts in the brain and spinal cord which a surgeon must not divide; there were a few—a very few—great blood-vessels which he must not cut, but with these reservations he found no barrier to his work. He could safely open, divide, and restore the great canals and ducts of the body and freely expose all its cavities and work in their interior with calm and confidence. He was not limited to a partial and imperfect view, but could freely reveal the parts he had to attack. The perfection of asepsis had so altered surgical methods that the greatest advances in the mechanical art of surgery in recent days had been due to a freedom of action and an exposure of the field of operation which were formerly incredible. Following this accuracy of dissection surgeons could take a further step which had also greatly assisted the evolution of the art. They now obtained a complete view of the effects of disease and diseased areas which their predecessors did not possess and dared not seek, and in this way modern surgical operations had taught them much of the real nature of disease. They might smile to-day at Aristotle's view that the brain was an organ destined to cool the heart, and that the latter was the organ of the mind, and find it hard to believe that there could be rational therapeutics before Harvey discovered the circulation of the blood, but the knowledge of many diseases with which surgery dealt daily was almost as much a revelation to the present generation as were the fundamental facts of physiology to a former day. The acquisition of the knowledge of diseased processes during life had altered the whole mental attitude and produced a clearer conception of the objects of surgery and marked a further stage in its evolution. Again, the extension of operative treatment had demanded and obtained an accuracy of diagnosis which was formerly not required. Five-and-twenty years ago if a man had a tumour of the brain or spinal cord it was of no practical importance where it lay or what it was. But the moment that surgery could undertake to remove some of these tumours, and thus to cure the patient, it became absolutely essential to know their exact size and position, and as far as possible their shape and consistency. A quarter of a century ago nearly all diseases of the abdomen were fatal; death was assigned to peritonitis, a general expression for many conditions which were not distinguished because the distinction was of no practical importance. The extension of mechanical technique had not only taught them pathology, it had also made them learn diagnostic medicine. Thus, then, the lines of advance after the elimination of pain and wound infection had been mainly the free exposure of diseased parts, the fuller knowledge gained thereby, and the greater necessity for prompt recognition of the early stages of disease. Each factor had reacted upon the others. Each step had called for the next and had made the next more easy; as quickly as the trail was made it was trodden by many feet, and in a very few years the jungle had become a network of solid roads from which again new byways were opening out. Lastly, much had been gained during these past years by the education of the public, by the appreciation by them as well as the profession of the necessity for promptitude. Not many years ago the patient "submitted to operation." To-day it was often more difficult for the surgeon to discourage the useless than to urge the necessary operation.

In 1876 Lawson Tait first removed some stones from the gall-bladder, and in 1909 Mayo Robson had collected 3000 of such operations performed by three surgeons alone, and with a mortality of less than 2 per cent. Twenty years ago the operation of gastro-enterostomy was introduced to surgery; it was now one of the commonest of remedial measures, and many thousands had been rescued by it from the slow martyrdom of so-called dyspepsia. In 1896 an Italian surgeon, Farina, made the first attempt to suture a wound of the heart itself, and in 1909 Vaughan collected 150 cases, with 35 per cent. saved from certain death. Still more recently they had seen successful operations for diseases of the heart, and an ingenious device by which it was possible to open the chest with the surrounding atmospheric pressure reduced to that in the bronchial tubes and operate upon the lungs and pleura. Operative surgery had not reached finality 30 years ago, and we might look to the future for an evolution not less wonderful than that of the past. But there were few gains which carried no losses in their train. There was perhaps a tendency to operate too readily and without due care for preliminary diagnosis. The very safety of surgery tended to diminish the sense of responsibility with which operations were undertaken. A closely allied danger was that of extreme specialism, which was another term for limitation of thought. Although inevitable it was none the less a misfortune of modern surgery. It tended to narrow the view and to obscure the human being in the consideration of each surgeon's favourite corner of his frame, to lead to the localisation of all ills in that corner, and to encourage operation upon that corner when it would have been wiser to adopt other measures.

Professor Thorburn concluded: "Let us not lose sight of the fact that, after all, the greatest surgeon is the greatest healer and not necessarily the most dextrous operator. And we may humble a little our pride in our art when we consider that it is, after all, an imperfect means towards one great end—the elimination of disease. Great as have been its triumphs and greater still as we may hope to make them, the greatest triumph will be when a fuller knowledge of the causes of disease, a more perfect development of preventive medicine, a higher evolution of social law, and a nobler gift of individual self-control shall finally eliminate or shall truly cure those human ills with which in our imperfect knowledge we still deal so crudely. Doubtless, gentlemen, it is too much to hope for the realisation of such a dream in the lifetime of any who are here to-day, but it is not too much to expect and trust that you who are now devoting yourselves to the great study of medicine may hereafter play a worthy part not only in advancing the art of surgery, but also in replacing that art by the still more perfect methods which it is our duty to seek and to which ultimately we may attain."

ON THE MEANING OF THE AUDIBLE SIGNS IN MITRAL STENOSIS.[1]

BY ALEXANDER MORISON, M.D. EDIN., F.R.C.P. LOND. AND EDIN.,

SENIOR PHYSICIAN TO THE GREAT NORTHERN CENTRAL HOSPITAL.

ON the last occasion on which I read a paper before the Æsculapian Society I endeavoured to show how much may at times be learned from what I called the *vivisection of disease*[2] in a single case, which has been carefully watched during life and examined after death. I propose on this occasion to consider the light which may at times be thrown on debatable questions by the clinical examination of a single case of heart disease in various phases of its action.

There are few diseases of the heart which have been more studied than mitral stenosis, and it still presents features the interpretation of which is subject of dispute. It is a common experience to find different phases, accidents, or effects of a given cardiac lesion presented by different cases. While these may be pieced together and general conclusions drawn, the convincing value of a clinical patchwork is not so great as that of the consecutive observation of a series of interdependent phenomena in the same case. A unity dissolved and re-united before our eyes or in our ears is more illuminating to the understanding than the composition of fragments into a whole when the phenomena of life are concerned. In the case I am about to relate this dissolution and combination of the signs of mitral stenosis occurred with unusual clearness.

The patient, a gardener, 29 years of age, was admitted under my care at the Great Northern Central Hospital on May 13th, 1909, suffering from breathlessness on any exertion. A week previously he considered himself in good health, though unemployed, and having only taken a cup of tea, walked 40 miles in search of work, which he did not find. On his return he felt tired but not otherwise ill, partook of a good meal, and went to bed. During the night he complained of sore throat, evidently due to a tonsillitis which later suppurated and burst in three days, when he felt relieved. While sitting quietly reading during the same afternoon he was seized with palpitation of the heart and pain in the lower portion of the left side of the chest. The conditions continued more or less until his admission to hospital. The patient stated that he had had a similar attack two years previously, but was quite unaware that his heart was affected, and stated that he had never suffered either from rheumatic or scarlet fever.

The patient was noted on admission to be a well-developed man, who did not look "very ill," lay quietly on his back, evinced no dyspnœa, but had some cyanosis of his lips and ears. The pupils were "rather dilated." The respiratory movements are noted to have been "poor" and their rate 22 in the minute. Posteriorly there were a few crepitations at both bases, but no friction sounds. The cardiac impulse was "very diffuse," and the apex beat, which was in the fifth space one inch outside the nipple line, was characterised as "forcible" by the observer. The impulse was not forcible elsewhere. The first and second heart sounds resembled one another closely; the heart-rate was 180 to 192 in the minute, the rhythm regular, and there was no bruit. The radial pulse was scarcely perceptible, and the blood pressure measured 95 mm. of mercury by the Riva-Rocci instrument. There was no distension of the abdomen, which was tense and rigid. The liver dulness extended from the seventh rib to "two fingers' breadth below the costal margin." Other abdominal organs could not be palpated on account of the rigidity of the abdominal walls. The urine had a specific gravity of 1022, showed a cloud of albumin, and contained a heavy deposit of urates. There was no œdema of the legs, which exhibited severe cramps on any attempt to flex them at the knees. For these notes of the condition of the patient on admission I am indebted to my house physician, Dr. A. E. Gow. Sphygmograms were also taken. (Figs. 1 and 2.)

On the next day (May 14th) the tachycardia continued, but the pulse was noted as being stronger at the wrist and easily felt there. The patient vomited after all food. On the 15th the pulse-rate had dropped to 60, vomiting had ceased, and the following note was made: Apex-beat fifth space, 4½ inches from mid-sternum; impulse visible and palpable; area of cardiac dulness 4½ × 5 inches. Sounds: at apex, clear first sound, followed by two sounds, the first short, the second long, which has the character of a "murmur." (By this was meant that the second of these sounds was a tone-sound, but blunted as though by an intermingled murmur vibration.) These apical sounds might be "graphically represented thus ——⌣——·····. At base, short reduplication of second sound in pulmonary (arterial) area. Aortic sounds normal. No abnormal pulsation in the neck. No thrill anywhere." On the 17th the physical signs at the apex and base of the heart were unchanged. On the 20th the pulse-rate was 64 and the rhythm regular. The second sound was reduplicated at the base. At the apex there were still three sounds, the first longer than before, the second as short as before, the third shorter than before. They might be represented thus, ——⌣——·····. On the 23rd the pulse-rate was "normal" and there was now present a typical *crescendo* presystolic bruit. On the 24th the pulse-rate was 72, the presystolic crescendo bruit was present, and sphygmograms were taken (Figs. 5 and 6). On the 31st the pulse-rate with the patient standing was 78, the bruit typically presystolic, the cardiac second sound slightly reduplicated at the base, and the rhythm of the heart regular. In the recumbent position these signs were the same. The blood pressure measured 135 mm. of mercury.

On June 4th the patient developed a left tonsillitis, with moderate temperature, and on the 7th the pulse-rate was 78 to 86 at the wrist and 114 at the heart, but he still exhibited a well-marked "rolling" presystolic murmur, as it is termed in the notes. On the 10th at 2.30 P.M. the heart again broke into a tachycardia of 168, with regular rhythm and no bruit. There was no subjective distress and occasionally "slight suspicion of systolic impurity at the apex." At 2.40 P.M. on the same day—that is ten minutes after the commencement of the attack—Dr. Gow notes that the pulse- and heart-rate were 84 and regular, there was triple rhythm at the apex, and a "diastolic bruit." The patient left the hospital with restored cardiac action and a crescendo presystolic bruit on June 11th, 1909—that is, about a month after admission.

The chief points in this case on which I wish to offer a few remarks are: (1) the prodromata and apparent causes of the disturbed cardiac action, regular and irregular; (2) the character and meaning of the apical and basic signs present, including the crescendo murmur; and (3) the arrhythmical action of the heart.

This case exemplifies a common clinical experience—namely, that of the existence of unsuspected valvular disease. It is not very material to inquire with what relative frequency this or that valve is the subject of unsuspected disease. My own experience is that mitral stenosis is very often overlooked, and likewise that, in inquiring into the previous history of such cases, one often fails to find a record of the most common causes of endocarditis, such as rheumatic and scarlet fever and the history of other septicæmias. Even chorea, which is at times admitted under these circumstances to have affected a patient in early life, may find no record. The patient has, in fact, regarded him or herself as perfectly healthy until some incident, it may be of exertion or emotion or of both combined, has induced an acute cardiac failure with such suddenness as even to give rise to the belief, on the part of medical observers, that a valve has been freshly ruptured. The "rupture," however, proves in most such cases to have been one not of cardiac structure but of so-called cardiac "compensation." At other times the sudden disorder of cardiac action may follow the occurrence of some debilitating general disorder.

In the present instance, a well-made man, unemployed but employable, is exhausted, and doubtless depressed, by a long and fruitless search for work, takes insufficient food for a fatiguing journey, develops a suppurative tonsillitis, and when apparently convalescent suddenly finds himself overwhelmed by cardiac palpitation. After recovery a short recurrence of tonsillitis with some temperature induces an arrhythmical action, which suddenly blazes into a short and sharp tachycardia, which subsides as suddenly as it arose.

These sudden explosions of erratic action and as sudden resumptions of functional quietude and regularity would until comparatively recently have been regarded as mainly

[1] A paper read before the Æsculapian Society of London.
[2] THE LANCET, Jan. 9th, 1909.

of neural origin. There are those, however, who now favour more largely one or other form of disordered action in the "essential properties" of visceral muscle as the source of such changes in cardiac action. The latest expression of myogenic thought in explanation of such phenomena as we have been considering is that a condition termed by Lewis fibrillation of the auricle is the cause of irregularity of the heart—a condition very frequently met with in cases of mitral stenosis.

It would be out of place on the present occasion to wage the ding-dong battle of myogenicism and neurogenicism, but to Lewis's positive assertion, that fibrillation of the auricle is the cause of cardiac irregularity, I would oppose the suggestion that irregularity of the ventricle is the cause of a stuffed auricle with attendant abortive and irregular contractility, which is graphically represented by tracings which Lewis designates fibrillation.

In the enfeeblement due to toxins generated by a severe tonsillitis the stability of the nervous system is frequently much impaired and its reflex irritability raised. I remember on one occasion, in dealing with such a case, inducing a profound syncope on piercing the tonsil with a bistoury. The syncope amounted to death for the time being. Every function of life was in abeyance, and the patient's pupils were wide and insensitive to light. The "death," I am convinced, would have persisted but for the artificial aid of manual respiration, which fortunately succeeded after a time in restoring "life." I am aware that in using these terms in such a case the patient's "death," like Mark Twain's once reported demise, may appear to some to have been "grossly exaggerated," but I am convinced that had the patient been left unassisted he would have remained "dead." He was resuscitated through a stimulation of his nervous system, for there was no direct cardiac massage.

I still maintain, therefore, that the disturbances of cardiac motion which we have been considering are originated in the nervous, not in the muscular system of the heart, and that they may be induced by any exertion, emotion, enfeeblement, or reflex irritation, which tends, under certain circumstances, by accelerating the action of the heart or otherwise, to cause the muscular factor in this or that part of the organ to escape from the control of the nervous system. The full flood of myogenicism at present flowing may be expected to subside.

The physical signs, however, upon which I desire to dwell more particularly on this occasion are the absence of bruit in the tachycardial heart; the triple rhythm audible at the apex, as in the case I have related; the so-called crescendo murmur so characteristic of this lesion in many cases; and the arrhythmia. What is the *meaning* of these signs?

In the case I have related there were four phases as regards the audible signs:

1. A period of accelerated regular action, in which the first and second sounds resembled one another in duration and character—a "tic-tac" rhythm, as it has been called, in which no adventitious bruit was audible.

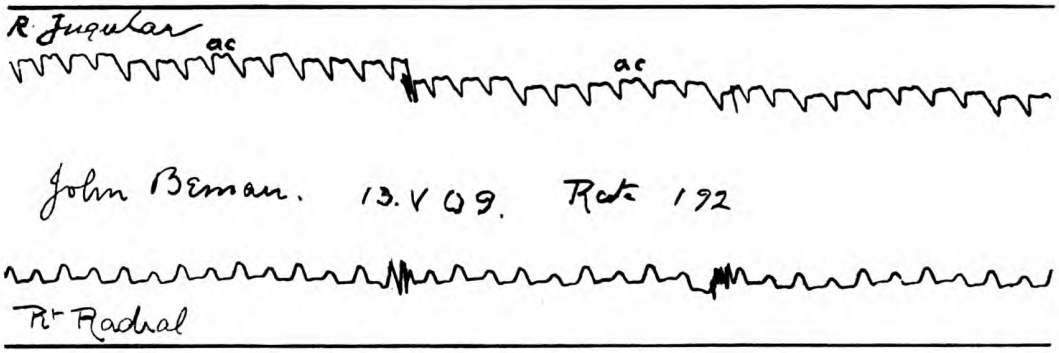
2. A period of slow action, in which there were triple rhythm at the apex and reduplication of the second sound at the base, when bruit was likewise absent, except in so far as it was represented by a bruit-like admixture or modification of the *last* of the sounds at the apex.

3. A period somewhat suddenly inaugurated by the complete presence of a characteristic and loud crescendo murmur at the apex, accentuated first sound, and disappearance of the triple rhythm, while the reduplication of the second sound persisted—the time interval or duration of this reduplication at the base being the same, so far as the ear could determine, as when the triple rhythm with slow rate was present.

4. A period just prior to the relapse of this case into the second regular tachycardia, when the heart was arrhythmical, moderately accelerated (114), and still presented the presystolic crescendo bruit, which was abolished by the succeeding regular tachycardia, the latter being suddenly followed by triple rhythm, slow rate, and a bruit noted as diastolic; this, again, yielding to the characteristic presystolic crescendo murmur with restored cardiac force, with which the patient left the hospital.

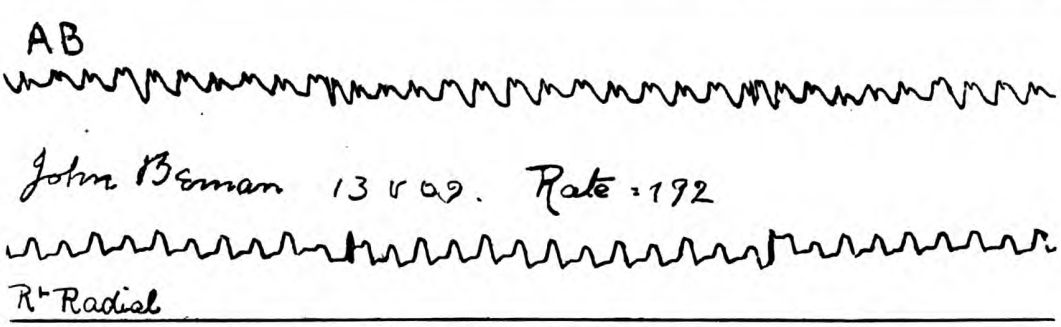
(*a*) Any acceleration of cardiac action tends to modify the auscultatory signs attending valvular disease when these are

FIG. 1.



Jugulo-carotid and radial tracings of the tachycardia.

FIG. 2.



Cardiogram and sphygmogram of the same.

well marked. If acceleration be accompanied by increased cardiac force or augmentation, in which case the quickening is usually moderate, bruits may become audible which are otherwise silent. When, however, acceleration is accompanied by depression, when the rate is usually greatly increased, bruits otherwise present may become greatly modified or altogether inaudible, and this whatever their anatomical situation. The abolition of the bruit in the first phase of the present case exemplifies this fact, the blood pressure merely registering 95 mm. of mercury and the rate being tachycardial. The cervical tracing shows almost a fusion of the jugular and carotid waves, if there be any jugular wave, while the radial pulse is greatly reduced in size (Fig. 1), and the cardiogram does not register a separate auricular systole (Fig. 2).

This jugular tracing shows what I understand is termed the "ventricular type" of jugulo-carotid pulsation. Personally, I venture to think it merely registers the carotid wave with the diastolic interval represented by a slightly notched and almost level top without any representation of the jugular wave or auricular systole whatever.

I presume a case such as this is one which is sometimes now described as one of auricular tachycardia, the substantive denoting the condition of the ventricle, and the adjective indicating the assumed cause of ventricular disturbance. But if this be so, I should take exception to the correctness of the expression.

By auricular tachycardia I understand an accelerated action affecting the auricle and not shared by the ventricle. This condition I have described elsewhere[3] under the term "jugular embryocardia," from the audibility as well as registrability of the auricular contractions, and Dr. A. F. Hertz and Dr. Gordon Goodhart have described a similar case.[4] What the auricle is doing in such ventricular tachycardia as was evinced by the case under discussion it is difficult to gather from the polygraphic record. According to Dr. T. Lewis, the string galvanometer shows it is showering erratic impulses upon the ventricle. However this may be, the chamber itself is not a very effective one. That the auricular reservoirs are full, probably too full, may be gathered from the increased percussion dulness, especially in the right heart, which such cases usually reveal.

It is curious how, under these circumstances, the subjective discomfort of the patient when at rest may be slight or altogether absent. There appears to be an almost continuous flow of blood in a thin stream through the chambers of the heart without the marked alternation of aspiration and propulsion, and, with the minimisation of these phases, the sonorous vibrations denoting particular murmurs disappear. This is true not only of mitral but also of aortic lesions.

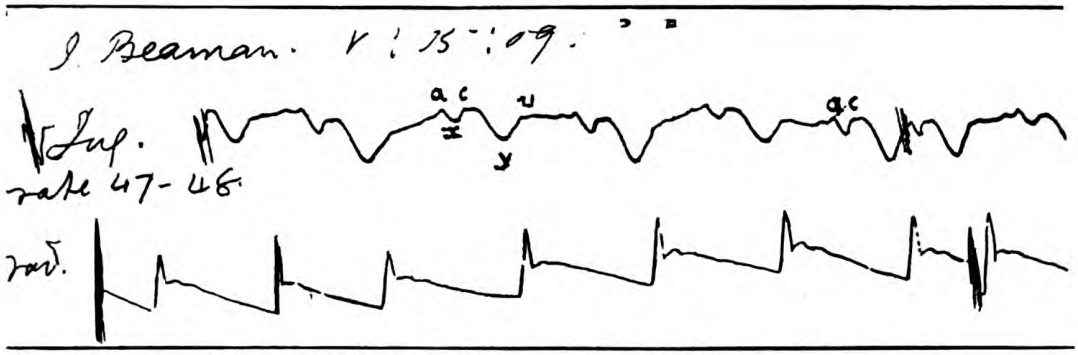
(*b*) In the second phase of the case the cardiac action though slow was still depressed, and the triple rhythm appeared at the apex. To what is this audible phenomenon due—what does it mean? The question has frequently been debated and is not yet decided.

There is no doubt concerning the first long sound of the apical triple rhythm. It is due to, and denotes, the systole of the ventricles. That one of the two remaining sounds represents the normal second sound of the heart is agreed, so far as I have been able to gather, by all who have considered the subject, but a difference of opinion exists as to which of these two sounds—the second or the third—is to be so regarded.

Dr. Sansom,[5] with whom Dr. Cheadle agreed,[6] regarded this triple rhythm (which the latter termed "reduplication of the second sound at the apex") as consisting of the usual first and second heart sounds, followed by a third due to the impact of blood in the diastolic ventricle upon the ventricular face of the mitral cusps. Dr. Cheadle also regarded this apical triple rhythm as indicating in childhood commencing mitral stenosis.[7]

Dr. Stacy Wilson[8] placed the so-called "third sound" after the normally occurring second sound, at the commencement of what he calls the period of ventricular relaxation, and ascribed it, so far as I can gather, not to the first inrush of diastolic blood into the ventricle, which he regards as synchronous with the second sound, but to a retarded inflow when the stage of *expansion* is over and that of relaxation begun.[9] But it has to be borne in mind that the apical triple rhythm may occur in the absence of mitral stenosis, and presumably, therefore, in the absence of that auricular retention of blood which plays a part in Dr. Stacy Wilson's theory.

FIG. 3.



Jugulo-carotid and radial tracings of the retarded heart with apical triple rhythm.

An examination of the tracings in the case related, at that phase of it which manifested the apical triple rhythm, shows retardation associated with low arterial pressure. The radial sphygmogram shows a small apical angle and an undue approximation of the predicrotic and dicrotic notches, which are not well marked. The cervical tracing shows a lengthening of the *ac* interval proportionate to the degree of retardation, and also the presence of one auricular contraction corresponding to the succeeding ventricular systole—that is, the auricle and ventricle are equally retarded. The cardiogram shows little beyond a lengthening of the diastolic interval, and the auricular contraction is only occasionally and very faintly indicated. (Figs. 3 and 4.)

If these radial and jugular tracings be compared with those taken when the triple rhythm was abolished, and the crescendo presystolic murmur established, it will be found that the rate has increased in the latter, that the apical angle of the radial sphygmogram is wider, the predicrotic and dicrotic waves more distant from one another and more distinct, and the measurement of the *ac* interval on the cervical tracing less, while the auricular wave is more distinct. A cardiogram taken at the same date shows increased cardiac vigour with well-marked events: first a rise which coincides in time with the dicrotic notch on the radial sphygmogram, and like it presumably denotes sigmoid closure; then the filling auricle, with, in most instances, a rounded rise presumably due to auricular systole; next the abrupt ventricular rise with a series of small vibrations over the proximal apex, which might be regarded as contemporaneous with the sharply accentuated first sound; and finally, the fall of the

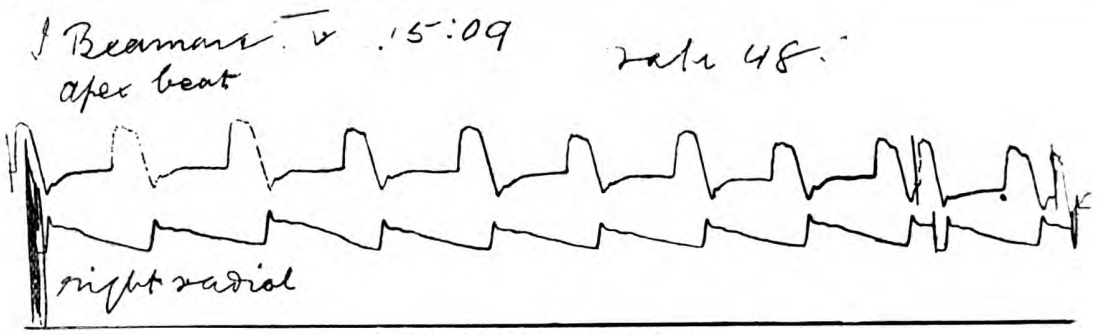
[3] THE LANCET, Jan. 9th, 1909.
[4] Quarterly Journal of Medicine, January, 1909.
[5] Lettsomian Lectures, p. 70.
[6] Rheumatic State, p. 111, et seq.
[7] Loc. cit., p. 111.
[8] Transactions of the Clinical Society of London, vol. xxxiv., p. 10.
[9] Loc. cit., p. 15.

needle on retreat of the heart at the end of systole. The pulse-rate was assumed to be the same during both these tracings, and the increased spacing in Fig. 6 was probably due to a less rapid spin of the clockwork (Fig. 5).

A certain value no doubt is to be attached to these graphic distinctions, although from the dubious nature of some wavelets on such tracings, especially as affecting veins, I feel disposed to vary the old tag which refers to the unreliable character of the Danäi by saying: *Timeo undulas venosas et scientam docentes.* The fact remains, however, that the heart evincing the triple rhythm is, as compared with that in which this rhythm has ceased to be shown, a heart associated with a lower pressure in the circulation as a whole, and necessarily one in which the muscular action of all the chambers of the heart has less efficiency than in the organ from which that sign has disappeared.

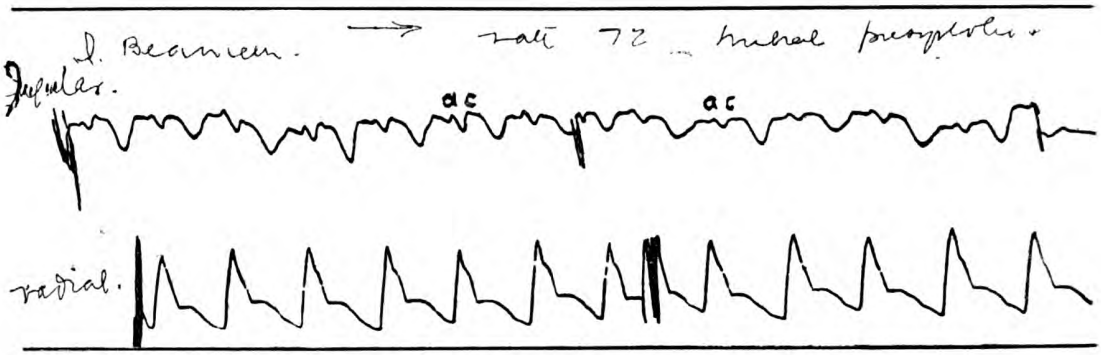
Now, the triple rhythm at the apex (and it is always at the apex and in a limited area there—namely, the inner apex or, more precisely, an area usually extending from the apex beat to the left edge of the sternum and upwards as far as the fourth rib) may frequently be temporarily abolished by quickening the heart's rate. Thus if a patient manifesting this sign when recumbent be asked to sit up in bed, during the acceleration caused by this movement the triple rhythm disappears, giving place to the usual first and second sounds, until the heart has again gained its average rate and tone for the time, when the sign may reappear. This change *may* be owing to mere acceleration, but I am inclined to think that, under these circumstances, there is also a temporary augmentation or increase in the force of the heart beat. Some imported incident in the cardiac cycle is eliminated by this accelerated action. What is this incident?

FIG. 4.



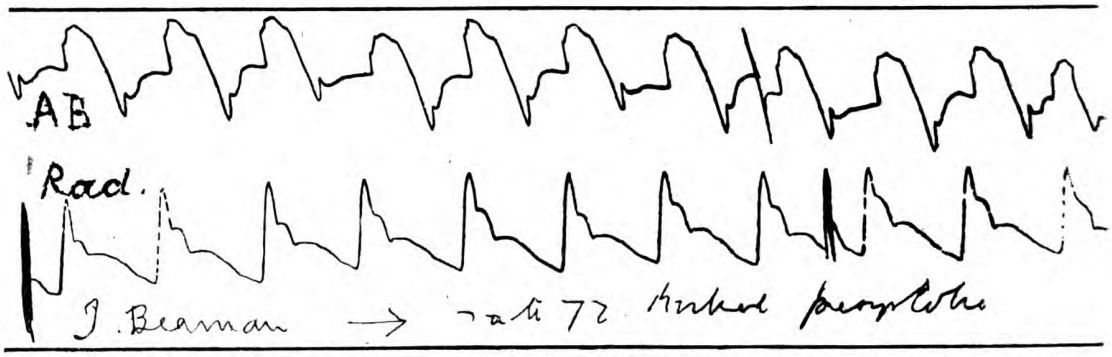
Cardiogram and sphygmogram of the same.

FIG. 5.



Jugulo-carotid and radial tracings from the restored heart with crescendo bruit.

FIG. 6.



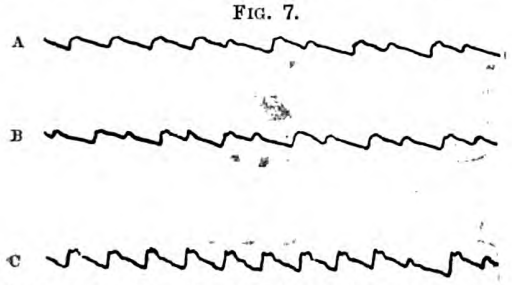
Cardiogram and sphygmogram from the same. (The upper tracing in this figure was originally marked "jugular" in the notes of the case. It is manifestly the cardiogram.)

Were we to accept Dr. Sansom's view of the cause of this sign, the incident eliminated would be the impact of the diastolic blood on the mitral cusps. But this, surely, should occur, whatever the position of the patient or rate of the heart. On the hypothesis advanced by Dr. Stacey Wilson the change of position and quickening of the heart should modify the condition of ventricular "relaxation," and with it the mitral valvular state which emits the third sound with the inflowing retained blood.

It is probable that the changed position of the patient, with consequent acceleration of the heart, has, as I have suggested, some such effect as causing the ventricle to act more vigorously for the moment and so to reduce the distinction between diastolic expansion and relaxation, but to complete diastole the latter phase must still occur. In the theories referred to, the "third sound" is thought to follow the true second sound of the heart, and is, therefore, diastolic, place it where you will in diastole. I hold that it occurs at the commencement of diastole and place it at the first rise marked in the diastolic phase of the cardiogram in Fig. 6, which is also, though less distinctly, marked in the cardiogram in Fig. 4, on account of the less energetic action of the heart. This view is one the possibility of the suggestion of which appears to have occurred to Dr. Stacey Wilson, but which he only mentions as an interpolation to dismiss. When I say it appears to have occurred to him it is not quite stated by him as I should put it. "The other alternative," he writes,[10] "would be to believe in a second ventricular systole in the middle of the long pause, or to believe in an early and wholly unprecedented form of auricular activity. There is no evidence at all in favour of either of these."

The "third sound," it is true, follows a second sound at the apex, which is assumed on these hypotheses to be the normal second sound of the heart. But is it the second sound? If it be not, the third sound, of course, does not occur in ventricular diastole, but is followed by that phase. The so-called "third sound" may, in other words, be the true but altered *second* sound. In that case, what is the second of the three sounds of the apical triple rhythm?

FIG. 7.



Sphygmograms of quadruple, triple, and mixed apical rhythm from a case of double mitral disease.

A good many years ago, when in charge of the out-patients at the Great Northern Central Hospital, I had a woman under my care suffering from double mitral disease, who seemed to me to afford the clue to answer this question. She presented, when recumbent, a quadruple cardiac rhythm with a bigeminal pulse. (Fig. 7 B.) That is to say, a long systolic or first sound, was followed by a short diastolic or second sound, and this, by a short systolic, abbreviated first sound or extra-systole, while the latter was succeeded by a long diastolic second sound. On assuming the erect position, with some acceleration of cardiac action, the usual triple rhythm, with abolition of the bigeminal pulse, took the place of the quadruple rhythm associated with the above bigeminal tracing, and the sphygmogram showed that the short diastole succeeding the first systole had been eliminated and the extra-systole so closely approximated to the first systole as not to find separate graphic record, but to be nevertheless clearly distinguishable on auscultation as the second of three sounds audible at the apex. The tracing was anacrotic, but the registration of the extra-systole was absent, unless the anacrotic rise be regarded as such. (Fig. 7 C.) In transition from the recumbent to the erect position, and *vice versâ*, there was a mixed rhythm until the average rate was attained, when the rhythm became quadruple or triple according as the patient lay or stood—i.e., according as the heart's action was retarded or accelerated to a certain degree. (Fig. 7 A.) It will be observed that in Fig. 7 C, taken when the patient was standing, and exhibiting chiefly a triple apical rhythm, the event in the quadruple rhythm which was eliminated is the first shortened diastole of Fig. 7 B.

In the case which forms the text of this paper and in the case of *triple apical* rhythm generally, I would suggest that the second of the three sounds is a left ventricular extra-systole so closely approximated to the preceding systole as to be *graphically* unregistrable but nevertheless audible. If, however, we start with a triple rhythm, a slight acceleration and augmentation of the heart's action cuts out, on this view, the unregistrable but nevertheless audible extra-systole and leaves the normal single systole and diastole.

The apical triple rhythm, cantering rhythm or *bruit de galop*, consists of a long sound, followed by a short sound, while the latter is succeeded by a sound longer than the second, and when, as in the text case, the rate of the heart is slow and its action depressed, this third sound is as long as, or even longer than, the first sound. With some increase in the rate and power of the heart, there is some shortening of the third sound, which remains, nevertheless, a long sound as compared with the second, and may be, as it was in the text case, contemporaneous with a soft bruit, or, as it were, blunted by it.

As it is not possible to regard the second sound of the triple rhythm as denoting a hemi-systole of the *right* ventricle (for that would be for the right ventricle to contract after the left) and auricular systole, even if so clearly audible as this sound is, could not be imagined *immediately* to follow ventricular systole, it does not appear to me possible to regard the second sound of the apical triple rhythm as being other than such a ventricular extra-systole as I have described and which arises independently of any auricular prompting.

The apical triple rhythm then, on this showing, consists of a ventricular systole, closely followed by a regularly recurring ventricular extra-systole, and the latter succeeded by the second sound of the heart modified in character by the condition of ventricular muscular action.

But Hope's explanation of the second sound—namely, that it is emitted by the sigmoid valves of the pulmonary artery and aorta as they close prior to ventricular diastole—is that usually advanced, and when this closure is not simultaneous the second sound is said to be reduplicated. It was reduplicated in the case we are considering. If this solution be accepted as correct, how comes it that the tone of the third sound of the triple rhythm differs so much from that of the sigmoid closure when auscultated at the cardiac base,—that only *one* of the sounds when reduplicated reaches the apex when triple rhythm is present, and that the time interval between the reduplicated closure of the sigmoid cusps as heard at the cardiac base, and that between the second and third sounds of the apical triple rhythm differs so much—is so much longer at the apex than at the base?

To take the last point in this interrogatory first, it may be dismissed by remarking that, as has been shown or argued, the second sound of the apical triple rhythm is a ventricular extra-systole, and not the second sound of the heart. The greater length of time-interval between it and the succeeding sound has therefore no relation to the character or time-interval of the reduplicated sigmoid valvular note. The other two points are more difficult to explain.

The *tone* of the second sound of the heart differs at the cardiac apex from that it has at the base. It has a more membranous, papery, or valvular *timbre* at the base, while at the apex there is a more sonorous, deep, or what has been termed by some a more "muscular" note. When reduplicated at the base no reduplication need be heard at the apex, but the second sound is nevertheless audible there. Again, the second sound when reduplicated at the base may be heard reduplicated at the apex, with a longer time-interval and a deeper note for both the sounds. Or, lastly, the reduplicated second may be heard at the apex of much the same note and time-interval as at the base. These variations in the transmission of the basic sound or sounds to the apex are probably dependent upon variations in the force and tension of ventricular action, or, to use the language of to-day, in the contractility and tonicity of the heart muscle.

In the text case of this paper, during the phase of slow pulsation, when the triple rhythm was audible, there was a

[10] Loc. cit., p. 14.

reduplication of the second sound at the base with a short time-interval, which may be phonated as "trip." This was quite inaudible at the apex, but the period of its occurrence was later than that of the second sound of the apical triple rhythm, so far as I could determine.

If this third sound was, as I have suggested, the "cardiac second" sound and that sound was reduplicated at the base, only one of the reduplications reached the apex to the left of the sternum, and that altered in tone. If this was so, it must have been the sound emitted by the closure of the *aortic* sigmoid segments, if the second sound is to be accounted for by the closure of the basic cusps. The pulmonary arterial portion of the reduplicated second would under these circumstances be eliminated by transmission towards the right ventricle by way of the conus arteriosus.

The bruit admixture, as I have termed it, of the third sound in the apical triple rhythm was probably due to the weak flow of blood from the auricular reservoir through the stenosed mitral orifice, at the commencement of ventricular diastole, which coincides with the closure of the sigmoid cusps, the sound being heard through the murmur, just as the pulmonary second at the base may at times be heard through a diastolic aortic bruit, the bruit in the same way outlasting the tone-sound.

(*c*) In the text case, when cardiac force had recovered and the patient had a blood pressure of 135 mm. of mercury, with a pulse-rate of 72, a well-marked and loud crescendo murmur declared itself.

On the time and cause of this crescendo murmur much has been written. The late Sir William Gairdner's study of, and conclusions upon the subject had great influence in generalising the belief that the murmur was presystolic in time and its cause the forcing of blood through a stenosed auriculo-ventricular orifice by systole of an auricle whether right or left.[11] While this view has met with almost general acceptance, there have been dissentient voices, among which may be mentioned those of Dr. Howship Dickinson and Dr. E. M. Brockbank. The latter is a persistent advocate of the early ventricular systolic, as distinguished from the diastolic and presystolic conceptions of its nature. He has comparatively recently reopened the subject[12] and maintained his thesis with much spirit and ingenuity.

The crescendo murmur in the present case, which may be regarded as one of a type frequently met with, may be phonated by the sound *dur-r-r-ūp*, the long *dur-r-r-* being followed by the abrupt and short *ūp*. That this *ūp* synchronises with ventricular systole one may easily convince oneself by observing that it is immediately followed by the reduplicated second sound. It is the characteristic accentuated first sound pathognomonic of mitral stenosis. It may be audible, as I have already stated, in the left para-vertebral groove, although unaccompanied by bruit in that situation. When it occurred in the text case, the triple rhythm had disappeared. It represented the first *lūp* of the triple rhythm, shortened and emphasised by the accelerated and more powerful action of the ventricle. It is the altered first sound of the heart, the cause of which is still the subject of a difference of opinion. It has the high note of valvular impact. That is to say, of valve struck by blood under ventricular propulsion. When we come to consider which valve, however, we open the flood-gates of contention.

Dr. Brockbank[13] apparently regards the sound as not due even to a valve struck by blood, but to the "sudden and forcible impact of the hardened, thickened jaws of the diseased mitral valve." Personally, I feel disposed to regard the accentuated note as due in great measure to the impact of blood, not only against the aortic cusp of the mitral valve, but also and simultaneously, if not chiefly, on the lines of the late Sir Richard Quain's theory of the causation of the first sound of the heart, against the closed aortic cusps, which are more resistant to ventricular systole when, as in mitral stenosis, the chamber is less rapidly and easily filled by the blood to be projected. There is apparently some prolongation of ventricular diastole and auricular systole, and a commensurate shortening of ventricular systole. In other words, the higher note of the first sound denotes an aortic pressure *relatively* higher than under normal circumstances, together with less intraventricular pressure to overcome it. It only then remains to inquire into the meaning of the crescendo bruit which precedes this abrupt, high-pitched, and apparently shortened first sound.

Sir William (at that time Dr.) Gairdner illustrated his interesting paper on cardiac murmurs[14] by a diagram in which he depicted the auricular and ventricular systole, the diastole of the ventricles, the sounds of the heart, and a long pause intervening between the ventricular diastole and the succeeding auricular systole. George Gibson gives a diagram[15] in which he throws Gairdner's ventricular diastole and long pause into one; and Halliburton, in Kirkes' Physiology, gives a similar diagram, in which he names the post-ventricular passive interval the diastole of auricle and ventricle, taking the diagram from "Sharpey and Gairdner." To these I venture to add another on the same lines, which indicates more precisely the fact that, while auricular and ventricular diastole are ultimately merged into one, auricular diastole lasts from auricular systole to auricular systole, and therefore, in addition to the period (Fig. 8) of ventricular diastole, exists during ventricular systole. The longest *passive* incident in the cardiac cycle is auricular diastole. In other words, the auricular reservoir of blood exists both before and after auricular systole. In the present day, when one talks of cardiac events in decimals, the production of such a diagram may appear to some antiquated.

FIG. 8.

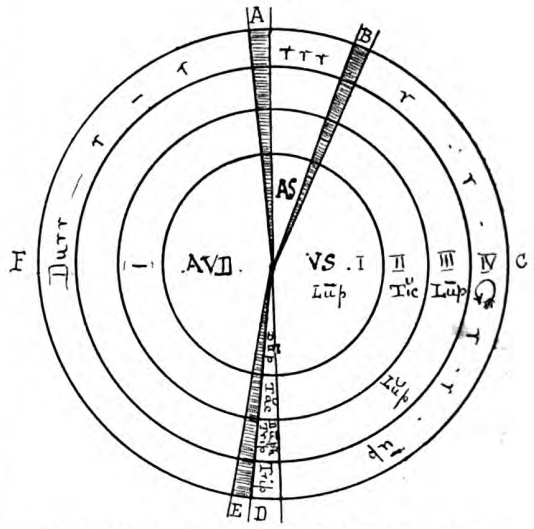


Diagram of the cardiac cycle to illustrate the conception of the phenomena given in the text. I. AS, auricular systole; VS, ventricular systole; AVD, auriculo-ventricular diastole. Lūp, Dūp, first and second sounds of the heart. II. Tic, Tāc, shortened first and second sounds of the heart; (—) greatly diminished diastolic pause. III. Lūp, Lūp, Dūph, ventricular systole, extra systole, and blunted second sound of the heart; Trip, reduplicated second sound. IV. A, termination of auriculo-ventricular diastole; A-B, auricular systole; B, commencement of auricular diastole; C, ventricular systole; D, reduplicated second sound at the base; E, commencement of auriculo-ventricular diastole; F, auriculo-ventricular diastole; Durr-r-r-ūp, crescendo bruit; curved arrow, a possible ventricular systolic and intra-ventricular contribution to the bruit.

The first active event in the cardiac cycle excluding venous pulsation, where myogenists say the stimulus to auricular contraction arises, is auricular systole. But the passive precedes the active, and both veins and auricles must hold blood before they can project it. The cessation of active systole, moreover, is followed by a period of active "expansion," to use the term employed by Dr. Stacey Wilson in the paper already referred to, before it reaches that of "relaxation" or pause. Diastole is thus in its commencement an active event whether we concede it dilatational muscle or mere elastic recoil. The physiological result is active aspiration. How powerful and important ventricular aspiration may be was never so fully impressed upon me as it was after my study of the case of sarcoma of the right auricle and ventricle, of which I gave an account to this society in 1908, and in which life was for long maintained chiefly through the

[11] Clinical Medicine, 1862, p. 599.
[12] Brit. Med. Jour., August 28th, 1909, p. 509 et seq.
[13] Loc. cit., p. 511.
[14] Clinical Medicine, p. 570.
[15] Diseases of the Heart and Aorta, p. 140.

agency of the aspirative and propulsive power of the left ventricle.[16] We have then an all but constant reservoir of auricular blood and ventricular chambers of aspirative power proportionate to their musculature. Under these circumstances, once the blood current has been established, the escape of blood from the auricle has not to await auricular systole when ventricular diastole intervenes, but the latter itself commences a process of emptying the auricle which is terminated by auricular systole.

If one could conceive a heart brought into existence, in which no active event had ever taken place; in which, also, the passive auricle had a stenosed outlet and the chamber was filled with stagnant blood,—if *then* activity commenced with the auricle and was followed by the other events of the cardiac cycle, the first bruit resulting from the first auricular contraction would no doubt be a purely auricular systolic bruit. But the regular sequence of events once established, and the blood-supply constant, a mitral valve stenosed to a certain extent is, so far as I can see, bound to emit a ventricular suction murmur at some phase of ventricular diastole before the succeeding auricular systole empties that chamber. If, moreover, as seems probable, the short, abrupt first sound in mitral stenosis denotes a shortening of ventricular systole, then the long drawn out gurgle of the crescendo murmur in such cases can only indicate a relative lengthening of the other events in the cycle—namely, ventricular diastole and auricular systole.

In his interesting paper already referred to Dr. Brockbank adduces the microphonic sound-vibrations in the tracings given by Weiss and Joachim in support of his position. Joachim, however, states[17] that "in the cases in which the murmur was heard immediately after the second sound, the murmur-curve was continuous with the vibrations of the second sound; where a purely presystolic bruit was noted, vibrations first appeared in the latter part of the diastolic period." He further makes the interesting observations that the vibrations in the crescendo murmur *gradually* gained amplitude, and that no notable change could be detected at the point estimated to correspond with the occurrence of auricular systole.

These observations appear to me rather to support Dr. Frederick Taylor's interpretation of them[18] as indicating diastolic suction with auricular enforcement than Dr. Brockbank's views on the early systolic position of this sign. There is also much force in Dr. Taylor's remarks on the inaudibility of even loud presystolic bruits in the back. The vibrations are, in other words, in an *onward* current.

It is to my mind quite conceivable, however, that at the commencement of ventricular systole there may be an additional "churn" imparted to the presystolic gurgle by that action, but such addition must be fractional, intra-ventricular, and not due to actual hæmic reflux. It may, however, serve to suppress the audibility of the commencement of the first sound, which survives as the clear, sharp note already mentioned.

FIG. 9.

Jugulo-carotid and radial tracings of the arrhythmical phase.

FIG. 10.

Cardiogram and sphygmogram of the same.

(*d*) The fourth and last point which calls for comment in our study of the text case is the period of arrhythmia with moderate acceleration, which was succeeded by tachycardia and as suddenly replaced by bradycardia, triple rhythm, and diastolic bruit, to pass again into the phase of the presystolic crescendo murmur of restored cardiac force. All these points, except the arrhythmia with retained crescendo bruit, have already been discussed and need not again be considered in detail.

No subject has received more attention of late than cardiac arrhythmia. It may, of course, occur without any valvular lesion, but is much more frequently associated, when such a lesion does exist, with mitral than with any other lesions. When arrhythmia is found in association with aortic valvular disease, it is more frequently of the regularly recurring or rhythmical type. The arrhythmia of mitral disease, except when the result of the digitalis group (when bigeminal pulsation usually results), is generally an irregular arrhythmia,

[16] THE LANCET, Jan. 9th, 1909, p. 77.
[17] Archiv für Physiologie, Pflüger, vol. cxxiii., p. 372.
[18] Brit. Med. Jour., Nov. 13th, 1909, p. 1440.

and when the crescendo murmur continues to be heard under these circumstances it is most pronounced during the larger and fuller pulsations of the heart.

The arrhythmia of mitral disease may be transient or permanent, as also may be the arrhythmia of non-valvular disease. In the text case it was transient and ushered in a transient tachycardia. If we examine the tracings of this period we find that the chief feature in the arrhythmia is the shortening or elision of the ventricular diastolic pause. While this fact is apparent from the radial sphygmogram, it is most easily appreciated by a study of the cardiogram. A consequence of this condition, notwithstanding the incursion of extra-systoles of various sizes and an occasional systole of greater volume than normal, is to render irregular and imperfect the escape of blood from the auricular reservoir.

The jugular or cervical tracing necessarily participates in the irregularity of the sphygmogram and cardiogram, and the venous incidents in it are obscure and only occasionally to be observed with approximate reliability. There was no time record on the instrument with which the tracings were made in the text case, but measurement with compasses from points of simultaneous interruption in the various tracings suffices to indicate the situation of the chief arterial incidents. From these the site of venous events may be surmised. In these tracings they are chiefly conspicuous by their absence. While I claim no more than an average dexterity in the use of the polygraph, I do not think the absence of the venous incidents in these tracings is so much a measure of my own clumsiness as of the ineffective contraction of an irregularly overfilled auricle. This overfilling is, I suggest, determined by the irregular and imperfect action of the ventricles and chiefly by that elision or shortening of the ventricular diastolic pause to which I have already referred. When we come to the consideration of the probable cause of the latter condition we again reach debateable ground.

I confess that to my mind there is, by assuming certain data, more to be said for Mackenzie's "nodal rhythm" in this connexion (which is nothing more or less than an acknowledgment of the non-auricular activity of the ventricle with a myogenic explanation thrown in) than for Lewis's auricular fibrillation; for, in such arrhythmia as we are considering, I believe the ventricular irregularity is the chief cause of the auricular distension and disturbance and probably precedes it. Yet I prefer to both a neural hypothesis, which sees in the irregular action of the muscular factor its irregular modification by the contending forces of inhibition, augmentation, and acceleration which in action alter the smooth regularity of the detached or decerebrated rhythmical muscle cell. When arrhythmia becomes permanent the auricular reservoir becomes more tolerant of its surplus blood content by dilatation, and so the heart less prone to uncontrolled tachycardia. It is scarcely possible to conceive a persistent auricular fibrillation, although a persistent auricular tachycardia, unshared by the ventricle, is known to exist.

THE FUTURE OF THE CRYSTAL PALACE.—Lord Tenterden has issued a circular letter asking those interested in the future of the Crystal Palace to give their approval to certain schemes by which it may be converted into a permanent memorial to his late Majesty King Edward VII. The first scheme suggests the use of the Crystal Palace as a headquarters for the National Aero Corps, which is to be composed of individuals and societies owning and using flying machines of all kinds. The building would be used for all purposes connected with aviation and would include instruction in flying and the sale of machines. It is proposed that every Englishman being a member of the National Aero Corps shall have the privilege of being trained as an aeronaut or as an aviator, so as to enable Great Britain to maintain her prestige in the air as she has done on the sea. The second scheme is practically an amplification of the first, one of the chief features being the construction of a high-speed electric railway from West Central London direct to the Palace. Lord Tenterden invites signatures in support of his proposals in order that they may be sent to the Lord Mayor, with the hope that the King Edward Memorial (London) Committee will adopt one or other of the proposed schemes. In connexion with the National Aero Corps a First World's Aerial Exhibition will be held at the Crystal Palace from Dec. 1st of the present year to Jan. 31st of next year.

ACTIVE LOBAR COLLAPSE OF THE LUNG AFTER ABDOMINAL OPERATIONS.

A CONTRIBUTION TO THE STUDY OF POST-OPERATIVE LUNG COMPLICATIONS.

BY W. PASTEUR, M.D. LOND., F.R.C.P. LOND.,
PHYSICIAN TO THE MIDDLESEX HOSPITAL, BERNERS STREET, LONDON, W.
CONSULTING PHYSICIAN TO THE QUEEN'S HOSPITAL FOR CHILDREN, HACKNEY ROAD, E.

As the term used in the title of this communication might be misunderstood, it is necessary that I should briefly explain the meaning I attach to the words "active lobar (or massive) collapse of the lung."[1] It is a state of active deflation of the organ, affecting one or more of its lobes, which occurs under certain conditions, in the absence of any obstruction of the air-way, and is probably always due to disturbance of the muscular mechanism of respiration.

Imperfect power of expanding the thorax has, it is true, long been recognised as a cause of collapse of the lungs; but, judging by the references to this subject in the literature, the collapse implied is of the patchy or lobular variety (of passive origin, and not to be confused with the one here under consideration). It is sometimes accompanied by a state of general incomplete expansion of the organ which is often referred to as partial collapse; wrongly, I think, inasmuch as this condition of imperfect expansion does not present any of the well-known naked-eye characters of collapsed lung, to which the term collapse should, in my opinion, be restricted.

Active lobar collapse can be best studied after death from respiratory paralysis. Thus, in five cases of diphtheria in which the diaphragm had been completely paralysed for some days the lower lobes, especially the right, were found on post-mortem examination to be totally emptied of air, generally sinking entire in water and presenting in a typical form the naked-eye appearances of collapsed lung.[2] Since my attention was first drawn to this subject some 20 years ago by the cases just referred to, I have examined the lungs in some 15 instances of the condition arising in the course of a number of different diseases. In every one of them the lower lobe was the part primarily and most profoundly affected. The reason of this probably is that failure of the diaphragm is relatively common, whereas complete loss of power in the muscular groups which are the direct expanders of other parts of the lungs is a somewhat rare event and one which does not often lead to a fatal issue. There are cases on record in which active collapse of the upper lobes has been recognised during life, though, so far as I know, there is at present no record of a fatal case. Although the state of collapse brought about in this way does not apparently differ in any important particular from that caused by, say, a complete pneumothorax, a very large pleural effusion, or complete blocking of a main bronchus, the actual cause of the deflation is obviously different. The emptying of the lung in pleural effusions is probably due to pressure from without, while in the case of a plugged bronchus the collapse which takes place is generally held to be due to a passive removal of the air in the portion of lung beyond the bronchial occlusion. Neither of these processes will explain the extreme deflation of active collapse. The cause of this condition, however, is susceptible of an explanation which is at once rational and perfectly simple—an explanation, moreover, which completely meets the observed facts. Whenever—whether as the result of paralysis or of temporary reflex inhibition of muscular action—the distending force acting on the lungs becomes less than that of the elastic and muscular agencies which tend to cause its contraction, these latter, so to speak, take charge, with the result that the affected portion of the lung rapidly empties itself of its contained air. Whether the deflating force is elastic or muscular, or both, I do not pretend to say; but this is not a material point. The cases about to be described prove—as conclusively as clinical evidence can prove—that sudden deflation of large tracts of lung may occur after certain surgical operations with a fairly well-defined train of attendant symptoms and physical signs.

[1] For fuller information on this subject consult the Bradshaw Lecture of the Royal College of Physicians of London, 1908. Vide THE LANCET, Nov. 7th, 1908, p. 1351.
[2] Loc. cit.

CASE 1. *Radical cure of hernia; active collapse of the right lower lobe 24 hours after operation; recovery.*—The patient was a man aged 23 years. Radical cure of left inguinal hernia was performed on Nov. 8th, 1909. The case was perfectly aseptic throughout. Anæsthetic: gas, ether, and chloroform. Twenty-four hours after operation the patient was suddenly seized with pain across the lower part of the chest and alarming dyspnœa without warning of any kind. When I saw him, within three hours of the onset, he was in a state of extreme dyspnœa, the face being dusky and the alæ nasi moving strongly. On examination of the chest cardiac dulness was found to have been entirely obliterated. The heart was beating in the fourth interspace just outside the right sternal border. There were no adventitious sounds and the action was regular, 132 per minute. Traube's space was resonant and the stomach resonance was normal. The whole of the left front and the axilla was hyper-resonant (suggesting pneumothorax); the backs were not examined. There was loud exaggerated breathing all over this area, with well-marked vocal fremitus, but no râles. Right side: The percussion note was about normal below the clavicle, becoming gradually dull towards the base. Breathing was very weak all over the right front and the axilla, becoming quite inaudible over the dull base. Vocal fremitus was much diminished. The liver dulness was slightly higher than normal. The epigastrium was normal. The temperature rose rapidly to about 103° F. with the onset of the symptoms. Oxygen was administered frequently during the night. On the morning of the 10th the patient was much better. The cyanosis was much less and there was only slight dyspnœa. The temperature was 99° and the pulse was 84. Heart dulness was still absent on the left side. On the 12th the heart impulse was discernible just to left of the sternum and the patient was improving rapidly. After this date steady improvement was made. The heart did not fully regain its normal position until the 25th. Examination with the orthodiagraph on Dec. 1st revealed normal action of the diaphragm on both sides. There was some enlargement of the right heart, otherwise everything was normal.

CASE 2. *Abscess in the right side of the abdomen following operation for right inguinal hernia; incision and drainage; active collapse of the right lower lobe on the fourth day; recovery.*—The patient, a man aged 37 years, had undergone an operation for right inguinal hernia in a provincial hospital in September. The wound only ceased to discharge a fortnight before the patient left the hospital on Oct. 30th, 1909. A month later pain in the abdomen above the wound was felt. A lump formed in this situation, causing great pain and constipation. On admission a hard mass occupied the right side of the abdomen; it was superficial, rounded, and slightly moveable. This was incised on Jan. 15th. A considerable quantity of pus was evacuated, and there was much surrounding inflammatory swelling. Daily peroxide syringing was practised with kreolin fomentations. On the 19th the patient was taken suddenly ill at 2 P.M., with some pain and a feeling of tightness across the lower part of the chest. The house surgeon found some weak tubular breathing at the right base, with a few crepitations. I saw the patient at 4 P.M. The left chest looked full. There was a drum-like percussion note all over the left front and axilla as low as the sixth rib. The heart dulness was obliterated, the impulse being most distinctly felt in the right fifth space three-quarters of an inch from the right sternal border. Epigastric pulsation was well marked. The breath sounds were much exaggerated all over the left front and axilla, with prolonged expiration (not suggesting consolidation). Vocal fremitus and vocal resonance were both somewhat diminished. On the right side the breath sounds were normal over the upper lobe but very weak over the lower lobe, which was dull (relatively) on percussion. The breath sounds in this region were weak and bronchial, and ægophonic in one spot. Vocal resonance was much diminished. No râles were audible. There was not much dyspnœa. The sputum was white and frothy. On the following day there was bronchial breathing over the right base behind, with some crepitations and exaggerated breathing over the left lung. After this the symptoms rapidly subsided. The temperature rose to 101° F. at the onset, but fell to normal again on the following day. There was no dyspnœa worth mentioning after the first day. Weak breathing and impaired resonance at the right base persisted for 11 days.

CASE 3. *Left salpingectomy for pyosalpinx; active collapse of the left lower lobe on the third day; recovery.*—The patient, a strong, well-built married woman, aged 24 years, was admitted on April 4th, 1910, complaining of a painful tumour to the left of the uterus. On the following day a left pyosalpinx was removed, a drainage-tube being inserted alongside of the colon. The patient had much abdominal pain during the next two days; on the seventh it was chiefly felt in the neighbourhood of the ensiform cartilage. The temperature had risen slowly since the operation with large morning remissions; at 10 P.M. on the 7th it was 100·4° F., and at 10 o'clock next morning it had fallen to 98·8°. There had been slight cough for the last 36 hours. On the 8th the patient complained of pain beneath the lower end of the sternum and between the shoulders. On examining the backs the breathing was noticed to be weak over the left base. The respirations were 24. At 2 P.M. she was suddenly seized with alarming symptoms of dyspnœa and cyanosis. It was noted that the onset of the dyspnœa was not absolutely sudden, the cyanosis apparently preceding it. The temperature had risen to 103°, the pulse from 106 to 120, and the respirations to 40. The patient looked desperately ill. She was sweating freely and complained of chilliness, but there was no rigor. She began to expectorate small quantities of viscid yellow sputum. The apex beat could not be made out; the heart sounds appeared to be unaltered. Nothing abnormal was detected on pelvic examination. There was marked dulness over the left lower lobe and to a slight extent also at the right base quite low down. Breathing was practically inaudible all over the left lower lobe with the exception of the posterior apex. Vocal fremitus was diminished; vocal resonance was somewhat increased with a rather nasal quality of voice sounds. No crepitations were heard. At 10 P.M. the condition was unchanged. The temperature was 104·8°, the pulse was 132, and the respirations were 45. The heart's apex was felt beating in the left axilla (exact position not put down). The left base was as before, but very weak breathing with a few crepitations now audible. The right lung generally was hyper-resonant. (Massive collapse of the left base was diagnosed.) At 2 A.M. on the 9th (four hours later) the temperature was 101·8°, the pulse was 122, and the respirations were 40, all symptoms diminishing in severity. At 10 A.M. there was definite improvement. The apex beat was gradually moving back towards its normal position. The temperature was 99·8°, the pulse 120, and the respirations were 24. The dulness over the left base was diminishing both in extent and degree, expectoration (muco-purulent) was much freer, and there was no longer hyper-resonance over the right lung. The urine was normal. The bowels, which were confined for three days following operation, were well relieved by simple measures. Films and media (from the sputum) contained pneumococci, but not in sufficient numbers to suggest pneumonia. On the 10th the patient was better in every way, the lung dulness rapidly declining. The apex beat was in the nipple line. On the 13th the left base was normal, with the exception of a few moist sounds near the spine. The left chest, in the xiphi-sternal plane, measured 15½ inches, and the right 16½ inches. The patient went to a convalescent home on the 27th.

CASE 4. *Cholecystitis; cholecystectomy; massive collapse of the right middle and lower lobes early on the fourth day; recovery.*—The patient was a well-built fairly healthy married woman, aged 45 years. Cholecystectomy was performed on June 10th, 1910. (A "clean" case throughout.) Gas, ether, and chloroform were employed as the anæsthetic. The drainage-tube was removed on the 12th. On the 13th the temperature had risen to 100·4° F. There was mucus in the trachea which the patient was unable to cough up on account of pain in the wound. No abnormal signs were observed over the front of the chest, but the respirations had risen to 30, and there was slight distress in breathing. On the 14th at 7 A.M., after a fair night, the patient suddenly became rather blue, there was an appreciable increase in the dyspnœa, and the pulse had become rapid and thready (120), the respirations being 40. She rallied quickly after taking a little brandy. The chest was examined at 11.30 A.M. The apex beat could not be felt. The left chest in front was very resonant (hyper-resonant), the resonance extending a finger's breadth beyond the right sternal margin opposite the lower end of the sternum. There was loud exaggerated breathing all over the left side of the chest, with increased movement. On the right side in front the percussion note was resonant as far as the fourth rib; below this there was dulness increasing in degree towards the base. Behind at the apex resonance was fair, impaired in the interscapular region, and quite dull below the angle of the scapula. The breath sounds were weak over the posterior apex and almost inaudible over the remainder of the lower lobe, except on coughing, when faint tubular breathing could be heard. There were no moist sounds in the lungs. There was no heart dulness to the left of the sternum; the heart sounds were very faintly audible in this area, but distinctly audible on the right side of the chest, being most clearly heard in the right fourth space one inch inside the nipple. The patient had coughed up about two ounces of viscid greenish sputum in the last 24 hours. There was no pain in connexion with the onset of symptoms. The temperature, after touching 102·6° on the 14th, at 2 P.M. gradually fell to normal by the 17th. The pulse, which reached a rate of 140 on the night of the 13th, dropped below 130 on the evening of the 14th, and below 100 two days later. The respiration rate varied with the temperature. The case was remarkable in the prominence of the physical signs in comparison with the mildness of the symptoms. The dyspnœa was not continuous, as in other cases, but recurred at intervals throughout the 13th and 14th. It was at no time really urgent. The patient felt and looked better on the 15th, and was practically free from any unpleasant symptoms on the 16th. On this date the point of maximum intensity of the heart sounds had shifted to the mid-sternal line, but there was no appreciable change in the state of the right lung. The base was still dull and silent, vocal fremitus being absent. On the 17th the heart sounds were most clearly audible in the fifth left interspace, two inches from the mid-line, but were still distinctly audible to the right of the sternum, over the middle lobe. The signs of compensatory hypertrophy on the left side had disappeared. Two or three days later the patient had completely recovered.

CASE 5. *Gall-stone colic; cholecystotomy; active collapse of right lower lobe on the second day, with recurrent attacks of heart failure; recovery.*—The clinical picture of lobar collapse was somewhat modified in this case by the super-added symptoms of recurrent attacks of heart failure, but the physical signs observed were identical with those present in the other cases. The patient, a stout, flabby, full-blooded married woman, aged 49 years, was admitted for repeated attacks of gall-stone colic. She had suffered from breathlessness on any exertion for many years. On June 14th, 1910, an operation was performed, many stones being removed from the gall-bladder and several from the common bile-duct. At 10 P.M. there was much pain about the wound. One-third of a grain of morphia was administered hypodermically. The temperature was 98° F., the pulse was 84, and the respirations were 24. On the 15th the patient looked and felt comfortable throughout the day. The respirations, however, had risen to 40, but there was no inclination to cough. They fell again to 28 on the same evening. The temperature throughout the day was just below 99°, the pulse between 90 and 100. On the 16th, at 7 A.M., the patient suddenly became deeply cyanosed, with rapid shallow breathing (44) and very feeble frequent pulse (120). She appeared to be moribund. Brandy, strychnine, and oxygen were at once given, and within 30 minutes she had rallied in all directions. At 11.30 A.M. the wound was dressed. The opportunity was seized to make a rapid examination of the chest. Fronts: Compared with the left the right front looked flat, and the breath sounds were decidedly weak, while on the left the breath sounds were everywhere loud and exaggerated. Normal heart dulness absent. The heart was neither heard nor felt to the left of the sternum; the heart sounds were most distinct in the right fourth space two inches from the mid-line. The left front was everywhere hyper-resonant. Backs: The breathing was weak all over the right back, especially over the lower lobe where the percussion note was impaired, while there was loud exaggerated breathing all over the left back, with occasional rhonchi. Towards the end of the examination the patient had another bad attack of heart failure, which yielded in an hour to stimulating treatment. During the day she began to cough up a little viscid greenish sputum. The temperature varied between 100° and 101° throughout the day, falling to normal during the night. On the 17th the patient looked better; no further attacks of dyspnœa had intervened. The heart sounds could be heard to the left of the sternum as far out as the nipple line, but they were still loudest two inches to the right of the sternum. The apex beat could not be felt. The breathing was of equal strength on the two sides of the chest except at the right base, where it was very weak and bronchial; a few fine crepitations were audible on inspiration. Resonance was still impaired at the right base. The pulse was 100 and the respirations were 32; the expectoration was as before.

The patient had another sharp attack of heart failure in the evening, with deep cyanosis. On the 18th she complained of intense epigastric pain. The discharge from the tube to the common bile-duct was scanty, but purulent. The tube was removed and about two ounces of pus were expressed. The breath sounds in the right axilla, over the base, were still weak as compared with the other side. After this there was steady improvement and no further attacks of dyspnœa occurred. The temperature became normal on the 23rd. Cough and expectoration ceased on the 21st. On the 25rd the resonance was equal and normal all over both backs, the breath sounds were healthy, and all adventitious sounds had died away. The heart sounds were most distinctly heard on the left side, near the nipple line, but the apex beat was not yet palpable.

The special interest of Case 5 lies in the association of recurring attacks of heart failure with massive collapse. The symptoms in this case vividly recalled to my mind the "cardio-pulmonary crises" which were not uncommonly met with in cases of diaphragmatic paralysis after diphtheria.[3] The significance of the association is heightened by the knowledge that this patient was known to have a weak heart (? fatty), so that her condition approximated more nearly to that of the diphtheria cases than any of the other four.

I look upon these five cases as clear examples of active lobar collapse from reflex inhibition of the diaphragm, occurring most probably in otherwise fairly healthy lungs, and in the absence of inflammatory lesions of the diaphragmatic pleura or peritoneum, such as are almost invariably found in fatal instances of the condition after surgical operations on the abdomen. There can be little doubt, from a comparison of the two groups of cases, that it is the absence of associated lesions (nearly always septic) which accounts for the remarkable uniformity in the symptoms presented by post-operative cases with clean wounds[4]; and the fact that all the patients recovered shows that this complication, though very alarming in its symptoms, is not usually dangerous to life.

Now, as to the cause of active lobar collapse in these cases the following points are to be noted. 1. The cases of diphtheritic paralysis quoted above prove beyond question that arrest of diaphragmatic movement does cause massive lobar collapse of the lung. 2. My entire series of fatal cases (other than those due to paralysis) have, without exception, this feature in common—namely, the existence of a powerful source of irritation in the neighbourhood of the diaphragm within the area supplied by the vagus—that is to say, a condition of things in which reflex inhibition of that muscle might very readily be set up. 3. In four out of the five cases the lung affected is on the same side as the operation wound. 4. The disappearance of apex beat and heart sounds from the normal position and their displacement towards the affected side. 5. The sudden over-distension of the unaffected lung. 6. The almost complete silence over the affected lobe.

In the face of this evidence it is difficult to resist the conclusion that arrest of diaphragmatic movement is the cause of massive collapse in these cases; indeed, it seems almost impossible to account for the facts observed on any other hypothesis.

Why inhibition should occur and what is the precise nature of the irritation which determines the reflex I am not at present in a position to state. The course of the nervous paths is fairly obvious in the gall-bladder cases, and if, as there is reason to believe, the vagal ramifications in the abdomen extend to the whole length of the intestine, we may suppose that in all these cases the source of irritation lies within the vagus area of distribution. It may be anticipated that with fuller data to work upon light will be thrown on this as well as on other features of these cases which are still surrounded by much uncertainty.

Review of the Symptoms.

One cannot fail to be struck by the close resemblance of the initial symptoms to those of pulmonary apoplexy, nor is this surprising, seeing that in both conditions a large tract of lung tissue is suddenly thrown out of action. The onset of active collapse, however, is not invariably sudden (Case 4). There may be a prodromal period of some hours during which the patient looks and feels ill. The temperature is rising gradually and there may be slight distress of breathing with some duskiness of surface. I would suggest that this prodromal phase may coincide with a partial deflation of the lung, owing to gradual diminution of inspiratory power, and that the acute symptoms only arise when the danger-point has been reached and the now unopposed contracting force causes active collapse of the affected lobe. It would help, also, to explain why in such cases the symptoms are generally less urgent than when a sudden cutting-off of the expanding force is the first event in the series.

The usual symptoms of active lobar collapse are: sudden dyspnœa and cyanosis, generally accompanied by more or less pain in the lower part of the chest. Cough is often present, but not a marked feature, as a rule, in uncomplicated cases: there may be some greenish viscid expectoration, but rusty sputum has not been met with. There is immediate loss of mobility on the affected side of the chest. The movement on the healthy side, which often looks full in comparison, is exaggerated. The breath sounds are diminished on the affected side, becoming almost, or quite, inaudible over the base, which is always relatively dull on percussion, sometimes very dull. Weak tubular breathing can occasionally be made out over the affected base, a fact which readily accounts for the diagnosis of pneumonia which is usually made in these cases. There can be no doubt that many cases have passed muster as post-operative pneumonia which were really instances of active collapse.

The healthy side of the chest presents, often in a marked degree, the usual characters of compensatory hypertrophy, though it may be doubted whether an enlargement of the lung so rapidly accomplished can be purely physiological. The margin of the enlarged lung often reaches beyond the opposite border of the sternum. By far the most striking sign of the condition, however, is the shifting of the apex beat towards the affected side (Cases 1 and 2). Where the apex beat cannot be felt the position of the displaced heart must be determined by auscultation. In cases of right-sided collapse the normal heart dulness is obliterated. The appearance and percussion of the healthy side of the chest in these cases at first blush suggest pneumothorax.

Another feature of some diagnostic value is the short duration of acute symptoms and the rapid return of the heart towards its normal position. The affected lung also begins to show signs of returning function within a very few days.

The heart signs require somewhat fuller consideration. The displacement towards the affected side is very difficult to account for. According to current views as to the effect of unilateral loss of intrapleural tension, the heart and mediastinum in these cases should be drawn towards the healthy side. The opposite is what actually takes place, unless we are to suppose that the silent, inactive lobe is healthy and the large over-acting lung the seat of disturbance, which is absurd. It may be pointed out, however, that the pathological conditions in the cases under consideration probably differ from those under which the phenomena of disturbances of intrapleural tension have for the most part been studied, in that the evidence tends to show that the disturbance here is mainly due to removal of the muscular expanding force, in the absence of pleural or pulmonary lesions, or of any effusion into the pleural sac. I do not, however, wish to imply that these paradoxical signs are mainly to be accounted for by loss of intrapleural tension; other factors are at work: (1) the effect of sudden collapse of a lobe on the right ventricle (acute dilatation); (2) masking of the heart dulness and apex beat (in right-sided collapse) by the over-distended left lung; (3) the effect of the rapid distension of the healthy lung in preventing displacement of the mediastinum towards the unaffected side. It is probable that all these factors are contributory. The initial symptoms suggest right heart failure, and the orthodiagram taken on the twenty-second day in Case 1 revealed definite dilatation of the right ventricle, which could not otherwise be accounted for. But they do not account for the displacement of the heart towards the left axilla in Case 3, in which there was collapse of the left lower lobe. The explanation of this must, I think, be left open for the present.

The description of the symptoms given above does not apply equally to active collapse occurring in septic cases. Here the clinical picture is much more involved and the diagnosis often difficult on account of the presence of other morbid conditions.

[3] See Cases Illustrating the Association of Respiratory Paralysis with Cardio-pulmonary Symptoms in Diphtheritic Multiple Paralysis, Transactions of Clinical Society of London, vol. xxviii., p. 111.

[4] Although pus was discharged from one of the drainage-tubes in Case 5 for two or three days there were no signs of general pus infection.

I shall have attained the object I had in view if the publication of these cases serves to direct the attention of surgeons to the symptoms and apparent frequency of reflex inhibition of the diaphragm after abdominal operations. It is doubtful whether the occurrence of this accident is even generally known; indeed, the whole subject of post-operative lung complications is in need of closer investigation than it has yet received. Purely medical in their nature and manifestations, they do not appeal to the surgeon. If physicians were more frequently afforded the opportunity of studying the initial stages of the medical complications of the post-operative state I believe that much additional light could be thrown on the nature, and, consequently, on the treatment of these conditions.

I feel sure that when the true history of post-operative lung complications comes to be written, active collapse of the lung, from deficiency of inspiratory power, will be found to occupy an important position among determining causes. In a future communication I hope to deal with the group of cases in which massive collapse was found at the necropsy.

Chandos-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

TWO CASES OF POLIOMYELITIS IN ONE HOUSE.

BY C. R. SUTHERLAND, L.R.C.P. & S. EDIN.,
AND
WILLIAM ROBINSON, M.D. DURH., F.R.C.S. ENG.

As cases of poliomyelitis are being reported as occurring in epidemic form in different parts of the country, we have thought it right to send the following notes referring to two young brothers who were attacked with the disease within four days of each other. The family consists of father, mother, and three sons; the father is a gardener and the family live in an isolated house about two miles from Leamside in the county of Durham.

CASE 1.—Wm. H——, aged 12 years, bathed in the river Wear for the first time in his life on August 9th last. A week later symptoms of a feverish cold developed, and on the 19th he was first seen by one of us (C. R. S.). He then complained of feeling "ill all over," with headache and pain at the back of the neck. His temperature was 99·4° F., he was very restless, and there was slight delirium at night. There was no vomiting, rash, or sore throat. Two days later the headache and pain in the neck had increased, and there was now pain in the legs and in the lumbar spine. He could not turn over in bed and his lower limbs were found to be paralysed, and his right arm could not be raised higher than a right angle from his body. The reflexes were lost. Sensation was unaffected, but there was marked tenderness in the affected muscles. The bladder and rectum were normal. The temperature became normal in a few days, and when seen by us both together on Sept. 18th we found marked wasting of the right arm and both lower limbs, the knees being kept semi-flexed. He could not draw the legs up nor stretch them out. The patellar reflexes were gone; there was no ankle-jerk; the cremasteric and plantar reflexes were normal. He could flex but could not extend his toes. Sensation was normal; but pain was elicited when the legs were gently pulled straight and on grasping the calf and thigh muscles. The bladder and rectum acted normally. There was no response to faradism in the muscles attacked. He turned himself over from his back on to his face by the aid of his arms with great difficulty. His right arm was very helpless, his grasp being very feeble.

CASE 2.—Philip H——, aged 7 years, brother of the former patient, bathed in the river Wear on August 13th and came home "shivering with cold." A week later he became ill with exactly similar symptoms to those of his brother; but he was more restless and sleepless, and the pains in the legs and thighs were very severe and caused him to cry out when moved or lifted even so late as Sept. 18th, when we both saw him together, and there was considerable wasting of the thighs and legs, especially of the extensors. The muscles were very tender when pinched or stretched. There was also loss of contractibility to the faradic current. The bladder, rectum, and cutaneous sensibilities were unaffected. The skin was peeling, especially on the palms, though there had never been any sore throat or rash. He was now sleeping better.

The appetites of both the patients were good and their brain functions were quite normal. A younger brother had bathed with Philip, but beyond a slight febrile attack he has remained well.

Even in the epidemics of poliomyelitis it is stated to be very rare for two members of a family to be affected.[1]

The treatment consisted of rest, warmth, and sedatives; after the subsidence of the acute symptoms of gentle massage and passive movements; galvanism and the insistence of attempts of voluntary movements were also advised.

SUTURE OF THE FAUCIAL PILLARS FOR HÆMORRHAGE FOLLOWING TONSILLECTOMY.

BY ALFRED TENNYSON SMITH, M.D., C.M. ABERD.,
AND
HAROLD S. BARWELL, M.B. LOND., F.R.C.S. ENG.

AN annotation under this heading appears in THE LANCET of Sept. 3rd (p. 745), in which it is stated that Dr. H. H. Gilpatrick[2] had found the method most efficient in three cases of severe hæmorrhage which had come under his observation. This has reminded us of a similarly successful case, a short account of which may serve the useful purpose of drawing attention to this valuable method of treating a very dangerous complication.

A boy, aged 10 years, was admitted to the Cray Valley Hospital suffering from enlarged tonsils and adenoids, and the operation was performed by one of us (A. T. S.) on Sept. 30th, 1908. Although somewhat anæmic and flat-chested, the patient was in fair general health and no history of hæmophilia was given. There was no excessive hæmorrhage at the time, but a large amount of blood was vomited two or three hours later and on several subsequent occasions. An ice-pack round the neck and ice to suck reduced the bleeding, which was found to come chiefly from the right tonsil. Calcium chloride was given in doses of 10 grains every four hours, but slight oozing continued until Oct. 5th, when another severe attack of hæmorrhage ensued. The ice-pack was repeated, the right tonsil was mopped over with adrenalin, digital pressure was applied, and the bleeding diminished. During the next ten days there were several severe hæmorrhages in spite of the internal administration of adrenalin in doses of 20 minims three or four times a day, and the boy appeared to be very ill, with sunken eyes and blanched mucous membranes. The pulse was 126 and the temperature oscillated between 97·2° and 100·2° F. On the evening of Oct. 15th he was seen by one of us (H. S. B.). The fauces were clean and there were no tags, but there was a little oozing from the bed of the right tonsil, which was covered with a thin layer of recent clot. A very little anæsthetic was administered and, with the patient in the right lateral position, the piliars of the right fauces were stitched tightly together with a continuous silk suture. There was no further hæmorrhage, the suture cut through the posterior pillar about the fourth day, and the subsequent history is uneventful. The pulse and temperature did not become normal until Nov. 14th and convalescence was very prolonged. After the first operation careful inquiry elicited the fact that the boy belonged to a family of "bleeders" and that he had had severe hæmorrhage after circumcision in infancy.

The suture must be passed from behind forwards, and the principal difficulty is caused by the extremely small space between the posterior pillar and the pharyngeal wall; a small needle with a very sharp curve is therefore essential. The pillars must also be sewn together through their entire length, and it is wise to begin at the lower end while thoroughly depressing the tongue, for this is the part which is most likely to escape attention.

[1] Compare Epidemic Poliomyelitis in the United States, THE LANCET, Sept. 17th, 1910, p. 914.
[2] Boston Medical and Surgical Journal, July 21st, 1910.

Reviews and Notices of Books.

Diseases of the Colon and Their Surgical Treatment. Founded on the Jacksonian Essay for 1909. By J. P. LOCKHART MUMMERY, F.R.C.S. Eng., B.A., M.D., B.C. Cantab., Jacksonian Prizeman and late Hunterian Professor, Royal College of Surgeons of England; Senior Assistant Surgeon, St. Mark's Hospital for Cancer, Fistula, and Other Diseases of the Rectum, &c. Illustrated by coloured and other plates and numerous figures in the text, many of which are reproduced from the author's sketches. Bristol: John Wright and Son, Limited. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. 1910. Pp. 322. Price 10*s.* net.

THE colon has been much neglected. Dysentery has long been known to be due to ulceration of the colon, and malignant disease has been recognised as occurring in it, but apart from these, very little attention has been paid to diseases of the large intestine. Though constipation is chiefly connected with the colon comparatively little is known about its causes. Within recent years, however, the study of this section of the bowel has become much more extended, and improved methods of diagnosis have afforded a greatly increased amount of information on its diseases. Therefore the time has surely come when it is justifiable, and, indeed, almost imperative, that a special work should be devoted to the consideration of the affections of the colon.

Modern investigations have shown that food reaches the large intestine in a much shorter period of time than used to be imagined, and the use of bismuth in the food and the employment of X rays have given us much useful information as to the progress of the fæcal material along the large intestine. Mr. Mummery quotes some of the evidence that shows that anti-peristaltic movements normally occur in the large intestine. Other points in the physiology of the colon are described, and then the pathology of this portion of the bowel is discussed. The bacteriology is of great importance. Many have claimed that bacteria in the alimentary tract are essential to the well-being of the host, but the author does not agree with this, quoting the fact that in many animals in the Arctic regions the digestive tract is entirely sterile. In this climate, however, bacteria in this situation are unavoidable. The main bacteria present are described, and the author considers that the bacillus coli is not wholly harmful, for it is said to limit the number of other micro-organisms, but we are inclined to think that Mr. Mummery rates too highly the services of the bacillus coli. It may indeed be true that it has some influence in inhibiting the action of other micro-organisms, but it is of such pathological importance that we cannot appreciate greatly any slight beneficial action which it may have.

The diagnosis of diseases of the colon is given fairly fully, the use of the sigmoidoscope and of X rays being described. We agree with the author that diagnoses based on the passage of a rectal tube are quite valueless, and an illustration is given showing how a long rectal tube may curl up in the rectum. An interesting chapter is that dealing with congenital dilatation and hypertrophy of the colon. As to the operative treatment of this condition, when non-operative treatment has failed the author advises resection of the dilated portion. In one case Mr. Mummery performed appendicostomy and the patient did well. This is a much less serious operation than resection, and it should be given a trial. Volvulus of the sigmoid is a serious condition, and for chronic volvulus the author advises shortening of the meso-colon. The importance of adhesions of the large intestine in causing chronic invalidism and troublesome constipation is now being recognised, and here it receives careful consideration. One outcome of the employment of X rays in the examination of the colon has been the recognition of the fact that in many cases the mesocolon sags greatly as it passes from side to side, causing very troublesome constipation. The question of the etiology of intussusception has been much discussed, and Mr. Mummery's explanation is that it is due to a mass of indigestible food coming in contact with the ileo-cæcal valve. For the diagnosis between mucous and ulcerative colitis Mr. Mummery relies chiefly on the sigmoidoscope, and for both these forms of colitis appendicostomy is advised. In the chapter on malignant disease of the colon it is recommended that if the bowel above the growth cannot be entirely emptied before operation an artificial anus should be established before removing the growth. The remainder of the book, with which we have been favourably impressed throughout, is chiefly concerned with a description of the various operations performed on the colon.

A System of Syphilis. In Six Volumes. Edited by D'ARCY POWER, M.B. Oxon., F.R.C.S. Eng., and J. KEOGH MURPHY, M.C. Cantab., F.R.C.S. Eng. Vol. IV.: Syphilis of the Nervous System. By F. W. MOTT, M.D. Lond., F.R.S., F.R.C.P. Lond. London: Henry Frowde and Hodder and Stoughton. 1910. Pp. 502. Price £2 2*s.* net per volume; to subscribers, £10 10*s.* per set of six volumes.

IN deciding to entrust the writing of the whole of this volume of the "System of Syphilis" to one author the editors of the work undoubtedly came to a wise decision. The success of the scheme was ensured when Dr. Mott was asked to undertake the work. It would be difficult to find anyone better fitted for the task, qualified as he is to speak alike as a leading authority on the pathology of the nervous system, a distinguished general physician, and head of the pathological department of Claybury Asylum. The result has fully justified the judgment of the editors; the volume is one of the highest excellence. The claim made for it in the preface that it is the first comprehensive and authoritative statement of the recent advances in our knowledge of syphilis of the nervous system in the light of biological and biochemical research is indeed well founded.

The two most interesting chapters in the book are the second, dealing with the general pathology of syphilis of the nervous system, and the sixth, on the cerebro-spinal fluid in its relation to syphilitic disease of the nervous system. In the former Dr. Mott points out the striking resemblances that exist between the histological lesions of the nervous tissues of chronic trypanosome infections—e.g., dourine and sleeping sickness—and those of syphilitic and parasyphilitic lesions. As he shows clearly, trypanosomiasis corresponds with syphilis in being a disease characterised by successive eruptions due to the escape of trypanosomes from the blood stream into the lymph spaces of the tissues, where they set up a similar tissue reaction. In severe trypanosomiasis, as in severe syphilis, there is always a polyadenitis. It is possible that the chronic trypanosome infections more closely resemble the diseases which are termed parasyphilitic; but Dr. Mott in a considerable experience—he has examined the nervous system in over 30 cases of sleeping sickness—has found that the disease does not show the wasting and destruction of the neural elements to anything like the extent that we find in cases of general paralysis. Microscopically there are many features of striking resemblance in the histological changes seen in the sections of brains affected with acute general paralysis, syphilis, and sleeping sickness. The destruction and decay of cells and fibres is, however, much more striking in cases of general paralysis than in sleeping sickness, and this accords with the clinical symptoms, since in the latter disease the signs point to neural exhaustion rather than to destruction. Dr. Mott maintains that the primary decay of the neuron is the essential feature of general paralysis, the disease consisting

essentially in a loss of durability of specific energy of the cortical cells latest developed, and for this reason he does not agree with the view that general paralysis is a manifestation of quaternary syphilis.

The examination of the cerebro-spinal fluid in syphilitic disease of the nervous system is of such importance that it is not surprising Dr. Mott has devoted a special chapter to this subject. Lymphocytosis of the cerebro-spinal fluid when combined with other facts is an invaluable sign of syphilitic and parasyphilitic affections. Chemical examination of the fluid demonstrates that in general paralysis and tabes there is an increase in the amount of proteid present, and that the syphilo-positive hæmolytic reaction increases gradually with the progress of the disease. The antibodies, therefore, in the cerebro-spinal fluid accumulate in proportion as the decay of the neurons proceeds. In 46 cases of general paralysis under Dr. Mott's care examined for the Wassermann reaction 41, or 89·1 per cent., gave a positive result. After a critical examination of the results obtained by this method and of their interpretation, the author concludes that in the hands of competent observers it is a most valuable means of determining the existence or not of general paralysis. The substances found in the cerebro-spinal fluid of tabetics and general paralytics, which cause a precipitation or a deviation of the complement, are present in an amount proportionate to the activity and length of duration of the disease, and are lipoids or globulins arising from tissue destruction caused in some way by the action of the syphilitic virus. It is probable that in certain cases of syphilitic infection—e.g., general paralysis and tabes—the central nervous system, which in ordinary circumstances is protected against the loss of its lipoid substances, takes part in the process, and this is manifested by the presence of lipoids and globulins in the cerebro-spinal fluids, and these act as the antibodies in the reaction. This complex lipoid, as well as a specific globulin, increases in amount as the process of neuronic decay proceeds.

The general view, then, that Dr. Mott takes with regard to parasyphilitic diseases of the nervous system is that they depend upon two factors, the vital resistance of the patient and the specificity of the virus. All those conditions which, inherited or acquired, tend to active metabolism of groups of neurons functionally correlated, in conjunction with the syphilitic poison, will cause the nerve cells to exercise an abnormal metabolic activity in the production of antibodies against the toxic effects of the virus. For the further elaboration of this argument and a consideration of the possibility of the existence of a special neuro-toxic virus we must refer our readers to the book itself.

In considering the difficult problem of the causation of congenital syphilis in view of the discovery of the spirochæta pallida Dr. Mott draws attention to the researches of Leishman on the spirochæta of tic fever, and suggests that there may be an intracellular phase of the spiral organism, and if so that it exists in the form of chromidian particles which possibly play the part of the nucleus in a more highly developed unicellular organism. If this view be accepted, then we may suppose that the head of the spermatozoon is infected with such a granule, which subsequently multiplies and produces the syphilitic lesions; otherwise the explanation of infection may be that spirochætæ contained in the sperm may remain alive in the uterus and gain access to the developing embryo without infecting the maternal organism. Besides the many pathological and etiological problems propounded, to some of which in the light of recent researches Dr. Mott is able to supply the solution, the clinical side of the work is no less important and equally well written. Many of the clinical histories are particularly complete and interesting because the author is able to describe cases of syphilitic disease of the nervous system of which he has seen the early stages at a general hospital and the later phases in the Claybury Asylum.

The book is the best and most important work on syphilis of the nervous system which has appeared recently, it will certainly remain a classic for many years, and we offer our congratulations to Dr. Mott as its author and to the editors on this latest addition to their comprehensive and valuable "System of Syphilis." The volume is well printed and the illustrations are very good.

Diagnostic et Traitement des Maladies du Nez. By Dr. J. GAREL, Lyons. Third edition. With 145 figures in the text and 4 plates. Paris: Vigot Frères. 1910. Pp. 458. Price 7 francs.

ONE of the attractions in the perusal of a systematic work by a continental authority, particularly one so well known as Dr. Garel, lies in the expectation of finding points of difference between his ideas and those generally held in this country. The volume before us, which is an excellent practical handbook of rhinology for the use of students and practitioners, appeals to rhinologists as well, for the reason just stated. In its pleasantly written pages will be found, as promised in the preface, a reflection of the author's own practice, although not to the exclusion of other matters of interest; and particular pains have been taken to present his personal views with clearness and precision.

The first chapter is occupied with anatomy and physiology and is well illustrated with stereoscopic plates. In the second the methods and instruments for rhinoscopy are described. Under the heading of general semeiology in the third chapter, besides a description of the various symptoms produced by nasal disorders, an account is given of the modes of estimating the degree of permeability of each nostril, with pictures of rhinometers and a rhino-manometer. Some space is also devoted to the means of testing the sense of smell; and the olfactometers of Reuter and Onodi are figured and described. The fourth chapter deals with general therapeutics, including a short but valuable section on hygiene in nasal diseases.

The second part of the work is taken up with a description of each disease in turn. Atrophic rhinitis and ozæna, the one a definite disorder and the other a symptom common to several diseases, are discussed together, although, as the author observes, they are not synonymous; and it is curious to observe the confusion introduced into the subject by this arrangement. The vexed question of the etiology of atrophic rhinitis receives full attention; every fact of importance is noted, while no space is wasted in recording conjectures. Under the head of treatment, paraffin injections, so valuable in the hands of Moure, Brindel, and Broeckaert, are approved by the author, who finds, however, that this treatment fails in a certain proportion of cases. For removing nasal polypi, the author often prefers a galvano-caustic loop to a simple snare; and in the treatment of adenoids he makes use of an electric adenotome of his own device except in cases of young children.

The treatment of deviations and spurs of the nasal septum extends over more than 20 pages, owing to the inclusion of a number of methods which must now be nearly obsolete. Besides submucous resection, which suffices for nearly every case, we find here Asche's, Gleason's, and Moure's operations: the treatment of spurs by electrolysis, by electric trephines or drills, by saws, and by a variety of septotomes. The chapter on diseases of the accessory sinuses is good, but rather too short. For the confirmatory diagnosis of suppuration in the maxillary antrum, catheterism of the ostium is advised rather than puncture of the nasal wall; but for treatment by irrigation alveolar puncture is

till preferred. However, where a radical operation is required, some of us will cordially agree with Dr. Garel that Luc's operation is the best, and that an integral part of that procedure is the careful curetting of the antral cavity.

The book closes with a short chapter on the treatment of fractures and deformities of the nose. There is no index.

Diseases of the Heart and Aorta. By A. D. HIRSCHFELDER, M.D., Associate in Medicine, Johns Hopkins University. With an Introductory Note by L. F. BARKER, M.D., Professor of Medicine, Johns Hopkins University. London and Philadelphia: J. B. Lippincott Company. Pp. 632. Price 25*s*.

Dr. Hirschfelder's object in writing this book has been to present side by side the phenomena observed in examining patients and the facts learned in the laboratory, in order to show how each supplements the other and how each may be of advantage in diagnosis and treatment. It is probable that many of the results obtained in the laboratory have not yet attained practical importance because they have been scattered through medical literature and have not reached the eye of the clinician. It is, however, in the collaboration between the physician and the worker in the laboratory that real progress will be made. In accordance with this idea Dr. Hirschfelder has arranged his material so that the clinical presentation in each chapter is preceded by an introductory section dealing with the experimental pathology and the more fundamental principles of the subject, and these considerations have been used as a basis for frequent reference in the clinical discussions. We certainly agree with Dr. Hirschfelder when he remarks that the trend of clinical observation during the past two decades has been towards more accurate study of disturbances of function and towards the introduction of mechanical methods for their observation—methods of precision which are intended to supplement or supplant the older and simpler methods of physical diagnosis. Chief among these may be mentioned the study of blood pressure, the graphic studies upon alterations in cardiac rhythm by means of the venous pulse, and the outlining of the heart and vessels by means of the X rays. A good account is given of the various instruments and methods employed. Many of the results obtained are of purely scientific interest, whilst others are of considerable practical value.

Some interesting remarks are made on the subject of cardiac overstrain. The failure of the heart is traced through its varying stages from the simple fatigue of the normal heart in exercise, through the stage of primary overstrain to that of broken compensation, especial attention being devoted to the states of broken pulmonary compensation arising from failure of the left ventricle and of broken systemic compensation from failure of the right. The line of reasoning adopted in the consideration of broken compensation is well worthy of study, for the subject is presented in a manner not usually adopted by writers on cardiac disease. The chapters upon the individual organic lesions include discussions of pathological anatomy, pathogenesis, pathological physiology, symptomatology, and etiology, as well as notes of typical cases, their diagnosis, prognosis, and treatment.

Considerable space is given to the difficult question of purely functional disturbances of cardiac action. Paroxysmal tachycardia is discussed at length, and the views of several observers are carefully criticised. The treatment of this affection is still unsatisfactory, and the significant words of Dr. James Mackenzie are quoted: "In my early days, I, too, thought I knew how to stop attacks, but more extended experience has shown me that when they stopped it was from some cause which was unknown to me and which was independent of any means I employed." The important subject of pregnancy and labour in cases of heart disease receives adequate attention. The general practitioner is frequently consulted by both patients and their relatives on this point, and much useful information will be derived from Dr. Hirschfelder's remarks. We have read this volume with much interest and can recommend it to our readers.

LIBRARY TABLE.

A Beautiful Arm: A History of the Vaccination Delusion. By AMOS BOOTH (of Leicester). With an Appreciation of Mr. Booth's work by F. G. STEVENS (of Leicester). London: Sampson Low, Marston, and Co. Pp. 132. Price 2*s*. net.—The full title is an example of the inflated style of writing which characterises the whole book. The revision of the matter for publication has not been very careful, for we are told in the preface that "Those evidences are revealed by the photograph given as a frontispiece and will probably be as repellent to the ordinary observer as they are obvious." The frontispiece, unfortunately, is a portrait of the author. The opening chapter, headed "Crazes, Delusions, and Superstitions," teems with symptoms of a well-known disease, "cacoëthes scribendi." The whole book consists of the usual antivaccination diatribes, and contains no reasoned attack on the practice of vaccination. Mr. Booth begins the chapter entitled "Statistics" by an attack on the validity of statistics, especially statistics of vaccination and its results. He says: "It is undeniable that the most potent weapon the supporters of Jenner have used in trying to prop up vaccination and instil its 'blessings' in the minds of the people all over the world has been one-sided statistics." In spite of his depreciation of statistics, especially one-sided ones, Mr. Booth proceeds, on p. 90, to support his case by statistics as to the death-rate in Leicester, which he gives for the years 1868–72 ("with vaccination at its climax") as about 27 per 1000, being 5 above the general rate per 1000 for England and Wales. In 1888–9 with practically no vaccination the death-rate in Leicester was 17·5, and in all England and Wales was 17·9; while "at the date of writing, August 9th, 1908, the general death-rate per 1000 of the population of Leicester is 9·7, though the town is unvaccinated and un-smallpoxed." It is to be observed that Mr. Booth seems carefully to eschew the years 1892–3, when the town *was* visited by small-pox. Let us study as a contrast to Mr. Booth's statistics the following: "As the comparative immunity from small-pox of 'unvaccinated' Leicester has become a stock argument among antivaccinationists, it is especially instructive to see how the town fares when the disease happens to obtain a footing in it. The Leicester epidemic of 1892-3 was investigated on behalf of the Royal Commission on Vaccination by Dr. Sidney Coupland, and his report gives the following facts. Of children under 10 years of age there were: Vaccinated cases, 2; deaths, 0 = 0·0 per cent. Unvaccinated cases, 107; deaths, 15 = 14·0 per cent. Of persons over 10 years of age there were: Vaccinated (including doubtful cases), 197; deaths, 2 = 1·0 per cent. Unvaccinated cases, 51; deaths, 4 = 7·8 per cent. These figures are convincing enough by themselves, but they gain additional significance when the cases are arranged according to the severity of the small-pox. Dr. Coupland's report shows that of the 199 vaccinated cases, 17, or 8·5 per cent., were confluent; 20, or 10·1 per cent., were coherent; 50, or 25·1 per cent., were discrete; 112, or 56·3 per cent., were mild. Of the 158 unvaccinated cases, 79, or 50·0 per cent., were confluent (including malignant); 36, or 22·0 per cent., were coherent; 28, or 17·7 per cent., were discrete; 15, or 9·5 per cent., were mild." The above is taken verbatim from the article on Vaccinia as a

Branch of Preventive Medicine by Mr. Ernest Hart, in "Allbutt's System of Medicine" (1901). Our readers know what small-pox means; and they will appreciate, though they probably know the details already, the full inwardness of these careful and accurate compilations. We cannot expect such statistics to appeal to any reasoning power possessed by Mr. Booth or his adherents. Our profession does not claim that vaccination is an ideal process, but it is the best at our command for the prevention of wide epidemics of small-pox. We know what such epidemics mean.

JOURNALS AND MAGAZINES.

The Child, a Monthly Journal devoted to Child Welfare. Edited by T. N. KELYNACK, M.D. Vict. Vol. I., No. 1. October, 1910. London: John Bale, Sons, and Danielsson. Subscription, £1 1*s.* per annum. Single copies, 2*s.* each.—The object of this journal is to provide an authoritative and representative presentment of all subjects relating to child life. It seeks to serve as a sort of clearing house for the ready transfer and exchange of trustworthy information concerning truths relating to childhood. It is essentially medico-sociological and cosmopolitan, opening its pages to writers of all nationalities, parents, educationists, philanthropic workers, physicians, and politicians. This first number contains articles by eminent British and foreign medical men, headmasters of schools, and principals of children's homes and orphanages.

The Dublin Journal of Medical Science.—To the September number of this magazine Dr. G. Arbour Stephens contributes an interesting paper on the Therapeutic Qualities of Calcium Permanganate, which he finds very useful in cases of gastric affection (ulcer, inflammation), as well as in lead poisoning and in malaria. Theses by Dr. Marius Anné Diemont on Mouth-breathing, and by Dr. William Leggett on the Present Position of Tuberculin Therapy appear in the same issue, the latter not being concluded in this number.

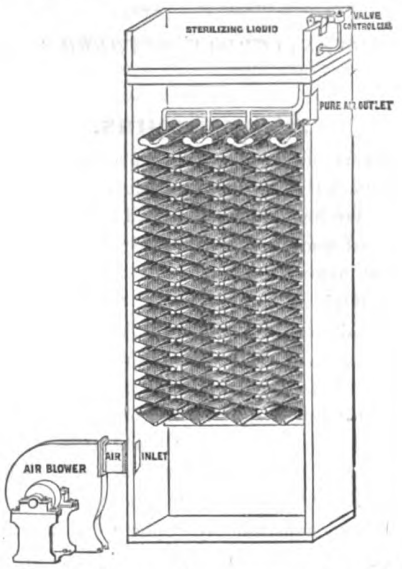
The Bristol Medico-Chirurgical Journal.—In the September number Dr. W. Kenneth Wills records a curious case in which an anomalous cutaneous eruption was apparently due to the action of the B. diphtheriæ and cleared up under the use of antitoxin. Dr. J. M. Rattray writes on post-graduate study, and Dr. J. Michell Clarke on the treatment of leucocythæmia by X rays, which he finds capable of producing some improvement but not cure of the disease. Dr. William Cotton applies some mathematical principles to the estimation of the size of internal organs, of which shadows are thrown on the fluorescent screen.

The Medical Chronicle.—The only original matter in the September issue of this journal is a report on vaccine therapeutics. The authors, Dr. G. E. Loveday and Dr. Albert Ramsbottom, conclude that the method is useful in genito-urinary tuberculosis, staphylococcic infections, streptococcic cellulitis, and gonococcal arthritis. They also believe that in acute pneumonia inoculations are of value and that estimations of the opsonic index may be useful aids to diagnosis. A memorial notice of Mr. John Edward Platt records the career of a careful surgeon and conscientious teacher, whose early death is much to be deplored.

New Inventions.

THE ROBERTSON, RINTOUL, AND SPENCER APPARATUS FOR THE PURIFICATION AND STERILISATION OF THE AIR.

THE accompanying illustration will convey a general idea of the principle upon which this air purifier acts. In so many words, it is an efficient scrubber which, however, removes not only macroscopic but microscopic impurities also. Careful bacteriological experiments have shown that the apparatus is capable of removing from the air passing through it practically all the organisms present. Petri dishes containing gelatin have been exposed to the ingoing air and to the effluent, with the result that while liquefying, pigment-forming organisms were abundantly developed on the former plate the latter gave practically negative results. It is interesting to learn that the apparatus was originally designed for recovering the acetone vapour from air in operations in which that volatile substance is



used as a solvent. The results were so good and led to such an important economy as to suggest that the apparatus might be of service for other purposes in which pure air is a desideratum. So far perhaps the most important commercial application has been the purification of the air of breweries. As is well known, the uncertainty of the character and quality of beer arises chiefly out of the attack upon malt liquor by foreign organisms. Beer is readily liable, in fact, to disease, but if the brewing operations are conducted in an environment of pure air the product is invariably pure and healthy and uniform in character and quality. The wort can be aerated successfully when the air employed is purified by this apparatus. There are obviously indications of the apparatus being employed with success in higher applications, as, for example, in the purification of the air in public buildings, in the hospital ward, the operating theatre, and so forth. The good results obtained by this system are, no doubt, a sequel to the attention which has been paid to detail, having regard also to economy of working.

The system consists in blowing air through a slowly descending stream of viscous liquid (sugar, dextrin, glycerine) containing an inoffensive germicide, dripping down over loosely-woven strands of cord arranged in zig-zag fashion. This arrangement exposes to the air the largest possible purifying surface without obstructing its velocity. The illustration shows the situation of the strands of fibre in the box, there being only just sufficient space between the strands to permit of the passage of the air, which is so broken up that it is forced to come into intimate contact with the viscous fluid and be sterilised by it. The air is thus not heated and not thereby devitalised; its fresh quality is not taken out of it. The essential point in the system is the very intimate contact that is effected between the air and the germicidal viscous fluid. There is apparently no limit as to the capacity of a machine for purifying the air on this plan, and the attention of medical officers, sanitary authorities, and others may well be drawn to the advantages which the application of this system to the purification of air offers. The makers are Messrs. W. J. Fraser and Co., Limited, of 98, Commercial-road, East London.

LONDON HOSPITAL MEDICAL COLLEGE: SCHORSTEIN LECTURE.—This lecture was delivered on Oct. 3rd, in the anatomical theatre, by Dr. Robert Hutchison, physician to the hospital, who took as his subject Congenital Pyloric Stenosis.

THE LANCET.

LONDON: SATURDAY, OCTOBER 8, 1910.

Æquanimitas.

ALL engineers and mechanicians are aware of the fact that when an engine has been running perfectly steadily for some time defects develop, and if unchecked lead to disaster; and one of the most common is that a wheel gets slightly "out of true," so that instead of the axis of revolution occupying the centre of a circle it occupies one of the foci of an ellipse. In the political world as well as in the physical world, the same phenomena are visible from time to time, and at the present moment the general political engine in this country seems to be running irregularly for the keynote of mundane matters is unrest. In the labour world unrest is paramount in the engineering trade and the cotton trade, as in railway and shipping organization; in politics, and not in this country alone, the atmosphere is by no means clear; and, to come to close quarters, in our own profession there are doubt and distrust as to the future with reference to many questions. Poor-law reform and the reconstruction of the public health service exercise the minds of many; the problem of quackery appears to grow more difficult of solution; the practical difficulties of medical education are increasing. In all these matters it may be said that the axis of revolution has shifted so that the running of the machine is impaired, and just as the inanimate engine requires a level-headed engineer to deal with its defects and to remove them, so the animate engine requires its governing faculties to be brought into play, and the chiefest of these is that cast of mind which used to be considered particularly British—namely, the faculty for seeing both sides of a question and of taking misfortune with calmness.

It may be argued that medicine has but little to do with politics and that political and labour unrest do not affect the profession of medicine. But though this is true from one point of view, and though, thank Heaven, the verities of science remain verities in the hands of their exponents despite the political bias, the creed, or the colour of their exponents, yet from another point of view medicine may be said to be all politics, regarding the word in its literal sense as expressing the relations of men one to another as they live in society. What are these relations but the main province of modern medicine? Questions of public health, of the prevention of disease, of housing, feeding, clothing, and sanitation in general, of whether the rising generation shall be given due opportunity to become a healthy race, all these questions in the main turn on politics, and all are certainly medical in the surest sense. The prosperity of the community is obviously the broad objective of the politician, and health—national health and individual health—becomes every day more and more a question of wealth. Can a nation and the items which compose it live adequately free from care and with reasonable leisure and opportunity for recreation, with healthy dwellings and sound food, is a question which centres round one thing—Can the nation afford to pay the bill? We do not go so far as to answer the question for this country, for much the same reason that Dr. JOHNSON gave to the inquisitive lady—"ignorance, madam, sheer ignorance"—but we are certain that no one ever entered into financial contracts with better success because he was in a condition of muddle and unrest. Equanimity is what we all want. Unrest is not in itself a matter to be deplored for the body politic, which, like the human body, may be said to be a collection of units, some superior, some inferior, but all dependent the one on the other. In the human body the rise in temperature which follows on a bacterial invasion is really an index of chemico-physiological changes which the invaded body is making to protect itself and to maintain its efficiency as a living whole. Similar febrile perturbations arise in bodies politic and bodies social when the necessity for readjustment of old-standing conditions is pressed upon the more conservative elements of the social organism. The intensity of the fever may indicate either a very sharp attack or a very ready response by the powers resisting the invasion. That large and wide-reaching changes in the whole social construction of the country are not only being demanded but are going to arrive within the near future there can be no doubt, and the problem to be solved is how these changes can best be brought about with the least disturbance of political physiology. Unrest there must be, but what we want is equanimity to face the necessity—equanimity lest unrest should degenerate into muddle.

It is on such considerations as the foregoing that we venture to urge the cultivation of the *æqua mens* in its widest sense, of the mind that is not unduly exalted, of the mind that is able to see that there may be something worthy of consideration in the arguments of an opponent. In the treatment of the human body an overdose of remedy may result in the death of the body cells as well as of the invading bacilli or of the adventitious tissue. Calmness and the avoidance of meddlesome surgery are precautions which hold as strongly for the treatment of the diseases of the body politic as for those of the human body. The stress and hurry of modern life form an environment which militates against the judicial and impartial consideration of problems at all times difficult of solution, and doubly so in these days. But we have only recently seen how in the presence of a great national grief the old British faculty of self-restraint could assert itself, and how political passion could be stilled. We may plead, then, that in the near future, on the assembling of the great Council of the Nation, both the public in general and those whom they send to represent them will cultivate the "equal mind," and remember that great problems which nearly touch the well-being of the nation may be argued with calmness and with consideration for the opinions of the opposite side. Only so can we hope to see decisions which, even if not a complete solution of the difficulties, may at least satisfy the greater requirements of the problems.

The Medical Addresses.

THE Introductory Addresses of the Medical Session now opening have been founded upon topics which, on the whole, appear to cover a somewhat larger area of thought than has been usual with them; and perhaps that which departed most completely from the commonplace ideal was the elaborate comparison instituted by Mr. E. W. ROUGHTON, at the London School of Medicine for Women, between the several characteristics and capacities of the sexes. We are not quite sure that his conclusions would in all cases be accepted without hesitation by those to whom they were addressed; but they had at least the merit of being free from ambiguity. He asserted, in quite plain terms, that the differences between the sexes are deeper and more far-reaching than costume or political disability; and at this last he glanced so slightly, and so completely without any expression of a wish for its removal, as to suggest either that the highly cultivated women to whom he spoke are not to be numbered amongst the ranks of the female suffragists, or else that he was himself quite superior to any attempt to gratify his audience by a concession to opinions which he presumably does not entertain. He even went so far as to introduce into his discourse a quotation from Dr. HARRY CAMPBELL, setting forth that the powers of self-reliance, origination, and invention in woman have at best been only feebly developed, and that the sweetness of character of which so many suffragists are openly scornful is, and is likely to remain, her most distinguishing characteristic. Closely allied to this is "her capacity for dissembling," a capacity for which the only suggested use is on the occasions, sometimes arising in the practice of medicine, when it is necessary "to deceive a patient in her own interest." Mr. ROUGHTON advised his lady students, "as a rule," but apparently as a rule to which there may be exceptions, to "say what they mean and mean what they say"; and he then proceeded to discuss differences between the rate of physiological development in the sexes, as well as differences in its nature which are answerable for organic and permanent differences of temperament and character. At the present time, he said, most women employ male doctors because, having little or no confidence in themselves, they find it difficult to place any in their medical sisters; but he gave no support to the profane legend that the patients, when suffering, find that they receive more sympathy from the male sex than from their own. This is, we hope and believe, an invention of the misogynist; and Mr. ROUGHTON must evidently be of the same opinion, for he speaks of gynæcology as the department of professional work in which it is important that women should excel. On the whole, it may be doubted whether his views would be endorsed by the distinguished pioneers of female medical education, but it is nevertheless plainly desirable that the attention of lady students should be called, at least on suitable occasions, to the difficulties as well as to the prospects of the career on which they have chosen to embark.

At University College Hospital the Dean of SALISBURY delivered an address which was chiefly in praise of poetry, and which incidentally introduced a quotation in which Lord MORLEY gave expression to that ignorant impatience of the claims of physical science which in this country is the distinguishing qualification of the professional politician, and one of the chief causes of the disasters which his ascendancy entails upon the community. KING EDWARD VII. asked a famous question about disease—"If preventable, why is it not prevented?" and the answer is, of course, that ignorance of science which is so great a source of national weakness, and which some critics would say that our system of government might have been designed in order to perpetuate. The Dean of SALISBURY is of opinion that "the special subjects on which medical men must occupy the main power of their minds are impediments in the way of complete self-development"; and he fears that concentration of the mental energies in one direction must leave the other powers and capabilities of the mind unused and cause them to dwindle and die. With great respect for the Dean, whose long ministration at St. Peter's, Vere-street, made him to a particular degree for many years the pastor of the London consultant, this appears to us to be very nearly nonsense, and we should meet his appeal to PASCAL, which he employed as a text, by a counter appeal to a much greater man, JOHN HUNTER, who wrote to JENNER "Don't think, but try." The so-called thinking which is unchecked by experiment is in its very nature futile, and has landed a succession of speculative philosophers in as many labyrinths of conflicting and only half-intelligible hypotheses. The man of science, in the true sense of the word, is called upon, not only to exercise his imagination upon the loftiest of all problems, the problems connected with the structure and government of the universe, but he is also called upon to control its exercise by the constant discipline of an appeal to fact. There can be no narrowness in work that ranges from the nebulæ of our system to the revelations of the ultra-microscope; while the average politician's evaluation of science is presumably about as trustworthy as that evaluation of the French language by Mr. LILLIVICK which may be found in the history of "Nicholas Nickleby." When the Dean of SALISBURY approaches the subject of poetry he is, we think, on surer ground; but we doubt whether the daily perusal which he advocates is of equal efficiency with that systematic storage during youth of which HALLAM has spoken in such noble words. He describes how, in MILTON'S blindness, the remembrance of early reading came over his dark and lonely path like the moon emerging from clouds. "They who, though not enduring the calamity of MILTON, have known what it is, when afar from books, in solitude, or in travelling, or in the intervals of worldly care, to feed on poetical recollections, to murmur over the beautiful lines whose cadence has long delighted their ear, to recall the sentiments and images which retain by association the charm that early years once gave them, they will feel the inestimable value of committing to the memory, in the prime of its power, what it will easily receive and indelibly retain. I know not, indeed, whether an education that deals much with poetry, such as is still usual in England, has any more solid argument among many in its favour than that it lays the foundation of intellectual pleasures at the other extreme of life."

At St. Mary's Hospital Sir ARTHUR CONAN DOYLE brought all the charm of his literary style to bear upon his illustrations of the hundred ways in which variations of health control or modify the actions of mankind, often, indeed, of the individuals whose influence over their fellows is the most far-reaching and the most important; and he showed how completely medicine and the phenomena with which medicine chiefly deals are interwoven with all the currents of life, from those which go to the making of history to those which affect only the humblest individuals. He showed how it becomes the practitioner to avail himself, not only of all the resources of his art, as these are commonly understood, but of all the conditions of human feeling by which the patient may be rendered more responsive to his touch. "A strong and kindly personality," an "exuberance of vitality and kindliness" are indeed, as he declared, potent auxiliaries to the healer; and, as these conditions are practically incompatible with ill health, he might with entire correctness have urged upon his hearers the duty of living wisely themselves in order to be the better able to inculcate the practice of wisdom upon others. The enemies against which the physician is called upon to contend have recently, indeed, been to a great extent dragged from their hiding places into the open, and can now be assailed with weapons of precision; but the complete efficacy even of these must always be largely dependent upon the generalship with which they are massed and directed upon their objective. At Manchester, Professor WILLIAM THORBURN laid stress upon the view which is sometimes neglected, but is none the less just, to the effect that even some of the most brilliant successes of the operator may be regarded as being in one sense of the nature of defeats, and that we should look forward to an ultimate replacement of the art of surgery by the still more perfect methods which it is our duty to seek, and to which it may be our privilege hereafter to attain. At St. George's Hospital a discourse upon the merits and faults of the current system of prize-giving as a stimulus to education and as a measure of its effects concluded with an earnest appeal to the givers of endowments to remember not only the pupil, but also, and even preferably, the teacher by whom his work is guided, and who, by the very nature of his pursuits, is at present heavily weighted in those competitions of life in which his knowledge qualifies him to excel. If education is to command the services of the best possible teachers it becomes more important to provide professorships than scholarships.

Hereditary Aspects of Nervous and Mental Disease.

AS a part of prophylactic therapeutics the subject of hereditary disease assumes a constantly increasing importance. Problems of vast consequence to the individual and to society can in all probability only satisfactorily be approached when our knowledge of heredity becomes fuller than it is at present, while the advice which is occasionally asked as to marriage and the procreation of children can only be more than faint-heartedly given while our opinions remain based upon nothing more substantial than surmise. Many are aware that there is a powerful biological school which is sceptical of any transmission of acquired qualities. By an obvious association of ideas it seems absurd, if this hypothesis be correct, to forbid marriage to those who have in their own persons evidences of diseased qualities which they have acquired. But even WEISMANN himself admits that germ-plasm may be modified by changes in nutrition occurring in the rest of the organism, and with this large exception conceded the path of the physician becomes better marked. For the moment the question of the transmission of acquired characters is perhaps of academic interest only, for it is apparently on all sides admitted that the germ-plasm may be injured by disease and by implication may be incapable of perfectly performing its functions: an imperfection which can undoubtedly eventuate in death and which may be presumed sometimes to result in something short of death, and to which we give the name disease.

In this limited sense, at any rate, disease is hereditary. Controversy, however, arises if we pass beyond these bounds. In the case of epilepsy there is no shadow of doubt that members of successive generations of certain families exhibit various epileptic phenomena; so much we may affirm. But to pass from this statement of indubitable fact to its explanation is at present out of our power. It is possible that in epilepsy there is transmitted a nervous system which is particularly liable to phenomena which in our crude way we liken to explosions or storms; or it may be that the nervous system is one peculiarly susceptible to certain toxins; or lastly, to bring the etiology within WEISMANN'S admission, it is possible that a toxin has interfered with the growth of the germ-plasm, and that, as a consequence, in the next generation the germ-plasm has been defective and the body-plasm has reciprocally been affected. Such hypotheses seem almost endlessly possible. The mystery only deepens when we come to the consideration of those diseases in which a generation is missed and a female transmits to a male. Here the hypothesis of toxic affection would appear to be of minimal validity. Dr. F. W. MOTT, in the Huxley lecture delivered this week at the opening of the medical session at Charing Cross Hospital, has once again drawn attention to the occurrence of certain nervous diseases in successive generations of certain families, the diseases for the most part being of a character in which toxic etiological factors could hardly be suspected; for instance, myotonia congenita, the myopathies, Huntington's chorea, and hereditary ataxia. It is remarkable, however, how singularly defective our statistics on these matters are, and that such as we have are of little or no value from a scientific point of view. With this there is, nevertheless, a preponderance of feeling among experts in favour of the importance of heredity in the production of feebleminded-ness, insanity, and certain organic and functional nervous disorders. From figures which Dr. MOTT adduces the interesting fact emerges that in insanity there is a greater incidence of "transmission" from parents to offspring through the female side than through the male. It would appear, too, that there is a tendency for insanity not to proceed beyond three generations, and that as a rule the family then undergoes a happy extinction. Such matters as these and many others Dr. MOTT has illuminated in his

admirable address which is published at p. 1057 of our present issue. There can be but little doubt that with greater artificiality in the preservation of the species, undoubtedly concomitant with advancing civilisation, there must arise inquiry into the less instinctive and more artificial methods for its healthy continuance. Herein lies the demand for eugenic knowledge, while from such work as that of Dr. MOTT we learn the immense way we have to go before we can even hope to see daylight.

Annotations.

"Ne quid nimis."

THE KING AND THE TOURING CLUB OF FRANCE.

IN response to a suggestion made by Sir Francis Bertie, the British Ambassador in Paris, His Majesty King George V. has graciously accepted an honorary membership of the Touring Club of France. At almost the same time His Majesty King Albert I. of Belgium accepted the same membership. Those who are acquainted with the excellent work accomplished by the Touring Club of France will rejoice at the well-merited compliments thus conferred on it. It is not as tourists but as sanitary reformers that we welcome the action of their Majesties, for that is the side of the club's work in which we are interested. The first attempt made by the Touring Club of France in health directions was to insist on the sanitary reform of the hotels that tourists were likely to frequent. Hotels that put in a proper system of drainage and furnished their rooms in a wholesome manner were allowed to call themselves Touring Club hotels. Here the thick carpets spread over the whole room and permanently fastened down, the heavy window drapings, and voluminous bed-hangings were all abolished. The paper in a Touring Club hotel is stripped off the walls and washable paint or distemper is employed instead. The floors are wood blocks polished with beeswax, or are laid with tiles. A small rug or two that can be lifted away and shaken alone is allowed on the floor. The numerous culture grounds for infective material provided by the old-fashioned manner of furnishing hotel rooms are thus done away with. Plenty of light and every facility for cleaning are provided, and in some cases now the angles between the walls and the floor and ceiling are being rounded off, so that these havens of dust will soon exist no more. The members of the Touring Club are provided with regular forms, so that they can send complaints to the central office if any hotel fails to keep the rules laid down. These rules relate not only to sanitation but also to the charges. If a traveller is overcharged he need not incur the unpleasantness of a dispute with the landlord. He need only insist on a detailed receipt for the payment which he has made. This he sends to the central office, and if he has been overcharged he will not have to wait long before the unjust surplus is returned to him. Agreements have been signed between the Touring Club of France with more than 3000 hotels, not only in France but in many other countries. Here the tourist will find the best sanitary conditions available, and will not have to pay more than the Touring Club tariff. Of late, in regard to this control exercised over hotels, a new and very interesting departure has been made. The gastronomic tourist has gained a hearing. With the increasing facilities of travel there is an unfortunate tendency to build hotels all over Europe on almost identically the same model. The menus of the meals are always in the same style, and local characteristics are being effaced by the general European assimilation. British and American travellers, by reason of their ignorance of the gastronomic arts, are largely responsible for the deterioration of the cooking, especially in the first-class hotels. The Touring Club is making investigations and offering prizes to those hotels which maintain the local traditions, which persist in cooking the dishes for which the town or province is renowned, even if a foreigner cannot appreciate them. When the best and most artistic samples of culinary art are looked upon with suspicion by the ignorant, or refused by the dyspeptic, the native chef is apt to lose heart, and so clearly had this become the case that the best traditions of French cooking were in danger. Now the Touring Club is trying to save the situation, and the connoisseur may still expect to find dishes capable of satisfying an experienced palate. After thus seeking to improve the hotels, the Touring Club exercises its great influence to maintain the roads by which all the beautiful parts of the country can be reached. It sees to it that there shall be a popular outcry raised if a natural or artistic beauty-spot is likely to be destroyed or spoilt in any way. But more than that, it watches over the forests that they shall not be uselessly cut down, that likely spots shall be planted with trees, that the beauty of sites shall be improved by suitable verdure or timber, and that the climate shall not suffer for want of sufficient woodland. All this is done by the exercise of personal influence and persuasion, by publications, by the distribution of prizes, and by the aid of subventions. Altogether the Touring Club of France has spent more than £100,000 in this public service, a service which does so much to facilitate that form of travelling called touring. This, we take it, is holiday travelling, and the holiday is essentially a health institution. The work of the Touring Club is the work of preventive medicine, for it facilitates the relaxation on which health so much depends; and, by the sanitary control of hotels, it seeks to dissipate those dangers that used to be associated with travelling and hotel life.

"THE FATE OF ICARUS."

"BYRON'S 'Mountain Spirit' (writes an Italian correspondent) might be credited with a 'sombre acquiescence' in the fate of poor Chavez were it to act as a deterrent to all future aviators in daring to 'molest her ancient, solitary reign.' But that grim satisfaction will be denied her. Other attempts will follow till the flight over the Alps will in turn be surpassed, and Chavez's feat (who knows?) be eclipsed by another, and less tragic, flight over the Andes of his native Peru. Meanwhile, the company of competing aviators at Milan were well inspired to suspend operations out of respect to their young rival's memory, for a more pathetic extinction of a career bright with promise has rarely been put on record. To have out-soared all competitors of all nationalities, to have earned the enthusiastic applause of the world, and the Rabelaisian title of 'Astrophil,' with the motto 'Quo non ascendam?' to have reached an altitude of 2680 metres, and to have succumbed to a fall of barely 20, surely this must have induced a moral revulsion, a 'heart failure,' which explains the nervous collapse which frustrated all the skill and care of the numerous consultants gathered round his bed. True, the surgical lesions were grave; not more so, however, if not indeed less, than those from which many a victim of a railway accident has recovered. But the experienced head of the medical clinique at Turin, the Senator Professor Bozzolo, entertained from the first a prognosis more than doubtful, remarking to a colleague as he left the patient's private room in the hospital at Domodossolo, 'I fear the diffused nervous shock is causing the ominous prostration. Neither the consultants in immediate charge of the case nor I myself have been able to localise any seat of disturbance.' Later, Professor Bozzolo

dictated the following bulletin: 'Considerable general depression, with tendency to drowsiness consequent on a restless night and increased since yesterday. Pulse at a high rate of frequency, 134; respiration, 34; temperature, 37° C. *Prognostico assai riservato* (prognosis very reserved.)' Every effort was expended towards saving the brave young soul, whose 'will to live' (the analogue in the physical, of the 'will to believe' in the spiritual, sphere) was a distinct clinical asset; but *Dis aliter visum*. Reviving for a time, under the inhalation of oxygen, of which 600 litres were consumed from first to last, he met each visit with a smile and seemed more concerned with the trouble he was giving than with his own sufferings. At last delirium supervened, in the course of which he was heard to murmur incoherently, the only expressions to be distinctly made out being, 'Ah! ..... *la montagne* ..... la montagne!' And so, having already received the last consolations of the Church at the hands of the good canonico Colcati, he glided away, in the words of John Tyndall, 'like a streak of morning cloud, into the infinite azure of the past.'"

INTESTINAL OBSTRUCTION DUE TO A FOREIGN BODY IN THE ABDOMEN, PRESUMABLY INTRODUCED THROUGH A PERFORATION IN THE UTERUS.

IN the *New York Medical Journal* of Sept. 17th Dr. Henry Roth has reported a case of intestinal obstruction due to an extraordinary cause—a foreign body in the peritoneal cavity which was apparently introduced through a perforation made in the uterus in the induction of abortion. A single woman, aged 24 years, was admitted into hospital with the following history on May 11th, 1908. Three weeks previously she had an attack of abdominal cramps and vomiting which lasted about eight hours. She remained well for a week, and then a similar attack occurred which lasted 24 hours. She again remained well until May 10th, the day before admission, when, whilst walking in the street, she was seized with severe abdominal pain and vomiting. The pain was more severe than before, and compelled her to take to her bed. At first the pain was all over the abdomen, but gradually it became most marked in the right lower quadrant. She vomited repeatedly, and on the following day suffered intensely from thirst, and was unable to retain even small quantities of water. In spite of the repeated administration of cathartics and enemata the bowels did not act. On examination the abdomen was found moderately distended; rigidity was most marked in the right lower quadrant. There was considerable tenderness over the lower part of the abdomen, and this was most marked on the right of the umbilicus. No mass was palpable. The temperature was 101° F., the pulse was 80, and the respirations were 16. The pain was observed to be paroxysmal, coming on about every ten minutes. In view of the history of two similar attacks in three weeks and the signs, acute appendicitis was diagnosed, but in consequence of the paroxysmal cramp-like pains the possibility of intestinal obstruction was not negatived. Laparotomy was at once performed, about 36 hours after the onset of the pain. The incision was made on the right side and on opening the peritoneum much clear serum escaped. Digital exploration revealed a cord-like structure running from the right side downwards towards the median line and attached to a mass of intestine which it constricted. The structure proved to be omentum and on separating it and withdrawing it from the abdomen a body about 2½ inches long and ¼ inch wide was brought out. This proved to be a pledget of absorbent cotton discoloured by blood. Further examination revealed two loops of ileum adherent at the mesenteric borders. The adhesions were broad and firm and required ligation before division. In the midst of these adhesions more cotton was found and removed. Part of the omentum and the vermiform appendix were removed. The question arose, How did the cotton reach the peritoneal cavity? As laparotomy had not previously been performed, perforation of the uterus in the production of abortion was suspected. The pelvic organs were therefore carefully examined. All that could be found was a small indurated area in the lower part of the posterior wall of the uterus. The abdominal incision was closed without drainage and recovery was uneventful. After the operation the patient admitted that she had had several abortions induced, the first about two years previously and the last on March 28th, 1908, when she was about two months pregnant, about six weeks before the onset of the present illness. No unusual pain or other symptoms followed the abortion. The last menstruation occurred about two weeks before admission. In most cases in which foreign bodies have been found in the peritoneal cavity they have been left there accidentally in the course of operations. In this case the cotton was probably introduced on a uterine sound or forceps which perforated the uterus. A. P. Heineck, by an exhaustive search of medical literature from 1895 to 1907, collected 160 cases of perforation of the uterus during intra-uterine instrumentation. In 26 the object was to induce abortion. He found that perforation could occur with startling ease even in the hands of clever operators. He disagreed with those who believed that the accident was not followed by alarming symptoms. Shock, hæmorrhage, injury of viscera, infection, prolapse of omentum or intestine, with or without strangulation, were the immediate causes of danger. Several cases have been recorded in which bougies were introduced into the abdomen through a perforation in the uterus in the induction of abortion and were later found when laparotomy became necessary and removed.

THE RIGHT TO EFFICIENT VENTILATION AT SEA.

A VERY important decision has been given by Judge Rentoul in the City of London Court. Returning from South Africa, two passengers complained that their cabin had no ventilation and paid £4 12*s*. 2*d*. to occupy another cabin, contending that "a cabin without a fan was quite intolerable." On the other hand, the Union Castle Mail Steamship Co. in their booklet state that "a complete system of ventilation had been adopted, and that electricity was brought to bear on the cabins, saloons, &c., by the adoption of a large number of electric fans." Judge Rentoul said that anybody reading the booklet would think all the cabins had electric fans in them, and as the discarded cabin had no fan he gave the verdict in favour of the passenger, and ordered that the money paid to ensure a change of cabins should be restored. So far so good, and it is something to know that the law can be invoked to secure the execution of promises made in regard to the ventilation of the cabins passengers have to occupy on board ships. But unfortunately ignorance in regard to ventilation is so profound that it is not difficult to satisfy the public with a sham and cheap pretence of its benefits. Whether the ship in question, has or has not "a complete system of ventilation" is a matter on which we could not possibly express an opinion without first very carefully inspecting the ship herself. If she has, then she differs from most other ships afloat. Much as the question of ventilation has been neglected on shore, it is still more behind the exigencies of modern scientific requirements at sea. All the talk of fans in the case just tried is evidence of the prevailing ignorance. There seems to have been an impression that a fan has something to do with

ventilation when, instead of being held in a lady's hand, it is attached to an electric wire. On shore, as well as at sea, an electric fan is sometimes placed on the ceiling of a restaurant or of a railway dining car, and when it whirls round it produces a sensation of coolness. But what has this to do with ventilation? From the bacteriological point of view such a mechanical toy does not improve the situation. On the contrary, by propelling the air violently on the surrounding furniture, floor, and people, it lifts up dust and causes us to breathe a larger quantity of dirt and its accompanying microbes than we should have done if the air had been left still. Ventilation does not consist of churning up the air. Fresh air is not manufactured on the same principle as fresh butter Nor does ventilation consist of making a draught. Draughts destroy ventilation, because those who suffer from draughts. and they are many, proceed to close the ventilator at the first opportunity. The ideal ventilation consists of the introduction into and extraction of air from an inhabited place, house, assembly hall, theatre, railway carriage, saloon or cabin of a ship, in such a manner as to be imperceptible to the persons breathing that air. The text-books state that for such air to be pure the supply must amount to one cubic foot per second per adult. On the other hand, so that this air-supply should not cause a nuisance, it must not travel through the place ventilated at a greater speed than three feet per second. That is the standard, and short of that standard it is a mere delusion to talk of "a complete system of ventilation." If these rules have been successfully applied on board any ship we hope the owners of that ship will allow us to visit her and to describe how this most difficult problem has been solved.

HYPERSOMNIA.

IN an interesting paper published in the *Revue de Médecine* of Sept. 10th Dr. Albert Salmon of Florence discusses certain abnormalities of the function of sleep. He differentiates hypersomnia, which is an increase in normal sleep, from somnolence, apathy, and torpor, such as occur in cerebral tumours, in cerebral œdema, and in grave intoxications, and from the drowsiness which occurs in old people. He accepts in part the toxic theory of normal sleep—viz., that it results from the action of the products of metabolism produced during waking activity; but he denies that this toxic action is exerted upon the nerve cells and suggests that the toxic products are neutralised by certain glands with internal secretions, which form also specific hormones exerting a reparative influence upon the nerve structures. He believes that the pituitary body is specially closely related to the function of sleep, since hypersomnia is one of the most marked characteristics of affections of that structure. Hypersomnia depends generally upon an exaggerated action of the same causes which induce normal sleep, the chief being intoxications. Dr. Salmon maintains that mild intoxications lead to an increased function of the pituitary body or other glands concerned, while more profound degrees of intoxication may lead to actual poisoning of the nerve cells, and eventually to insomnia. Hypersomnia occurs in mild degrees of insufficiency of the thyroid, and in association with defects in the functional activity of the genital glands. It also occurs in the slow intoxications of gastric, hepatic, intestinal, and renal origin, and sometimes in association with obesity and diabetes. Influenza is often accompanied by a considerable increase of sleep, which gives place during convalescence to deficient sleep or to insomnia. It also occurs in cerebral syphilis. In cerebral tumours, as in all cerebral lesions which lead to increased intracranial pressure, there is a condition of somnolence or torpor, but not a true hypersomnia. Tumours of the base, on the other hand, especially those involving the pituitary body or its neighbourhood, give rise to an actual hypersomnia. A similar exaggeration of the function of sleep occurs in mountain sickness, and so imperative may be the desire to sleep that the patients sleep against their will, even though they know that their sleep will predispose them to death. A similar exaggeration occurs in workers in compressed air, after insolation, and after epileptic seizures. In all these cases it is associated with cerebral congestion. Hypersomnia also occurs in connexion with certain diseases of the nose, especially with adenoid vegetations. This is explained by Dr. Salmon as being possibly due to over-activity of a gland in the posterior pharyngeal region having the anatomical characters of the pituitary body, which has been described by Civalleri. Its existence has been confirmed by Kilian, Erdheim, and other observers. A similar condition of hypersomnia is described in connexion with inflammation of the sphenoidal sinuses. In regard to the treatment of hypersomnia Dr. Salmon advises opotherapy in cases due to defects of the thyroid, pituitary, and other glands, attention to the diet in cases due to gastric, intestinal, hepatic, or renal defects, and surgical treatment in those due to nasal affections. Although some of his opinions are somewhat speculative in character, his observations are of considerable interest and should serve to direct attention to the disturbances of sleep other than insomnia, which have hitherto, perhaps, received less attention than their importance warrants.

THE LONDON MEDICAL EXHIBITION.

THE exhibits presented to view at the London Medical Exhibition, which was held this week in the Horticultural Hall, Vincent-square, Westminster, were of distinct interest to medical men, and each year shows an advance on the previous one in regard to the real medical character of the demonstration. Even many of the "side-lines" were of scientific interest, while the progress of pharmacology and therapeutics was abundantly illustrated at the various stalls of well-known distinguished firms and makers of fine pharmacological and therapeutic products. It was evident on all sides how earnestly the pharmacist is working for not only the chemical but also for the physiological standardisation of medicaments. Vaccines and the products of serum therapy were a feature, and there was also an interesting display of special foods, lighting and heating appliances, balneological appurtenances, and so forth. The exhibition has evidently become of genuine interest to the members of the profession, and judging from the increasing attendance of medical men and others connected with the healing art, the annual event must now be counted of importance, while it serves very well to refresh the memory with the rapid advances which pharmacy and pharmacology are making. The visitor will find it hard to go away without carrying off some information of value in his professional work.

FACTS AND PROBLEMS CONCERNING RABIES.

A USEFUL monograph on the subject of rabies has just been written by Dr. A. M. Stimson.[1] He points out that there are many points about the pathology of rabies that require elucidation. The Negri bodies appear to be specific for rabies, but the determination of their exact significance and their relations to somewhat similar bodies found in other diseases is still a problem and a most important one. Until these problems are settled our ideas concerning immunity must necessarily be vague. It is known, however, that artificial immunity can be conferred during the usual incubation period, and this knowledge has been of

[1] Bulletin No. 65, United States Public Health and Marine Hospital Service, Washington, D.C. (1910), pp. 90.

great service. The possibilities of antirabic serum have not been exhausted by trial. It deserves further investigation, but our present data do not warrant us to expect very much benefit from this source. The treatment of rabies by means of drugs has received but little attention within recent years, owing to the discouraging outcome of the earlier attempts at treatment. But the balance of evidence now suggests the protozoan nature of rabies, and in view of the fact that certain protozoan infections are amenable to cure by specific drugs this line of research now shows promise of yielding better results than was formerly the case, particularly as regards the action of certain drugs upon the parasite itself. Administration of drugs by the intraspinal method should not be neglected. It is desirable, further, that attempts should be made to improve upon the methods of immunising exposed persons in order to eliminate the small percentage of failures. Dr. Stimson points out that the eradication of rabies could be effected in other countries, as has been done in England, by preventing rabid dogs from biting other animals. The prevention of the disease rests entirely with the public and depends upon a single definite measure. Otherwise the patient work of "patching a bad job" and the slow searching out of better "patches" must continue, and more experimental animals must be sacrificed for the protection of human life. The bulletin contains chapters devoted to the literature and bibliography of rabies, its distribution, pathology, etiology, symptoms, diagnosis, and treatment, together with a section on immunity and suppressive measures.

MIGUEL BOMBARDA.

THE news that Professor Miguel Bombarda has been assassinated will come as a severe shock to the medical profession, but this loss will be more especially felt by those who had the good fortune to attend the Fifteenth International Congress of Medicine, which met at Lisbon in April, 1906. It will be remembered that Professor Bombarda was the general secretary of the Congress and that never before had a Congress been better organised. Describing the conclusion of the Congress and writing under the impression of the scene, our correspondent said: "As Dr. Bombarda and the President of the Congress stepped off the platform they were surrounded by numerous members eager to grasp their hands and to embrace them. Not a few, especially the Portuguese members, fell into each other's arms and indulged in many wild and excited manifestations of their joy at finding that the Congress had proved so complete a success. Loud were the shouts, the laughter, the cheers that accompanied the President and the general secretary as they struggled through the excited and grateful crowd from the hall to their private office. The Congress certainly ended joyfully. Everybody seemed pleased and happy." These few lines reflect the impression made at the time upon the members of the Congress, while medical journalists have intimate reason for regretting the loss of Professor Bombarda. Not only did he organise the International Medical Congress, but he also provided every facility for the meeting at Lisbon, two days before the Congress, of the General Assembly of the International Association of the Medical Press. He brought Councillor Abel d'Andrade, Director-General of Public Instruction, as representing the Portuguese Government, to inaugurate the meeting of the delegates of the medical press, and gave the press representatives the most cordial reception. The position he held in the medical profession lent him the necessary influence to organise with success such a great national effort as that of receiving worthily a large international scientific congress. In such matters, however, personal prestige does not suffice, it must be accompanied with the genius of organisation. This Professor Bombarda possessed to an exceptional degree, and the late King Carlos so well appreciated the fact that, at the close of the Congress, he conferred on its general secretary the broad lilac ribbon, the gold chain, and crimson cross of the Grand Cross of the Order of Santiago. Now an assassin, a madman it is said, has struck down one of the most sympathetic and distinguished members of the Portuguese medical profession. According to one account the aggressor was one of Professor Bombarda's former patients at the Rillafolles Hospital or Asylum, where he was the principal physician in charge, and the Professor's last act was to attempt to save his aggressor from injury at the hands of the attendants who came to rescue him. Others have seen in the crime great political significance.

THE EFFECT OF DIET ON THE RESISTANCE OF ANIMALS TO CERTAIN POISONS.

Dr. Reid Hunt has recently made a valuable contribution to our knowledge of the specific action of various foods, particularly of the effects of a restricted diet and of various diets upon the resistance of animals to certain poisons.[1] He points out that although the substitution of attention to diet for the use of drugs has led to highly successful results in the treatment of a number of diseases, notably those of the alimentary canal and diabetes mellitus, it can scarcely be said that even the theoretical basis for the choice of foods in health and disease has been laid. In other words, although there is a vast accumulation of accurate knowledge of foods from the dynamic and economic points of view, but little is known of their specific action. A number of clinical observations have already indicated that certain foods do possess a specific action. Thus certain cases of diabetes mellitus are much benefited by oatmeal, while beri-beri and pellagra are said to be closely associated and perhaps dependent upon the use of rice and maize. Dr. Hunt's earlier experiments showed some very striking alterations in the resistance of animals to certain poisons produced entirely by changes in diet, animals on certain diets being able to resist as much as 40 times the amount of certain poisons fatal to animals fed upon other diets. It seems possible that man is daily producing profound effects upon his resisting power to poisons and diseases, and the experiments so far made, although incomplete, may have value in suggesting new lines of research and new points of view for analysing some of the problems now vaguely referred to as "the resisting power of the individual," "constitution," "diathesis," and so forth. Dr. Hunt's recent work shows that a restricted diet increases the resistance of certain animals to acetonitrile. Guinea-pigs fed upon a limited diet excrete a smaller percentage of the cyanogen of acetonitrile as sulphocyanate than do those upon an unrestricted diet. Dextrose, oatmeal, liver, and kidney greatly increase the resistance of mice to acetonitrile, their effect being similar in this respect to the administration of thyroid glands. This effect is probably due in part to a specific action of the diet upon the thyroid gland and thus affords an illustration of how an internal secretion may be modified in a definite manner by diet. It was also found that diet may exert a marked effect upon the reaction of animals to iodine compounds. The experiments showed that it is possible to classify a number of foods as to whether they affect the organism of the mouse in the same way as thyroid or in the opposite way. Oatmeal, liver, kidney, dextrose, and certain kinds of wheat bread belong to the former class, and milk and eggs to the latter. It is probable that the human organism reacts in the same way, and it is suggestive that the great value of eggs and milk

[1] Bulletin No. 69, Hygienic Laboratory, United States Public Health and Marine Hospital Service, Washington, D.C., 1910, pp. 93.

in the treatment of exophthalmic goitre, and the advisability of eliminating sweets in this disease have already been demonstrated. These experiments are of interest in connexion with the efforts made by Ehrlich to find drugs having special affinities for certain organs—drugs which are neurotropic, lipotropic, thyreotropic, &c. Dr. Hunt's work suggests that it is possible by diet to modify organs so that they may more readily take up certain drugs. Several glands, notably the prostate, ovaries, and testes, have an effect upon the resistance of animals to poisons similar to, but much less marked than, that of the thyroid gland. The thymus, parathyroid, and suprarenals have either no effect or an effect opposite to that of the thyroid. The resistance of animals to certain poisons varies with the season, and in some cases seems to depend upon the seasonal variations of the thyroid.

MR. PLEWIS'S TASTE.

A Mr. Plewis, a member of the Medway board of guardians, at a meeting on August 23rd (according to the *Chatham, Rochester, and Gillingham News*), contributed to the discussion of the overcrowding of the Barming Lunatic Asylum the following vulgar remark: "I often wonder whether there would be so many cases over there but for the fees." Dr. Hugh Woods, the secretary of the London and Counties Medical Protection Society, thereupon addressed to the chairman of the board the following letter:—

31, Craven-street, Strand, London, W.C.,
27th August, 1910.

Dear Sir,—My attention has been called to newspaper reports, according to which a Mr. Plewis is credited with having suggested that lunatics were sent to the asylum by medical men in unsuitable cases for the sake of the fees.

This is grossly offensive, and I believe untrue and slanderous. May I therefore respectfully suggest that Mr. Plewis should be called on to substantiate or withdraw his odious charges with the same publicity as has been given to them by him. Yours faithfully,

HUGH WOODS.

The chairman does not seem to have pressed upon the unwilling Mr. Plewis the obligatory and proper course suggested to him by Dr. Woods, but rather to have complained that he himself was subjected to some annoyance "because people have spoken to him and expressed an opinion that their friends ought not to be in the asylum. For that reason he thought that Mr. Plewis should withdraw the statement to save any further annoyance." Mr. Plewis withdrew his statement, adding with complete bad taste "that so far as their own medical officer was concerned he believed he was above anything of the sort implied in the letter." If guardians are deprived of much of their power and discretion in a reformed Poor-law, they will have suffered largely for the manners of a few of their number.

ACTIVE LOBAR COLLAPSE OF THE LUNG.

WE publish in this week's issue of THE LANCET an interesting and suggestive paper by Dr. William Pasteur on Active Lobar Collapse of the Lung after Abdominal Operations. He gives details of five cases presenting a characteristic group of symptoms and physical signs which he interprets as due to an active deflation of large areas of a lung following on reflex inhibition of the movements of the diaphragm on that side. The symptoms in question are usually, but not invariably, sudden in their onset. They consist of dyspnœa, cyanosis, and pain. Cough, though often present, is not a marked feature in uncomplicated cases. Greenish expectoration occurs, but rusty sputum has not been observed. The physical signs are loss of movement on the affected side of the chest with exaggeration on the healthy side, and dulness at the base of the lung, with weak or absent breath sounds, or sometimes weak tubular breathing. A peculiar and notable sign is shifting of the heart's impulse towards the affected side. The symptoms, although grave, usually last for a brief period, and the affected lung shows evidence of returning function within a few days. The analogies presented by these clinical features with those of massive collapse of the lung occurring in association with respiratory paralysis in diphtheria and other conditions, which have been studied by Dr. Pasteur in his previous work upon active collapse of the lung, lead him to refer these cases to a similar explanation, and in view of the evidence he brings forward it is difficult to resist his conclusions. There can be little doubt, as he suggests, that cases of this character have in the past been referred to the category of post-anæsthetic pneumonia. His interesting observations should lead to a more careful study of the lung conditions which occur after operations and after anæsthetics. We cordially endorse his plea that physicians should be afforded an earlier opportunity of observing these cases by their surgical colleagues than is the case at present.

THE DRY SEPTEMBER.

SEVERAL of the Septembers of recent years have brought weather differing very considerably from the average. Some have been abnormally hot, and some exceptionally bright, but the month which has just elapsed has been chiefly remarkable for its dryness. The only thing worthy of note in its temperature was the absence of heat during the afternoons, when it was rare for the thermometer to rise to the ordinary figure for the time of year. As regards sunshine we have had many splendid days, and in a few scattered localities the total number of hours exceeded the average, but generally there was a deficit, amounting at some of the observing stations to about an hour per day. The records of the Meteorological Office prove that it is extremely seldom that a month gives less rain than the average over the whole of the kingdom, but during last month there was not only a great deficit throughout the entire country but the number of days on which rain was experienced was also very small. In England generally there was no single fall measuring as much as a tenth of an inch except in the eastern and south-eastern counties and in one or two districts in the midlands about the middle of the month. The driest regions were the southern and south-western counties of England and some parts of Wales. At Bournemouth and Bath the respective totals were 0·11 inch and 0·15 inch, and 28 days were quite rainless. At Weymouth there was only 0·15 inch, falling on three days, and at Pembroke 0·11 inch, falling on seven days. Other notable illustrations of the unusual lack of rain were afforded by Manchester, where rain fell on only four days and yielded no more than 0·18 inch, and at Buxton, where the aggregate was 0·24 inch against an average of 3·17 inches. In London the 0·55 inch was, with a single exception, the lowest September total recorded since the observations began in 1871. The exception occurred in 1898, when the month gave no more than 0·31 inch. September of 1907 was, however, very nearly as dry as last month, the fall being 0·58 inch divided between eight days.

THE SCOPE OF A PHARMACOPŒIA.

IN the *Bulletin of the American Pharmaceutical Association* for September Dr. S. Solis Cohen contributes a thoughtful article on the scope of a pharmacopœia. The modern school of pharmacologists advocates the exclusion of a large number of drugs the value of which has not been demonstrated by laboratory experiments. But Dr. Cohen points out that the pharmacopœia is not a work on therapeutics, and the description of a drug in its pages should not be taken as evidence that the therapeutic value of the drug has been definitely established. A drug should not be condemned because certain workers are unable to obtain satisfactory

results from its use. Dr. Cohen mentions cactus grandiflorus as an instance of a drug which has been pronounced to be pharmacologically inert by some writers as the result of experimental tests, while, on the other hand, another good authority maintains that it possesses high clinical value when carefully prepared and properly used in suitable cases. In deciding on the inclusion of a new drug or the exclusion of an old one a general consensus of opinion among practising physicians must be the criterion. It has been urged that when a drug is fairly well represented by an active constituent the latter should be retained to the exclusion of the crude drug and its galenical preparations. Complaint has also been made against the inclusion of too many remedies of one therapeutic class. Dr. Cohen holds the opinion that it would be unsafe for physicians to limit their official armamentarium. Thus, strophanthus and adonis should find a place equally with digitalis; opium, morphine, and codeine should all be officially recognised, and the useful salts of cinchona side by side with the drug itself. There are cases in which continued medication is necessary for a long period when it is desirable to vary that medication. In order to be of use to the whole profession it is permissible and even necessary to include in a pharmacopœia many drugs of similar action and many preparations of one drug. Active principles should not displace crude drugs and their galenical preparations, unless physicians in general agree that the active principle is the only necessary or desirable preparation.

Mr. Charters J. Symonds will deliver the opening address on "The Treatment of Chronic Abscess of Bone by Means of Metal Drains," illustrated by patients, preparations, and radiograms, at the Medical Society of London, on Monday, Oct. 10th, at 8 P.M. A discussion, to be opened by Sir W. Watson Cheyne and Mr. A. E. Barker, will follow.

THE first Hunterian Society's lecture will be delivered at the London Institution, Finsbury Circus, E.C., on Wednesday, Oct. 12th, at 8.30 P.M., by Dr. H. D. Rolleston, on "Acute Arthritis of Doubtful Origin."

THE Harveian Oration will be delivered by Dr. H. B. Donkin at the Royal College of Physicians of London, at 4 o'clock precisely, on Tuesday, Oct. 18th.

THE annual dinner of the London School of Tropical Medicine will be held on Friday, Oct. 14th, at the Hotel Savoy, under the presidency of Mr. James Cantlie.

PRESENTATIONS TO MEDICAL MEN.—On Sept. 26th Mr. J. H. Marsh, medical officer of health of Macclesfield, was the recipient of a silver-mounted walking-stick and leather letter case from the children of Prestbury, Lancashire. A short time ago a severe epidemic of scarlet fever passed through Prestbury, and under an arrangement between the rural sanitary authorities of Prestbury and the Macclesfield corporation the cases were removed for treatment to the borough isolation hospital at Macclesfield. So impressed were the children with the kind treatment which they received at the hospital under the direction of Mr. Marsh that on their return home they decided to show their love for their medical attendant by making him a presentation. To Mrs. Marsh they gave a handbag and a basket of flowers.—Dr. J. R. Kaye, county medical officer of health for the West Riding of Yorks, and honorary secretary and treasurer for the past 17 years of the Yorkshire branch of the Incorporated Society of Medical Officers of Health, was on Sept. 30th presented with a silver epergne for fruits and flowers by the members of the society. The presentation, which was in connexion with the silver wedding of Dr. Kaye, was made by Dr. J. S. Cameron (Leeds) at the County Hall, Wakefield.

EHRLICH-HATA "606."

BY FLEET-SURGEON W. E. HOME, R.N.

A NOTE by the Berlin correspondent of THE LANCET last July[1] gave an account of the historic meeting of the Berlin Medical Society on June 22nd, when Dr. Wechselmann and the others announced the wonderful results they had been obtaining with Ehrlich's "Hata preparation" in the treatment of syphilis. Being a naval surgeon I was deeply interested, and as I could get to Germany, and was, by the kindness of the Editor of THE LANCET, provided with an introduction to Dr. Wechselmann, I went to see him. He is the head of the division for skin diseases (which includes venereal diseases) in the great (3000 beds) Rudolph Virchow Hospital in Berlin. *Inter alia*, he has long been known for research work done on the protozoa. Before detailing what I managed to pick up about the astonishing effectiveness of this medicine, I think it will be well for the benefit of other general practitioners like myself, who learnt their pathology a good while ago and do not know how the Hata-preparation was discovered nor how it acts, to briefly abstract a paper on this subject by Professor Ehrlich. He gave me a copy when I was in Frankfort, and I hope he will forgive the use to which I put it. It is termed "The Chemotherapy of Infectious Diseases," and was read, I suppose, about August, 1909.[2]

Professor Ehrlich on the Exact Treatment of Infectious Diseases.

"There are two ways of treating disease, one by immunising the patient, immuno-therapy, the other by curing with drugs, chemotherapy. These methods are at certain important points the same; thus the production of antibodies is of the greatest value in each system; still, their differences are more important. Immuno-therapy concerns itself only with the antibodies, which owe their strongly marked specificity to their individual origins. These antibodies direct themselves exclusively against the bacteria and their poisons, to the protoplasm of the patient they do no harm; that is why immuno-therapy is the ideal, the perfect treatment. Without damage to the body it attacks the parasites only. Every sensible man will try to secure for his patient an immunity, active or passive, if immunity be attainable. But in the class of diseases caused by protozoa, malaria, tick fever, and the others, the desired production of antibodies does not occur. Their clinical course shows that this curative reaction of the organism is hindered by the nature of the parasites themselves, so we have to go on killing them with chemical substances, just as we have been doing in the past with quinine, mercury, iodides, and atoyxl. All such chemical substances are poisons; unlike the antibodies, they attack also the patient's organs and tissues and may do him harm even in the doses required to produce their therapeutic effect. Such considerations urged me to make the thorough and systematic examination of this department of therapeutics to which in the last few years I have devoted myself.

In ordinary chemistry the first principle is, *Corpora non agunt nisi soluta;* on the contrary, in chemotherapy, the first principle is, *Corpora non agunt nisi fixata.* That is to say, that unless a drug can combine with the bacteria it cannot kill them; such drugs are called parasitotropic, they attack the parasites. But being poisonous, they also attack the organs of the body, and so are termed organotropic The practical utility of the drug depends on the relation which these activities bear to one another. The organotropic effect should be low, the parasitotropic high, if the drug is to be of any use to us.

The next thing was to find out how the drugs became fixed to the cells, and the most significant ideas came from the study of drug-resisting strains of trypanosomata. Thousands of drugs had been tried against trypanosomes, and those that had curative results fell into three groups:—1. Arsenic group, arsenious acid, then atoxyl, and later the other substitution products of arsenobenzol—viz., arsacetin, and arsenophenylglycol. 2. Azo-stains, trypan red, blue, and violet. 3. Basic stains, parafuchsin, methyl violet, pyronin.

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[1] THE LANCET, July 9th, 1910, p. 136.

[2] Chemotherapie von Infektionskrankheiten v. Professor Ehrlich, Zeitschrift für Aertzliche Fortbildung, No. 23, 1909. Jena, Fischer.

Strains of trypanosomes can be grown to resist either of these groups. When I examined this more exactly (and it was convenient to work with a strain resistant to atoxyl and arsacetin) I began to see there must be some special arrangements with affinity for particular chemical groups to fix them to the cell. These special arrangements, these bonds, I name chemoceptors. The chemoceptors of the parasite which fix arsenic, and which I call arsenoceptors, unite trivalent arsenic (arsenic as in arsenious acid) to the cell. They do not disappear from an arsenic resisting strain, but only become chemically altered so as to have less affinity for arsenic. And now the arsenic must be present in relatively considerable excess before it can unite with the parasites in such quantity as ultimately to destroy them. Under the microscope these drugs are seen to affect the parasites, causing paralyses, slower movements, or swelling, and in testing the drugs we have to employ them in very various concentrations, and we must also try them on infected animals. In the laboratory examination of each drug there are four possible events.

1. No effect *in vitro*, none *in vivo*. Then neither the parasite nor the body has chemoceptors with affinity for this drug, which is therefore neither parasitotropic nor organotropic.

2. Marked effect *in vitro*, none or little *in vivo*. (This is the action of sublimate on anthrax.) Methylene blue 1/6,000,000 is effective against the spirillum of relapsing fever *in vitro;* used 500 times as strong it produces no effect *in vivo* (Hata). This substance is markedly parasitotropic, but its organotropy [its affinity for the body cells] is so marked that *in vivo* none gets away to attack the parasites.

3. This is called the indirect effect. Nothing *in vitro*, good effect *in vivo*. (*a*) The drug inactive outside is within the body changed into a very active substance. Thus atoxyl, containing five-valent arsenic as arsenic acid, is in the body reduced to para-amido-phenylarsenious acid, trivalent, and that is readily fixed by the arsenoceptors. (*b*) The drug may have no evident effect on the life of the parasite, but may quite prevent its reproduction by some action on its chromatic substance. This race-sterilisation is of the utmost importance when it is with short-lived organisms like trypanosomes we are dealing.

4. Marked effect *in vitro*, even greater *in vivo*. Those parasites killed early, just after the injection, when dead awake an active formation of antibodies, which assist the action of the drug.

Four kinds of effect are also to be noted in the therapeutic results produced by these drugs on infected animals:—

1. No influence—no parasitotropy or organotropy markedly in excess.

2. Exacerbation of the disease. The substance is very little parasitotropic; indeed, as is usual in small doses, it stimulates the parasites. This occurs with methylene blue, not with arsenic. This result is often met by people working at cancer growth. It is called a contrary effect or Hata's phenomenon.

3. Therapia sterilisans convergens. This is a very common effect, that at which we aim. The parasites gradually decrease in geometrical progression.

4. Therapia sterilisans divergens (Browning's phenomenon). The parasites first increase before finally they disappear.

Now we return to our pharmacology and to the arsenic-resisting strains of trypanosomes. A race of trypanosomes resistant to atoxyl was not affected by the ordinary arseno-benzol derivatives, but we found arseno-phenylglycin which overcame their resistance, and in time we immunised them against this too. We had now two strains immune to arsenic, but each proved still susceptible to arsenobenzol derivatives, provided these had acetic acid in their molecules. So, besides their arsenoceptors, trypanosomes had aceticoceptors, by whose help they could be fixed to more arsenic and so destroyed. The drug was then attached to the trypanosome, not by one, but by several of its receptors (like a butterfly to a setting board by papers), and so I learned there were primary and secondary haptophores. The aceticoceptor is the primary haptophore which fixes the arsenic to the cell. If, then, we wish to use the arsenic group against a class of parasites by the methods of chemotherapy we can only succeed if we find the special suitable attachment, associate therewith the effective chemical group, and in this way make the specific attachment possible.

For the trypanosomata this is achieved through the aceticoceptors. Now the iodide of arsenobenzol which Bertheim prepared has no effect on trypanosomes in mice, but, as Rohl and Hata have shown, it kills spirilla in mice. Iodising the arsenobenzol nucleus has so reduced its power of fixing itself to trypanosomes that it reaches them in too small quantity to be deadly. But as for spirilla, the iodine enables the arsenobenzol to attach itself to them doubly, with increased effect. And so anyone who busies himself with chemotherapy must endeavour to find a chemoceptor which shall enable him to force his drug on the parasite concerned.

These advances should lead to great results. Already Hata, Kitasato's sterling pupil, has succeeded after long endeavour in finding amongst a great number of substances two preparations of Dr. Bertheim, No. 599 and No. 606, which are specially fatal to spirilla, and has cured mice of relapsing fever, and fowls of fowl-spirillosis. Rabbit syphilis also gives encouraging results. A large chancre full of spirilla yielded none the day after injection of the animal, and in two or three weeks was well, only a slight scar remaining.

So far I have dealt only with the first stage of the research, which decides whether a substance has therapeutic value and how it may be safely administered. Next, with great expense of time and material, from amongst all these we must choose the best. We may not be able to use a drug though it can cure; it may be too dangerous. The efficient dose may be 8/10ths or 9/10ths of the poisonous dose; 1/4th is as near as we dare go. [The fraction for "606" in rabbit syphilis is 1/7th to 1/10th. In man about 1/12th.—Trans.]

I have now completed my account of the labours of the school of chemical therapy. We had set ourselves exclusively to devise substances which we have sifted through innumerable experiments on animals. People feared we would flood the world with new remedies, but, after all, we have only recommended four—arsacetin, arsenophenylglycin, tryparosan, and the new "606," which Hata investigated.

Now that the work of the laboratory students is ended, a new and at least as difficult a study begins—the introduction of the new remedy into medical practice. Our first difficulty is that in man we cannot directly determine the maximum dose, but only learn it by slow and patient observation. Then men have idiosyncrasies towards about half the drugs we already know. From these animals are free. In relation to these strange and powerful drugs these susceptibilities of men may well be heightened. So the new drugs must only at first be used in well-managed hospitals and under the most patient, thorough, and continuous observation: with the person kept in bed, and all his organs and systems carefully examined. We must exclude all doubtful cases, people of extreme age, people with advanced disease, positive or doubtful history of previous arsenical treatment, special susceptibility to arsenic (which should be tested), retinal changes, and so on. Only after a great number of cases have been so scrutinised and reported on can the remedy be put at the disposal of the profession."

Clinical Employment of the Remedy.

The drug was first tested on man at Uchtspringe, under the direction of Dr. Alt, by two of his assistants, who in October or November, 1909, had 0·1 gramme (1½ grains) injected into themselves. The drug has been used continually ever since in increasing quantity and without disaster. This is largely due to Professor Ehrlich's preliminary work. Dr. Alt said in Berlin, on June 22nd, that the foundation work done by Ehrlich went so deep down there was nothing more required but care and to transfer to man with forethought what was known of its effects on animals. I could not hear in Germany of any disappointments. I was told in England—the story came from Aix—that the new preparation was so dangerous that its use had been forbidden in Germany. This was quite untrue, there never was such an order; there never was need for such an order. Every case is most exhaustively examined before treatment, special attention being given to the conditions of heart, urine, and retinæ. Retinitis and albuminuria are not absolute contra-indications. That depends on etiology. "606" has cured them when due to syphilis. The blood must be examined by the Wassermann reaction so that recovery may be gauged.[3] Every precaution is taken that no unwished result may occur, or that, occurring, it may give guidance so we may prevent it in future. Unwished results have, in fact, not occurred, so careful and complete were the rules Professor Ehrlich drew up for the first transfer

[3] The practitioner may do the Wassermann reaction with von Dungern's bedside apparatus (Merck).

to men of the experience gained by experiments with "606" on many kinds of animals. Besides, he trusted the remedy at first only to most expert and loyal physicians. It is urged that some new-born children succumbed after treatment. True, but their death is not the important thing to remember. Eight newborn children were in the hospital (Wechselmann), all obviously dying from pemphigus neonatorum. Three were treated by the old methods and all died, as had been forecast. With great anxiety, for the drug was new, the other five were injected. Of them, three indeed did die, but the astonishing, outstanding, illuminating fact is that the other two of these doomed infants, injected with the new remedy, contrary to any possible chance there would have been for them three months before, did recover.

As I saw the injection done it was prepared a little differently from that so well described by Mr. J. E. R. McDonagh.[4] But the technique varies between Frankfort and Berlin. I saw it done thus. In the first place everything is sterilised. The pale yellow "606" is shaken out of its glass capsule into a sterilised agate mortar and there rubbed up with some 10 to 15 minims of a 15 per cent. solution of caustic soda till it is all dissolved; a drop of phenolphthalein indicator is added, and next glacial acetic acid to neutralisation. This brings down a bright yellow fine precipitate, and all the contents of the mortar are washed into a test-tube which is centrifuged, the supernatant liquid is poured off, the precipitate mixed with 5 c.c. (℥i.) or so of normal saline solution and injected in suspension with a sterile syringe. The needle must have a large bore and must be particularly carefully wiped clean with sterile muslin before being used, to diminish the risk of skin necrosis. Women get 0·5 gramme or less, men 0·6 gramme or more. Women are now injected usually under the right mamma; men about the scapular angle. I should think the anterior injection more comfortable, as the patient does not want to lie on the place. The skin, clean already, is painted just before the injection with, I suppose from the colour, liquor iodi fortis half strength. The injection is subcutaneous, but intravenous injection is being considered more effective. The whole dose is able to attack the spirilla at once without the delay of waiting for absorption. The great fear is that the spirilla may, if slowly attacked, develop immunity. Hata found in rabbits that a fourth injection produced no additional effect. Further, intravenous injection causes no pain. The subcutaneous injection causes no trouble worth mentioning at the time; a few hours later pain and swelling begin, and quite often there may be an unimportant rise of temperature of 2° F. for a couple of days. Sometimes there is a necrosis, but that is rare. It is unimportant; I saw the positions of many injections with only two necroses, never an ulcer. The tendency is to increase the dose. If it be too small the Jarisch-Herxheimer reaction is noted—i.e., the exanthem deepens or brightens in colour before it disappears. If the roseola develops in two or three days that matters not, but if it appears a fortnight after injection the dose must be repeated. It is difficult for me, who was merely "walking the hospitals," to report on cases; besides, so many have been completely published it is almost unnecessary.

Case shown. "This man had a chancre here, two days ago he was injected. You see the chancre has healed." When a chancre occurs on the skin, if possible I, in my practice, always excise it, and, with luck, it heals by first intention. This saves the patient and his attendants trouble and time; but here is the sore healed, the glands are reduced and no roseola will follow, all by an injection of 9 grains of "606," a vastly superior therapeusis.

I saw an infant about August 23rd that to my inexperienced eye appeared ordinarily healthy. It had been dying a month before from congenital syphilis. July 20th, 0·02 gramme was injected. July 21st, Wassermann positive. August 3rd, repeated 0·02 gramme. August 18th, Wassermann negative. This treatment has only been in use ten months, but relapses do not seem to occur. We hope it kills all the spirilla, but malarial parasites do seem sometimes to hide in the spleen and escape quinine. It may be so here, we cannot know yet.

A woman was injected during pregnancy and her child showed no sign of syphilitic infection. Perhaps we shall be be able to do without the two years' quarantine before marriage. A man walked in. "This man was dying last April with ulcers of tonsils, uvula, and legs. He was injected and began at once to recover." Probably he got too small a dose as he was so weak, for he had been injected since, in June and August. He had lost nearly all the soft palate, but everything was healed up and he very grateful. So was a woman who appeared another day, having been injected five weeks before. Dr. Wechselmann demonstrated her chest now free of rash, though then quite covered. "Yes," she burst in, "blue-red spots all over it." She was delightedly grateful to her healer. Another case had beside him a painted model of his lesion as it was before his injection ten days ago. There was an ulcer on the palm of the left hand of the size of a crown-piece at the base of the second and third fingers, going deep at the edges. Now all was smooth and on one level, the scar being much the same colour it had been on the cast. Three days later I saw him again. The colour of the scar had faded; it was now shading off into the surrounding epidermis. A remarkable recovery in a fortnight.

A very bad lupus case was shown, injected four days previously; the crusts had now all fallen off without other treatment, and this in four days! Ulcers, too, due to breaking-down of gummata were unusually clean and flat. Their repair is said to be accelerated astonishingly. Local treatment consisted only of acetate of alumina compresses.

Staff-Surgeon Dr. Gennerich of the German Navy showed me two interesting recoveries from paralysis in his wards in the Naval Hospital at Kiel. One man with complete paralysis of the left side of the head and right side of the body, from gumma in the brain, injected yesterday could to-day move his leg and foot and also slightly his hand and fingers. Staff-Surgeon Gennerich had treated 30 cases, all with satisfactory results and with no undesirable complications. He finds larger doses up to 0·7 and 0·75 gramme suitable for young healthy men (Professor Ehrlich subsequently approved this). He also took the greatest trouble in the kindest way to make me thoroughly understand the principles and practice of "606" administration, for which I am very grateful.[5]

In Professor Ehrlich's waiting-room at Frankfort I found a dozen other doctors from Brazil, Holland, Belgium, and elsewhere. (In Dr. Wechselmann's clinique I had met others from Russia, Austria, and Hungary.) Professor Ehrlich's janitor told me that they had been besieged by people wanting the new remedy. I only noted one English name in the visitors' book, that of an Oxford professor. Some were much vexed when they found that there was none of the preparation to be had at the moment. I was the last to see the Professor, and only after an hour's wait. What a tax on his time! He allowed that the discovery of the new remedy was a direct outcome of the side-chain theory of immunity; confirmed what Dr. Gennerich had told me, that the amido group in the "606" molecule took, in curing, the place of complement, which was interesting; recommended intravenous injection; kindly gave me copies of some valuable papers by Hata and himself; and said that supplies at present were scanty, but it was hoped that by November the Höchst Farbwerke would be able to supply the popular demand for the Hata preparation. I then bowed myself out.

I see that it has been used in the Hamburg Tropical Disease School in the treatment of that other obstinate protozoal infection malarial fever from Mamory, in South America, by Dr. Nocht and Dr. Werner.[6] To each of five cases they gave 4½ grains, a very small dose. One case appeared to be cured; in three cases the parasites and fever disappeared for the time, but returned; while in the fifth case the number of the parasites only decreased. A speaker at the Berlin Medical Society on June 22nd stated that the drug had great effect in the healing of wounds. That I have not seen again stated since. Everyone who has any of the remedy wants it for his worst cases of syphilis, especially for those which resist mercury and iodides. It is thought too valuable for that purpose to be employed out of curiosity for anything else yet.

This seeking information about the new preparation was a memorable experience. And again it is a great pleasure to me to acknowledge the courtesy, the warmth of the welcome one gets from our German colleagues. The origin of Ehrlich-Hata "606" is a striking story of a research definitely planned to find a drug which should kill protozoal parasites without injuring their human host. That Ehrlich directed

[4] THE LANCET, Sept. 3rd, 1910, p. 711.

[5] His paper appeared in Berliner Klinische Wochenschrift, No. 38, Sept. 12th, 1910.

[6] Deutsche Medizinische Wochenschrift, 1910, No. 34.

his fellow-workers' efforts successfully in this task demands praise; that he then got it safely introduced into clinical medicine without disasters arousing suspicion demands our gratitude as well as wonder.

MEDICINE AND THE LAW.

Deaths after Operations and the Jurisdiction of the Coroner.

A QUESTION which may be described as being of some antiquity, but one not often discussed, was raised recently at an inquest held at the Royal Infirmary, Preston, upon the dead body of a man who had died after an operation had been performed upon him.[1] The evidence of the house surgeon, who had been for three years on the staff of the infirmary, was to the effect that the deceased was admitted suffering from intestinal obstruction; that an operation, if successfully performed, offered the only means possible by which life might be saved; that one was performed but did not save life, the man dying so soon after the operation that in the witness's opinion the death must be described as having been "accelerated" by it. Without the operation the man would have only survived for a few hours. Upon the replies thus given apparently the question was raised as to how far deaths following operations were, or should be, reported to the coroner from the infirmary, and the house surgeon very reasonably pointed out that if an inquest were to be held whenever a patient's death ensued within a few hours of an operation surgeons would naturally be deterred sometimes from performing operations which might, or might not, save life. The coroner and jury unfortunately seem to have resented a statement which for some reason they regarded as a threat, and the reason for which the coroner professed himself unable to understand, but the house surgeon pointed out the probable ill effects of publicity in such a case in causing the public to blame the surgeon for his lack of success and to regard operations with alarm. The coroner, in spite of this, expressed his own opinion that it was compulsory upon him to hold inquests upon persons dying in the circumstances described, owing to their deaths being "unnatural" within the meaning of the Coroners Act, 1887. In this we believe him to have been mistaken, and he would hardly have expressed such an opinion with confidence if he had considered some of the recent pronouncements upon a subject which, as we have said, is by no means a new one. We may point, for example, to the first or general report of the recent Departmental Committee upon the law relating to coroners, in paragraph 16 of which the question of deaths under anæsthetics is dealt with briefly. A recommendation is made that in such cases the death should be reported, but the coroner after inquiry should be enabled to dispense with an inquest when satisfied that due care and skill have been used. The committee does not seem to have thought it necessary to refer in its report to cases of death following recovery from the anæsthetic but accelerated, or suspected of being accelerated, by the operation itself. As to this the committee had before it the evidence of Mr. J. Brooke Little, a barrister of 30 years' standing, and a high authority upon the subject of coroners' law, upon which he was called to speak as an expert. He had it put to him definitely by Sir Horatio Shephard that under the words of the Coroners Act, 1887, a man who dies under an operation dies a violent death. The Act, as all will remember, refers to "either a violent or an unnatural death," but the word violent sufficiently brought the section to the mind of Mr. Brooke Little, who made no suggestion whatever that there was a legal obligation to inform the coroner on such occasions. His answer was, "I do not think that comes within the meaning of a violent death. The usual death certificate of a doctor is 'death from shock.' I think that is the general formula when an operation is being done and the patient dies," and he added as an example when asked whether it was not the unnatural form of stimulus which produced the shock, "You give the symptom, appendicitis, and the immediate cause of death you give as syncope from shock or heart failure, so that it would not be a violent death." The question relating to deaths under anæsthetics, as distinct from those accelerated by the operation, frequently recurred in the evidence of other witnesses before the committee, and we may refer to the opinion expressed by one of these, Mr. R. Henslowe Wellington, who spoke of the undesirable tendency of reports of inquests to cause alarm in the minds of the public as a reason for not holding them when patients die under an anæsthetic. This gentleman, whose experience as a coroner and writer upon coroners' law is considerable, had no such confidence as that of his colleague at Preston, even where deaths under anæsthetics were concerned. He gave it as his opinion that the law required an inquest, but he said that there was a difference of opinion among coroners on the subject, some holding inquests whenever such deaths were reported to them, and others not doing so if satisfied by inquiry that all care had been exercised. We have, however, cited enough authority to show that the coroner at Preston is almost certainly wrong in an interpretation of the law which differs from that of the great majority of his colleagues. The matter would have been settled long ago if coroners were liable to have their decisions on points of law submitted to the consideration of the High Court, and it might have desirable results if this were in some way to be provided for by statute. As it is, we do not understand that the Bill for amending the law relating to coroners introduced by Sir William Collins in the House of Commons touches the topic which we have discussed above. Clause 9 is designed to enable a coroner to dispense with an inquest if, after the inquiry for which the Bill affords facilities, "he is satisfied that the deceased died a natural death," but this would not affect the decision of a coroner who considered that all deaths accelerated by surgical operations were unnatural.

[1] THE LANCET, Oct. 1st, 1910, p. 1046.

Another Fatal Case of "Christian Science Healing."

At Urmston, near Manchester, recently an inquest was held upon the body of Walter Statham, a cashier, 53 years of age, who in May of the present year had been attended by a medical practitioner owing to the condition of one of his legs, and at that time had been willing to seek the advice of a surgeon. The surgeon in consultation, with the assent of Mr. Statham's medical adviser, had recommended amputation as necessary, but to this the patient refused to submit and subsequently discontinued all treatment and had recourse to "Christian Science" until his death, which took place on Sept. 25th. A "healer," William Pitfield by name, undertook the case for a consideration of 10*s.* per week for three visits, at which he offered prayers, accompanied by readings from "Christian Science" text-books and from the Bible. This gentleman declined at the inquest to admit that his "treatment" had been a failure, and was told by the foreman of the jury that he had juggled away the man's life. The coroner, however, pointed out that although if the deceased had been a child a verdict of manslaughter might have been returned against someone, as he was of full age he must be held to have been responsible for his own actions, and a verdict of "Death from septic poisoning" was returned.

The Case of an Unregistered Woman Practising as a Midwife at Leeds.

Three cases at Leeds, heard in the courts upon two consecutive days, recently called attention to the practice as a midwife of a woman named Johnson described as the wife of a miner. An inquest was held on Sept. 22nd on the ground that a child had been buried upon a medical certificate that it was still-born, whereas in fact it had been born alive and had died about three hours afterwards. Johnson had apparently attended the mother when she was confined, and had recommended the father to send for a medical practitioner as the child was "right bad." A medical student at the Leeds Infirmary proceeded to the house on the summons being received at the infirmary, but the child died a few minutes after his arrival in spite of his efforts to restore respiration. The resident obstetric officer at the infirmary, who was informed by the student that the child had given two gasps after his arrival, and that his attempt to induce artificial respiration had failed, after inspecting the body gave the certificate upon which the child was buried, and which stated that it was not born alive. This, he stated in evidence, was because it was prematurely born and could not have lived. In this case the jury returned a verdict of "Death from natural causes," and the coroner referred to the possibility of further inquiry being made with which the jury was not concerned. In that event, no doubt, an explanation of the giving of a certificate in the circumstances described or of

facts not explained at the inquest would be forthcoming. On the day following the inquest referred to a woman, the daughter of Mrs. Johnson, was summoned for registering the birth of her child as having taken place at an address where, in fact, it had not been born. The explanation given by the defendant was that the wrong address had been registered because she did not want to have the child vaccinated, but it was pointed out on behalf of the prosecution that she was delivered at the house of her mother, Mrs. Johnson, and that probably she gave the wrong address in order to avoid calling attention to the illegal practice of this person as a midwife. She was fined £1, to be paid in weekly instalments of 2*s.* 6*d.* In the third case referred to Mrs. Johnson was herself the defendant, and was convicted of habitually practising as a midwife for gain. It was stated that she had practised before the passing of the Midwives Act but had not been able to obtain registration under it, and that since April 1st of the present year, when all practice by unregistered women became illegal, she had continued to attend confinements. That she had done this on two occasions was proved, her defence being that she acted as a midwife without charge and was paid for nursing only. A fine of £5 was imposed, but the order was made that it was not to be enforced if the defendant desisted from infringing the law.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Oct. 6th, 1832.

WESTMINSTER HOSPITAL.

THE FIRST LIGATION OF THE CAROTID ARTERY EVER PERFORMED IN THIS COUNTRY.

JULY 14, 1832. Mr. Lynn attended with his usual punctuality, but there were no operations to perform, and he made a few conversational observations on the excision of tumours. "Forty years ago I was in the habit of frequently cutting out tumours, especially on the side of the face and neck, and the results were generally fortunate. I have often had some nice and difficult dissection on these occasions, and have had as many as four nerves at a time supported on the back of the fingers of my operating hand. My good fortune excited the emulation of my colleague Mr. Morell, who was a 'good creature,' but not the most brilliant of surgeons; and he said to me one day, 'Lynn, you are always cutting out tumours, why can't I do the same?' Quoth I, 'There is no reason in the world why you shouldn't.' 'Well then,' he said, 'I have an elderly woman who has diseased parotid gland, and I shall cut it out.' I replied, 'that I had never done that, and I did not think it an eligible case for a commencement especially.' However, he would have his own way, and he set about the operation very manfully, and did it very well; but I do not believe he actually cut out the entire gland, neither do I think it has ever been done completely by any one, before or since that time; and I told Sir Astley Cooper so, the other night at the College, when he was relating some of his cases. Well, to return to poor Morell, *he cut* out either the whole or part of the parotid gland, and put ligatures upon several vessels, but the ligatures slipped away, and hemorrhage occurred several times. As the poor woman was much exhausted by this loss of blood, Morell endeavoured to pucker up the wound, and involved it in a general ligature, but all his expedients proved vain, and the patient continued to lose blood almost every day for a fortnight. The fact is, he had cut off the arteries so near their main trunk, that he had left no room for a proper ligature. Foiled in all his attempts, Morell at last came to me, and asked what he should do. I answered, that the woman had lost so much blood, and was so much reduced in consequence, that it was doubtful if anything could save her.

"If the hemorrhage were not arrested, she must inevitably die in a day or two. Local ligatures were perfectly inapplicable. Cruickshank had lately been tying the carotids of dogs, and I saw no reason why the same operation should not be performed with impunity in the human subject, and if he liked, I would undertake to tie the primitive carotid. I accordingly cut down upon this artery just below its bifurcation by the side of the larynx, and found no difficulty in penetrating through the skin, platysma myoides, fascia, and sheath, and in ultimately tying the vessel with a single ligature. The hemorrhage instantly ceased, and no unusual effect was observed in the patient. She lived a fortnight after the operation, and died evidently of the debility induced by the hemorrhage and her previous sufferings. The case was fatal, but I felt satisfied the principle of the operation was established. This I believe to be the first instance of ligature of the carotid, and it certainly occurred long previous to any case that is recorded."

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

Belfast.—The following summary gives the vital statistics for 1909: the birth-rate 28·2 per 1000, the death-rate 18·2 per 1000, the infantile mortality 139 per 1000 births, the zymotic death-rate (seven principal zymotic diseases) 1·3 per 1000, and the phthisis death-rate 2·3 per 1000. There is a reduction of 1·3 per 1000 in the general death-rate, the zymotic death-rate is the lowest on record, and the number of cases of infectious diseases notified was 2·5 per 1000, while in the preceding year it was 3·6, and the average for the 10 years 1899–1908 was 8·3 per 1000 of the population. There was a reduction in the number of cases notified of enteric fever, of simple continued fever, of membranous croup, erysipelas, and of diphtheria, and a slight increase in the cases of scarlet fever. The boundaries of registrars' districts as given are of no use; what is required is a map of Belfast showing them. 590 fewer births took place in Belfast in 1909 than in 1908. The birth-rate in Belfast has been on the decline for several years; the rate for the whole city was 28·2 per 1000 in 1909, as compared with 29·7 in 1908, whilst the average rate for the 10 years ended 1908 was 31·1, but the rate for 1909 shows the greatest reduction that has yet occurred in any given year as compared with the previous one, the rate being 1·5 less than in the preceding year. The number of deaths from all causes in 1909 was 7028, a decrease of 495 as compared with the previous year, when they numbered 7523. Of the total deaths, 2646 were due to diseases of the respiratory organs (including pneumonia and phthisis)—that is, 705 pneumonia, 811 phthisis, and 1130 diseases of the respiratory organs exclusive of phthisis and pneumonia. We think this huge group (1130) should be more differentiated. Malignant disease caused 298 deaths; there were 371 from tuberculous diseases (not phthisis), 244 from diarrhœa, and 213 from whooping-cough. With reference to puerperal fever, 23 cases were notified with 10 deaths, and of the 23 notified 13 were attended by "handy women," and in only four instances medical supervision was exercised over them at the outset, and six deaths occurred; while only two deaths occurred out of all the cases attended by qualified practitioners. Mr. H. W. Bailie says: "It is unfortunate that there are no means of putting an end to this unqualified practice, for it is quite reasonable to believe that in addition to the deaths which occur in connexion therewith many accidents must occur which lay the foundation of other ills which follow." The number of deaths from whooping-cough (213) were 76 in excess of the previous year, and the average for the preceding five years was 168 deaths per year. It is surely time such a death-causing malady was made notifiable. 811 deaths arose from pulmonary tuberculosis, that is, 1 in every 476 of the population died from this disease in Belfast in 1909, while in 1908 it was 1 in every 432. The rate from this malady was 2·1 per 1000, while it was 2·3 per 1000 in 1908. The average annual rate of mortality for the ten years 1899–1908 from pulmonary tuberculosis was 2·9 per 1000 of the population. During the first six years of this decade no decrease occurred, but during the four years 1905–1908 there was a decrease of 0·4 in 1905 and 0·2 in each of the following three years, and the year under consideration also shows a decrease of 0·2 per 1000 of the population. It is satisfactory to note a decrease in the death-rate from pulmonary tuberculosis, but the rate for 1909 (which is 2·1 per 1000) in Belfast is far too high when compared with similar sized English and Scotch towns. During the year 1909 1510

children died under one year, giving an infantile mortality of 139 per 1000, as compared with 147 in 1908. Among the 76 great towns of England and Wales there are only 10 with a higher infantile mortality than Belfast. Mr. Bailie attributes the greatest barrier to improvement to carelessness and neglect on the part of a certain class of mothers. It is satisfactory to find out that there has been a great increase in the number of bacteriological examinations during 1909. Reference has already been made in our columns to the part of the report dealing with alleged "sweating" in the linen industry. It is most satisfactory to find that the report shows in every respect a great improvement in admittedly bad conditions, and indicates that an attempt is now really being made to deal effectively with the public health of the city of Belfast.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 77 of the largest English towns 7733 births and 4338 deaths were registered during the week ending Oct. 1st. The annual rate of mortality in these towns, which had been equal to 11·7, 12·6, and 13·0 per 1000 in the three preceding weeks, further rose last week to 13·4. During the 13 weeks of last quarter the death-rate in these towns averaged 11·8, corresponding with the rate that prevailed in the 76 largest towns in the same period of last year. In London the death-rate during last quarter, calculated on the probably over-estimated population, did not exceed 11·0 per 1000. The lowest reported annual death-rates in these 77 towns last week were 5·3 in Hornsey, 5·5 in King's Norton, 5·8 in Handsworth, and 6·3 in Bournemouth; the rates in the other towns ranged upwards to 20·4 in Dewsbury, 20·5 in Wigan and in Middlesbrough, 20·7 in Rochdale, and 21·6 in Newport (Mon.). In London the reported death-rate last week did not exceed 13·0 per 1000. The 4338 deaths registered in the 77 towns last week showed a further increase of 104 upon the numbers returned in the three preceding weeks, and included 536 which were referred to the principal epidemic diseases, against numbers ranging from 720 to 590 in the five previous weeks; of these 536 deaths, 364 resulted from diarrhœa, 43 from whooping-cough, 37 from enteric fever, 35 from diphtheria, 32 from measles, and 25 from scarlet fever, but not one from small-pox. The mean annual rate of mortality from these diseases in the 77 towns last week was 1·6 per 1000, against rates ranging from 2·2 to 1·8 in the five preceding weeks. No death from any of these epidemic diseases was registered last week in Norwich, Halifax, York, or in seven other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·8 in St. Helens, 4·0 in Wigan, 4·4 in Bury, and 4·5 in Rhondda. The deaths attributed to diarrhœa in the 77 towns, which in the four preceding weeks had declined from 527 to 400, further fell last week to 364; in the several towns, however, they caused annual rates ranging upwards to 2·9 in Plymouth and in Middlesbrough, 3·5 in Bury, and 3·8 in Rhondda. The 43 fatal cases of whooping-cough showed a further decline, and were fewer than in any previous week of this year; the highest rate from this disease during last week was 1·6 in Rotherham. The deaths referred to enteric fever, however, which had been 12, 22, and 25 in the three previous weeks, further rose last week to 37, and considerably exceeded the number in any previous week of this year; they included 2 each in Wigan, Grimsby, and Dewsbury. The 35 fatal cases of diphtheria also showed a further increase upon recent weekly numbers, and included 12 in London and its suburban districts, 3 in Liverpool and Bootle, 3 in Manchester, and 2 in Newcastle-on-Tyne. The 32 deaths from measles were fewer than in any previous week of this year; and the 25 fatal cases of scarlet fever showed a decline of 2 from the number in the previous week. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had increased in the six preceding weeks from 1423 to 1560, had further risen to 1653 on Saturday last; 249 new cases of this disease were admitted to these hospitals during the week, against 183, 201, and 210 in the three preceding weeks. The 1215 deaths from all causes in London last week included 178 which were referred to pneumonia and other diseases of the respiratory system, showing an increase of 55 upon the number returned in the previous week, and exceeding by 33 the corrected average number in the corresponding week of the five years 1905–09. The causes of 35, or 0·8 per cent., of the deaths registered in the 77 towns during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, and in 50 other smaller towns; the 35 uncertified causes of death in the 77 towns included 6 in Liverpool, 5 in Gateshead, 4 in Birmingham, and 2 each in Norwich, Stoke-on-Trent, Sheffield, and Bootle.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 763 births and 497 deaths were registered during the week ending Oct. 1st. The annual rate of mortality in these towns, which had been equal to 13·0 and 13·6 per 1000 in the two preceding weeks, further rose to 13·7 in the week under notice. During the 13 weeks of last quarter the death-rate in these towns averaged 12·9 per 1000, and exceeded by 1·1 the mean rate during the same period in the 77 largest English towns. The annual death-rates in the eight Scotch towns last week ranged from 8·4 and 12·9 in Aberdeen and Glasgow to 19 3 in Dundee and 19·6 in Perth. The 497 deaths from all causes in the eight towns last week showed a further increase of 3 upon the numbers in recent weeks, and included 83 which were referred to the principal epidemic diseases, against 78 and 72 in the two preceding weeks; of these 83 deaths, 51 resulted from diarrhœa, 14 from diphtheria, 8 from whooping-cough, 5 from measles, and 5 from scarlet fever, but not one either from "fever" or from small-pox. The mean annual rate of mortality from these epidemic diseases in the eight towns last week was equal to 2·3 per 1000, the rate from the same diseases in the 77 English towns being only 1·6 per 1000. The deaths attributed to diarrhœa in the Scotch towns, which had been 45 and 47 in the two previous weeks, further rose to 51 last week, and included 21 in Glasgow, 11 in Dundee, and 5 each in Edinburgh, Paisley, and Leith. The fatal cases of diphtheria, which had been 10 in each of the two previous weeks, rose last week to 14, of which 5 occurred in Dundee, 4 in Glasgow, and 2 in Edinburgh and in Leith. Of the 8 deaths from whooping-cough, 3 were returned in Glasgow and in Aberdeen. The 5 fatal cases of measles included 3 in Edinburgh and 2 in Glasgow; and of the 5 from scarlet fever, 3 occurred in Glasgow and 2 in Edinburgh. The deaths referred to diseases of the respiratory system in the eight towns, which had been 42, 58, and 64 in the three preceding weeks, declined again to 61 in the week under notice, and were 5 below the number in the corresponding week of last year. The causes of 19, or 3·8 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 581 births and 393 deaths were registered during the week ending Oct. 1st. The mean annual rate of mortality in these towns, which had been equal to 15·1, 17·0, and 17·5 per 1000 in the three preceding weeks, further rose to 17·8 in the week under notice. During the 13 weeks of the current quarter the annual death-rate in these Irish towns averaged 16·3 per 1000; the mean rate during the same period did not exceed 11·8 in the 77 largest English towns and 12·9 in the eight principal Scotch towns. The annual death-rate during last week was equal to 20·2 in Dublin, 14·0 in Belfast, 21·2 in Cork, 21·6 in Londonderry, 15·0 in Limerick, and 13·6 in Waterford; the mean annual death-rate last week in the 16 smallest of these Irish towns was equal to 20·1 per 1000. The 393 deaths from all causes in the 22 town districts last week showed a further increase of 6 upon the numbers returned in recent weeks, and included 58 which were referred to the principal epidemic diseases, corresponding with the number in the previous week; these 58 deaths were equal to an annual rate of 2·6 per 1000, the rate from the same diseases last week being 1·6 in the 77 English towns, and 2·3 in the eight Scotch towns. The 58 deaths from these epidemic diseases in the Irish towns last week included 43 from

diarrhœa, 5 from diphtheria, 5 from whooping-cough, 3 from measles, and 1 each from scarlet fever and enteric fever, but not one from small-pox. The deaths attributed to diarrhœa, which had been 48 and 45 in the two previous weeks, further declined to 43 last week, and included 27 in Dublin, 7 in Belfast, 6 in Cork, and but 3 in the other 18 towns. The 5 fatal cases of diphtheria included 3 in Dundalk; and of the five deaths from whooping-cough, 3 occurred in Belfast and 2 in Dublin. The death referred to enteric fever was returned in Belfast and the fatal case of scarlet fever in Dundalk. The deaths in the 22 towns last week included 53 which were referred to pneumonia and other diseases of the respiratory system, against 47 and 54 in the two preceding weeks. The causes of 13, or 3·3 per cent., of the deaths registered last week in the Irish towns were not certified; in the 77 English towns the proportion of uncertified deaths last week did not exceed 0·8 per cent., while in the Scotch towns it was equal to 3·8 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeons: G. Welch to the *President*, additional, for special service at the Admiralty; and W. W. Pryn to Haslar Hospital, for instruction of surgeons on entry.

ROYAL ARMY MEDICAL CORPS.

The King has approved the appointment of Surgeon-General J. G. MacNeece to be Principal Medical Officer of the Eight (Lucknow) Division. Lieutenant-Colonel (local Colonel) H. B. Mathias, D.S O., principal medical officer of the Egyptian army, has arrived home on leave from Khartoum. Lieutenant-Colonel J. Meek, commanding the Station Hospital at Quetta, has been appointed to officiate as Principal Medical Officer of the Fourth (Quetta) Division. Lieutenant-Colonel J. R. Forrest has been reposted to the Irish Command on the expiration of his leave on medical certificate. Lieutenant-Colonel J. J. Russell, at present stationed at Limerick, has been appointed Staff Officer to the Principal Medical Officer of the Southern Command, England, with effect from Oct. 13th. Lieutenant-Colonel G. Cree, on expiration of his tour of service in India, has been detailed as Senior Medical Officer of the transport *Rewa*. Approval has been sanctioned for an exchange on the foreign service roster between Major G. T. Rawnsley and Major G. B. Carter serving at Dublin. Major G. B. Carter has been directed to proceed to India in March next. Major F. R. Bushwell embarked for a tour of service in India on the transport *Dongola* from Southampton on Sept. 21st. Captain L. Bousfield, on return home from Khartoum, has been posted to London District, being removed from the seconded list. Captain E. V. Aylen has been appointed a Specialist in Dermatology and Venereal Diseases to the First (Peshawar) Division. Captain A. E. Hamerton, D.S.O., has returned home from Uganda, where he was acting as a member of the Sleeping Sickness Commission. Captain R. C. Hallowes has embarked in the *Soudan* from Alexandria for home. The War Office has approved of an exchange on the foreign service roster between Captain R. L. Popham and Captain J. E. H. Gatt, serving at Cork and Cosham respectively. Captain S. M. Adye-Curran, serving at Queenstown, has been placed under orders to embark for India in the Northern Command about Nov. 4th next. Captain R. J. Cahill, Captain E. H. J. Luxmoore, and Captain K. A. C. Doig have been detailed for medical duty with troops on board the transport *Rewa*. Captain A. Chopping has been appointed a Specialist in Radiography and Electrical Science to the First (Peshawar) Division. Lieutenant C. Stoney has been posted for duty at Ipswich in medical charge of effective troops.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotions of officers of the Indian Medical Service:—To be Colonel (dated May 25th, 1910): Lieutenant-Colonel Francis Casement Reeves. Captains to be Majors (dated July 28th, 1910): John Cyril Holdich Leicester, Hubert Innes, William Southwick Willmore, Albert Elijah Walter, Leslie Thomason Rose Hutchinson, Alexander Mathers Fleming, Ellacott Leamon Ward, John Norman Walker, Vivian Heathcote Roberts, and Thomas Spinks Ross. Lieutenant to be Captain (dated Feb. 2nd, 1910): Sites Chunder Chuckerbutty.

The King has also approved of the following admissions to the Service:—To be Lieutenants (dated Jan. 29th, 1910): Framroze Jamsetjee Kolaporewalla, Edward Galwey Kennedy, Robert Forrester Douglas MacGregor, Arthur Lewin Sheppard, Paul Knighton Gilroy, Joseph Arthur Alexander Kernahan, Maurice Lionel Corrie Irvine, Ernest William O'Gorman Kirwan, John Valentine Macdonald, George Lawrance Duncan, Anath Nath Palit, Hubert Alan Hirst Robson, Kalyan Kumar Mukerji, and Cecil George Howlett.

Captain Arthur Anderson McNeight, Royal Army Medical Corps, has been admitted to the Indian Medical Service by exchange with Captain R. K. White (dated July 11th, 1910).

Lieutenant-Colonel A. Street has received an extension of his leave home from India for a further six months. Lieutenant-Colonel J. R. Adie has been appointed by the Government of India for special duty to conduct an inquiry in regard to malarial fevers in the Punjab. Lieutenant-Colonel Cleveland, secretary to the principal medical officer, His Majesty's Forces in India, has been granted leave to proceed home. Major A. Leventon has been appointed to officiate as Civil Surgeon at Dacca, Eastern Bengal. Major G. Hutcheson, civil surgeon of Aligarh, has been deputed to the Central Research Institute at Kasauli for duty in the Government laboratories. Major G. Lamb (Bombay) has received an extension of his leave. Major T. H. Symons and Major J. W. Grant (Bombay) have embarked for India. Major H. Innes has been appointed Civil Surgeon at Mymensingh, Eastern Bengal. Major T. W. Irvine, second-class agency surgeon, Bombay Presidency, has been granted six months' privilege leave combined with furlough home from India. Captain T. McVean has been appointed to officiate as Agency Surgeon, Second Class, at Muscat, vice Captain J. Crossle, granted 15 months' leave. Captain H. Ross, officiating civil surgeon at Etawah, has been placed on special duty in connexion with the establishment of the Medical College at Lucknow. Captain J. B. D. Hunter, who has been officiating as medical officer in charge of the British Consulate at Seistan, has been appointed His Majesty's Vice-Consul. Captain M. R. C. MacWatters has been appointed to officiate as Medical Officer in charge of the 38th Regiment of Dogras. Captain W. L. Harnett has been appointed to the charge of the Brigade Bacteriological Laboratory at Jubbulpore and to the officiating medical charge of the 22nd Punjabis. Captain E. J. C. McDonald, district plague medical officer, has been granted three months' privilege leave. Captain W. H. Hamilton has been appointed a Specialist in Ophthalmology to the Second (Rawal Pindi) Division. Captain J. Fry has been temporarily appointed to the Sanitary Department in Bengal. Captain T. Wallis has been selected to officiate as Deputy Assay Master, Bombay. Lieutenant R. E. Wright has been appointed a Specialist in Otology, Larnygology, and Rhinology to the Burma Division. Lieutenant J. Sewell has been selected to officiate as Surgeon Naturalist to the Marine Survey of India.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Attached to Units other than Medical Units.—Lieutenant Samuel Maclean to be Captain (dated May 19th, 1910).

HASLAR HOSPITAL.

The course of instruction for surgeons at Haslar Hospital will close to-day (Oct. 7th), when Admiral Sir John Durnford, K.C.B., D.S.O., will distribute the prizes.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.—A special course of lectures and demonstrations on the nervous system will be given at this hospital during the months of November and December at 5 o'clock in the afternoon. On Tuesdays Dr. Gordon M. Holmes will lecture on clinical anatomy; on Wednesdays Mr. Donald J. Armour will lecture on surgery; and on Thursdays Dr. James Collier will discuss the clinical examination of cases. The fee for the whole course is 5 guineas, and for one of the three parts of the course 2 guineas. Further particulars can be obtained from the Dean, at the hospital, Queen-square, Bloomsbury, Londor, W.C.

Correspondence.

"Audi alteram partem."

THE REGISTRATION OF THE MEDICAL STUDENT AND THE REGULATIONS OF THE GENERAL MEDICAL COUNCIL.

To the Editor of THE LANCET.

SIR,—I hope you will allow me to answer as briefly as possible the letter of Mr. Bevan printed in your issue on Oct. 1st. If I make any incorrect statement the Registrar of the General Medical Council will doubtless set me right.

The London University recognises as the first year of the five years' medical course a year spent (after matriculation) at St. Paul's School or similar schools in the study of chemistry, physics, and biology. A student who has thus spent a year can proceed to the M.B., B.S. degrees after four years at a medical school. The General Medical Council does not "register as a medical student" such a person until he actually enters the medical school. But this makes no difference whatever to him. The General Medical Council has no power to enforce the interval between "registration as a student" and "registration as a practitioner," and it has no power to refuse to register as a practitioner forthwith an applicant who has the degrees referred to or the qualifications of the Royal Colleges.

Mr. Bevan is quite right in thinking that many parents are misled by the form of the statement issued by the General Medical Council. The intention of the Council was doubtless right. It meant to prevent the premature specialisation in medical work. But the effect has been precisely the opposite of that intended. Instead of inducing the student to prolong his "general education," it tempts him (by the ungrounded fear of losing a year) to go to a medical school at the earliest possible moment.

I have no desire to enter into the question whether it is or is not desirable in the case of students who matriculate (or otherwise qualify) early that they should spend the first year of their medical curriculum at school. I do not even ask that the regulations issued by the General Medical Council should point out the possibility of this, since the possibility depends not on the Council but on the licensing bodies. All I suggest is that the regulations issued by a public body should not be actually misleading. A parent would require to have a legal knowledge of the respective powers of the Council and of the licensing bodies if he is not to be misled by this statement in the Council's regulations:—"The commencement of the course of professional study recognised by any of the Licensing Bodies shall not be reckoned as dating earlier than fifteen days before the date of registration."

I am, Sir, yours faithfully,

A. E. HILLARD, D.D.,
High Master of St. Paul's School.

West Kensington, W., Oct. 3rd, 1910.

To the Editor of THE LANCET.

SIR,—Perhaps my personal experiences regarding the regulations laid down by the General Medical Council as to registration of a student may be of use to your correspondent, Mr. R. Bevan. I was educated at Epsom College, a school which, I believe, was founded in the first place for those going in for the medical profession. From there I passed first the London Matric. and then the Pre. Sci. (M.B.), first part (chemistry, physics, and zoology). After this I was registered as a student and entered a London hospital.

At the end of four years I wanted to have a shot at the final Conjoint. I was refused admission on the ground that I could not be signed up for a five years' course at a recognised medical school. But I was told my year's work at Epsom would count as half a year towards the five! I tried to go in for the L.S.A. final and was refused on the same grounds. As a last resource I applied to the London University, who admitted me without demur. After the examination I inquired of the registrar of the Medical Council whether I could be now registered as a practitioner, although I had been registered as a student for four years only. The answer was that I certainly might, since the Council could not refuse to register a man who had duly passed his final. I think that these experiences will show that somehow the regulations are, to say the least of it, inconsistent, and I hope that they may help some other man in the same boat.

Finally, may I put in a plea that the General Medical Council at least extend the privileges of a recognised medical school to Epsom College? I am confident that the first year's training there is as good as, if not better than, that at any recognised medical school. Should my experiences be of any practical use to Mr. Bevan I shall be glad to communicate with him direct.

I am, Sir, yours faithfully,

HUGH L. BURTON, M.B.

13, Truro-road, St. Austell, Oct. 2nd, 1910.

THE COST OF SANITATION IN THE TROPICS.

To the Editor of THE LANCET.

SIR,—In the report on the measures taken against malaria in the Lahore Cantonment, which I have just received from the authors, Messrs. Nathan, Thornhill, and Rogers, the conclusion is reached that anti-malarial operations, such as have been carried out so successfully in other countries, cannot be readily adopted in India, chiefly on account of the great cost. Panama is cited in illustration. The statement is made on the authority of Colonel Macpherson: "That the total cost of sanitary and medical measures amounted to two millions of dollars per annum, or about a tenth of the total annual expenditure on the Canal works." Colonel Gorgas has recently denied this statement. His paper is published in the Gulf States *Journal of Medicine and Surgery* (July, 1910), and as it is, perhaps, not very accessible, the following quotations will be of interest. "The ordinary man in speaking of the Sanitary Department has in mind a department such as the Health Department of New York. Besides performing such functions as the Health Department of New York performs, the Sanitary Department on the Isthmus cares for all the sick, both in the hospitals and at dispensaries, administers the national quarantine, does the street cleaning and garbage collecting, fills in drains and reclaims waste lands, pays the salaries of some fifteen ministers of the Gospel, cares for all the cemeteries, does a general undertaking and embalming business for some 80,000 people, and besides all this, pays directly to the Engineering Department about $200,000 per year. Up to July 1st, 1909, Congress has appropriated $7,927,840 for the Department of Sanitation on the Isthmus. Of this $7,927,840 appropriated for the Sanitary Department, Congress has taken away and given to the construction department $938,827. This leaves the total appropriation for the Sanitary Department $6,989,013. Considering the 62 months covered by the period from May 4th, 1904, to July 1st, 1909, this gives us an appropriation at the rate of $112,726 per month. This would give us a yearly appropriation for the first years since the Sanitary Department has been organised of $1,352,712."

"Taking the fiscal year 1908 and 1909, we find that one-fourth of our expenditures were for sanitation. Apply the same rates to the average yearly appropriation, $1,352,712 divided by four gives us $338,178 as the annual appropriation for sanitation. Considering our average population for the past five years as one hundred thousand, we have the *per capita* appropriation for sanitation during the same period as three dollars and thirty-eight cents *per capita* per year, or 28c. per month."

"When we consider the great changes for the better that have been accomplished by the expenditure, I think that we will all agree that it has been very economically accomplished. Such expenditure is certainly well within the means of any tropical community."

I am, Sir, yours faithfully,

University of Oxford, Oct. 3rd, 1910. WM. OSLER.

THE MEDICAL REGISTER.

To the Editor of THE LANCET.

SIR,—Will you once more kindly draw the attention of members of the profession to the importance of keeping their addresses correct in the Medical Register? Circulars are not issued every year, and practitioners should themselves notify changes; failure to do this may result in the removal of the name because it is impossible to communicate with the practitioner, though every possible effort is made to avoid such a course. No person whose name is not on the Register

can give a valid certificate, and the signatures upon certificates of death are now compared with the Register by local registrars. Any practitioner who has any doubt as to the correctness of his address should at once communicate with this office. An acknowledgment will be sent of the receipt of all communications.

I am, Sir, yours faithfully,
H. E. ALLEN, Registrar.

Medical Council Office, 299, Oxford-street, London, W., Sept. 28th, 1910.

THE TREATMENT OF THE MORPHIA HABIT.

To the Editor of THE LANCET.

SIR,—In your Paris correspondence of Sept. 3rd mention is made of a preparation of opium "discovered" by M. Sahli of Berne and recommended by Dr. Moret-Lavallée in the treatment of the morphia habit. This preparation, pantopon, represents the totality of the alkaloids of opium, and its substitution for morphia is manifestly an important step in the transition towards final renunciation. I have in a recent contribution to the question (Morphinisme et Morphinomanie) pointed out the value of this composition which I have been using for nearly a year, and I have shown also that the weaning (for timorous subjects) can be rendered even still easier by the successive substitution of two other opium preparations of gradually decreasing strength. These are: (1) demorphinised pantopon—i.e., the totality of the opium alkaloids minus morphia; (2) a preparation in which all the alkaloids are eliminated except those constituting what is known as the meco-narceic group.

The demorphinised pantopon was realised for me four or five months ago by MM. Hoffmann-La Roche, but I have used the solution of meco-narceic alkaloids ever since its introduction by Duquesnel, and have frequently called attention to it both in your own columns and in other publications. I am, Sir, yours faithfully,

Le Vesinet, France, Sept. 29th, 1910. OSCAR JENNINGS.

A CASE OF CONGENITAL UMBILICAL HERNIA CONTAINING THE LIVER AND MOST OF THE SMALL INTESTINE.

To the Editor of THE LANCET.

SIR,—The following case may be of sufficient interest to warrant its publication. The patient, a primipara, aged 22 years, was seen by me on July 8th. She stated that she was 7½ months pregnant. The membranes had just ruptured, and a very large quantity of liquor amnii had escaped. About an hour afterwards she was delivered naturally of a male child with an enormous umbilical hernia, which contained all the liver and most of the small intestines. There was also well-marked "talipes equinovarus" present. The child survived its birth for 15 minutes.

It is curious to note that if this condition was in any way caused by the increased intra-uterine pressure, i.e., the hydramnios, which was undoubtedly present, the child should have been born alive.

I am, Sir, yours faithfully,
B. G. S. BELAS,
Senior House Surgeon, West Kent Hospital,

Maidstone, Sept. 28th, 1910. Maidstone.

THE Lord Mayor and Sheriffs attended the opening of the winter session of the Middlesex Hospital Medical School on Oct. 3rd, when Viscount Kitchener of Khartoum distributed the prizes to successful students. Among the prize-winners were the following:—First entrance scholarship, D. C. Ogilvie; second entrance scholarship, R. H. Fleming; third entrance scholarship, L. G. Phillips; Freer Lucas entrance scholarship (Epsom), H. Wearne; University scholarship, G. E. Beaumont; New Zealand students' scholarship, T. W. J. Johnson; first Broderip scholarship, B. S. Simmonds; second Broderip scholarship, G. O. Teichmann; John Murray gold medal and scholarship, B. S. Simmonds; Freeman scholarship, E. A. Runting; Hetley clinical prize, A. O. English; Lyell gold medal and scholarship (*prox. acct.*), A. O. English and G. O. Teichmann; Leopold Hudson prize, E. L. P. Gould; second year's exhibition, A. O. Gray.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

A New Sanatorium for Consumptives.

EXPERIENCE of the treatment of early cases of consumption at the municipal sanatorium at Salterley Grange soon impressed the health committee with the necessity for making some provision for cases of a more advanced nature. This has now been done. The hospital in Yardley-road, originally intended, but never used, for small-pox cases, has, with a few necessary alterations, been converted into an open-air sanatorium. Two large buildings have been taken over, one to accommodate 26 males, the other 24 females. Each ward is divided into four divisions, three for sleeping and one to be used as a dining and recreation room. A long verandah has been attached to one side of each ward, and two shelters have been erected in the grounds. The total cost of the alterations and additional furniture is estimated at £1200 and the cost of maintenance at £2500 per annum, which works out at about £1 per week per patient. The institution will be under the direction of Dr. W. H. Wynn, assistant physician to the General Hospital, who has been appointed visiting physician, and Dr. Godfrey Dixon of the Vale of Clwyd Sanatorium, who has been appointed resident medical officer. Admission to the institution is open to any *bonâ-fide* Birmingham resident who is suffering from tuberculosis of the lung in a rather more advanced stage than would entitle him to admission to Salterley Grange Sanatorium. The treatment will be for a definite period of six weeks, during which time every endeavour will be made to improve the general condition of the patient by open-air and other treatment, while at the same time instruction will be given in methods of preventing the spread of infection during coughing and spitting. Admission will only be by certificate from a medical practitioner to the effect that the patient is suffering from tuberculosis of the lungs, and preference will be given to those cases in which the infection is likely to be of prolonged duration. It is hoped that the institution will prolong the wage-earning capacity of a large number of consumptives and be the means of preventing infection from spreading when they return home, and also of demonstrating to numerous Birmingham residents the necessity of fresh air.

Children's Hospital.

The King Edward Memorial Fund, promoted by the *Birmingham Daily Mail* mainly for the rebuilding of the Children's Hospital, has met with considerable success. £25,000 have been received or promised up to date. The hospital committee has several thousand pounds in hand, and this, together with a substantial legacy, which will shortly fall due, and the balance of the Memorial Fund after paying for a statue, brings the total available for the hospital to about £30,000. The committee therefore feels itself justified in commencing building operations in the near future. The hospital, as now designed by Mr. F. Martin, will have 130 beds, more than double the number available in the present building. The hospital portion proper will consist of four accident wards, containing 16 beds each, in two-storey buildings, and five general wards with 14 beds, all capable of being worked on the open-air system. The roofs of these blocks will be flat and capable of taking a large number of additional beds, while at a slight extra expense they can be converted into full-ward units. Provision has been made for those patients who may require enclosed rooms, and the general wards, while open to the air under normal conditions, will be fitted with glazed windows which can be placed into position in stormy weather, so that at very short notice they can be converted into wards of the ordinary enclosed type. There will be two operating theatres and rooms for X ray examinations, and a septic and infectious block with 12 beds. It is expected that the total cost will be well within £50,000.

The Daily Bath in Schools.

At two of the Birmingham schools situated in poor districts—Floodgate-street and Gem-street—there has been for some time past provision for shower-baths. At Floodgate-street School there are 10 shower-baths and from 350 to 400 children receive a bath once a week. At Gem-street there are four shower-baths and a small plunge-bath. They are used by the children attending the deaf centre and the mixed school, and on the average 150 children are bathed every

week. At each school is an apparatus for stoving the clothes of verminous children. The bathing is done in school hours and forms part of the school curriculum, and so greatly do the children enjoy it that the greatest punishment a teacher could inflict would be prohibiting a child from having a bath. Abundant evidence is forthcoming of the increased mental and physical activity, increased power of attention, and lessened tendency to disease that have been experienced.

Oct. 4th.

WALES.

(FROM OUR OWN CORRESPONDENTS.)

Welsh National Memorial to King Edward.

WHILE suggestions were being made in several towns of North and South Wales with regard to local memorials to the late King Edward, the Lord Mayor of Cardiff, in June last, called a conference at Cardiff of representatives from all parts of the Principality to consider the desirability of promoting a memorial of a national character. The conference decided that such a memorial should be established, and that the precise form it should take should be left to a future meeting, although it was generally understood that it must appeal to the whole of Wales, and must deal with the welfare of the people. The Lord Mayor of Cardiff invited suggestions to be sent to him, but from the first it seemed apparent that the memorial would take the form of the provision of institutional treatment for consumptive persons living in Wales. A far more comprehensive scheme than the mere erection and maintenance of sanatoriums has now, however, been decided upon, and at the resumed conference, which was held at Shrewsbury on Sept. 30th, it was unanimously resolved to approve the principle of a national campaign against tuberculosis with a view of completely stamping out the disease as the most appropriate form of national memorial to the late King Edward VII. Mr. David Davies, M.P., whose grandfather was one of the principal founders of the town of Barry, has taken a prominent part in the proposed scheme and has promised to contribute £25,000 towards its cost. It is intended to raise a fund of £300,000, one half of which has already been promised. Any and every recognised measure for lessening the ravages of tuberculosis are to be included in the scheme. Besides the erection and endowment of sanatoriums there are to be tuberculosis dispensaries, and arrangements are to be made for providing health visitors and for educating the people by means of lectures, &c., while the condition of the milk-supplies is to be inquired into. At present the only two institutions in Wales for the treatment of consumptives are the West Wales Sanatorium for the counties of Cardigan, Carmarthen, and Pembroke, and a small institution in Anglesey. In the five years 1904–08 the death-rate at all ages from phthisis in England and Wales was 1·2 per 1000 per annum. In the English and Welsh counties the highest rates were in Cardigan (2·3 per 1000), Merioneth (1·6 per 1000), Carmarthenshire (1·6 per 1000), Carnarvonshire (1·6 per 1000), and Pembrokeshire (1·4 per 1000). There appears, therefore, to be ample need for such a campaign against the disease as that which is contemplated.

Swansea Garden City.

There is now being held in Swansea under the auspices of the National Housing and Town Planning Council a cottage exhibition the objects of which are to provide examples of modern suburb planning under existing by-laws; to stimulate the building of well-arranged and comfortable houses capable of being let at rents within the means of workmen, and to provide architects and builders who desire to improve upon existing methods of planning and building workmen's cottages with an opportunity of showing the value of their improvements in a definite and practical manner. A portion of an estate, 50 acres in extent, and which belongs to the Swansea corporation, has been given up for the purposes of the exhibition. In the first instance prizes were offered for the best site plan and no less than 80 architects competed. The site was then laid out by the corporation in accordance with the plan adjudged the best. There were subsequently erected 29 cottages at a cost varying from £202 to £350. There are not more than four houses in any one block and the maximum number of houses per acre is 20. The ground rent charged by the corporation is equal to about £18 per acre. The site is not an economical one to build upon, for it is situated on the side of a hill which overlooks Swansea Bay. The need for houses in Swansea at the present time is very great, and it is hoped that the venture of the National Housing Council may stimulate the local builders to supply that need either on the corporation estate or elsewhere.

Oct. 4th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The British Hospitals' Association.

THE first annual conference of the British Hospitals' Association was held at Glasgow University last week. In the absence of Mr. H. Cosmo Bonsor, the President of the association, the chair was taken by Mr. J. D. Hedderwick, chairman of directors of the Royal Infirmary, Glasgow. In the afternoon of the first day the members were entertained to luncheon at the City Chambers, Lord Provost McInnes Shaw presiding. During the days of meeting of the conference discussion took place on matters bearing on hospital management and development. A paper was read by Mr. Charles Stewart Loch, secretary to the council of the London Charity Organisation Society, on the "Social Policy of Voluntary Hospitals." He suggested that every patient in a hospital should pay according to his ability, and that medical men who took part in the work of the hospitals should be remunerated. This general policy, he argued, would lead to a better remuneration of medical men, to a better division of labour among institutions for the sick, and to a very serviceable association in charity. "The Abuse of the Hospital and its Cure" was treated by Mr. A. Scott Finnie, treasurer, Aberdeen Royal Infirmary, who pointed out that the growth of the numbers of those receiving free hospital treatment left little room for doubt that very many were improperly availing themselves of such treatment and of the gratuitous services of the medical and surgical staffs. A first step in real reform would be a conference between representatives of all the interests involved. Subscribers would express their views as to the bestowal of their benevolence, hospital governors would tell of the difficulties experienced, and workmen's representatives would give valuable aid in determining appropriate standards of inability to pay, keeping in mind other provisions for times of sickness. In the discussion it was pointed out that as long as there was no provision for the poorer middle-class sick it was futile to talk about abuse of hospitals. It was generally agreed that there was a need for paying hospitals. As things at present stood, special treatment could be obtained by the rich and by the poor which was beyond the reach of the middle class, if the question of hospital abuse was looked upon in too narrow a spirit. A paper was also read by Mrs. Sidney Webb on the Coming of a Unified County Medical Service and how it will affect the Voluntary Hospital. According to her it would make little difference. Let the municipality do what it would, there would always be people anxious to contribute to hospitals, and there would be always even an incessant growth of new and additional hospitals. The final paper was read by Dr. Nathan Raw on the Institutional Treatment of Tuberculosis.

Caledonian Medical Association.

The Caledonian Medical Association held its annual meeting at Fort William. Dr. A. Cameron Miller (Fort William) was elected President for the ensuing year in succession to Dr. David Blair (Lancaster). A paper entitled "The Physician in Fiction" was read by Dr. Miller, and other contributions, including one of special local interest by Professor Mackendrick on "Reminiscences of Lochaber," were submitted. In the evening the annual dinner was held in the Alexandra Hotel. The toast of "The Society" was proposed by Provost Mackenzie. Lord Morton invited the members to a cruise in his yacht the following day.

Notification of Births in Aberdeen.

In Aberdeen the working of the Notification of Births Act has been exceptionally successful, largely owing to the system of Dr. Matthew Hay. In explaining the plan of procedure adopted Dr. Hay said: "When the Act came into force I sent a summary of its provisions to all the medical men and nurses in the town, pointing out what they were called on to do. For a time there were omissions, and

there are so still; but they have been reduced to almost vanishing point." Dr. Hay gets from each registrar a return of the births registered with him each week, and these he carefully compares with the notifications he receives. "Thirty-six hours are allowed under the Act for notification being made, and we allow them a week. When, however, we come across a late notification we send a note to the parent drawing his attention to the penalty he has rendered himself liable for. In the same way in cases of failure to notify we send a punitive letter to the parent, who is of course the first person mentioned in the Act. The parent who receives such note generally comes here in fear and trembling to explain that he did not know such a duty was imposed upon him. I point out to him that parents are supposed to know the law. The result is that those people speak to their doctor about the trouble they have got into, and say he should have informed them what to do. A doctor naturally does not like to have differences with his patients, and accordingly he makes it a point in all further cases to inform the parent or the nurse of the necessity for notifying the medical officer of the birth and of the penalty to be inflicted for not doing so. In that manner the medical men are drilled and the efficient working of the Act secured. What medical men contend is that they receive no fee for notifying. I think they ought to be paid, but of course we have not the making of the law, but only the administration of it. For the whole month of September there have only been four late notifications, and all over the omissions only amount to about 5 per cent."

The New Sick Children's Hospital for Aberdeen: Her Majesty the Queen to become Patron.

A special committee of the directors of the Aberdeen Royal Hospital for Sick Children met on Sept. 29th to receive the report of a subcommittee as to the best means to be taken to provide new hospital buildings. It was announced that Her Majesty the Queen had graciously expressed her willingness to become patroness of the institution. It is hoped that this further mark of Royal favour, which will greatly gratify the public of Aberdeen, will be the means of spurring on the efforts to provide funds to erect new hospital buildings. The directors expect that they will be able to secure a suitable site within the city. It has been suggested that the new buildings would form a most appropriate memorial to His late Majesty King Edward, and might bear the title of "The King Edward Memorial Hospital."

Red Cross Society: Meeting in Aberdeen.

A meeting of this society was held on Sept. 30th in the Town and County Hall, Aberdeen, for the purpose of organising a county branch of the British Red Cross Society, and to hear Major Fleming, D.S.O., secretary of the Scottish branch, explain the objects and methods of the society. The office-bearers of the branch have been appointed already and are as follows:—President: The Countess of Aberdeen. Vice-presidents: Lady Cathcart, Mrs. George Coats, Mrs. Duff, the Countess of Erroll, Lady Leith, Mrs. Russell, and Lady Saltoun, with Mr. William Smith, advocate, as the honorary secretary and treasurer. Lady Aberdeen presided, and there was a large and representative attendance. Mr. Haldane sent a letter regretting his inability to be present and saying that the War Office and the General Staff attached great importance to this work as it helped their scheme for home defence and trained men and women in time of peace to do what would prove most valuable in time of war. He sent his best wishes for the movement in the county. Lady Aberdeen in her speech thanked those who had come to the meeting to give a good send-off to the Red Cross Society in Aberdeenshire. The work of the society did not seem to take hold of Britain until recently, when the late King Edward and Queen Alexandra issued an appeal to the people of the country to organise the society. In other countries the society had flourished. The Red Cross Society was not only organised to meet the needs of war, but it was intended to train the citizens to be prepared to meet all kinds of national emergencies. Major Fleming explained the working of the society, and Emeritus Professor Alexander moved the first resolution:—

That the Right Honourable Robert Farquharson of Finzean be appointed director for the county, and Dr. Cran (Banchory) assistant director.

The motion was unanimously agreed to, and Dr. Farquharson moved:—

That the Red Cross Society be organised in the county by forming three divisions—namely, (1) the Buchan and Formartine Division; (2) the Donside; (3) the Deeside, and that the following be appointed to act as Vice-Presidents: Countess of Aberdeen for Buchan and Formartine; Lady Sempill for Donside; and Mrs. Coleman of Lillyprome and Bielack for Deeside Division.

Lord Sempill seconded and the motion was adopted.

Sudden Death of a Broughty Ferry Doctor.

The death took place very suddenly on Sept. 24th of Dr. George Grant at his residence, Lomondbank, Broughty Ferry. Born at Tomintoul 49 years ago, he was a son of the late Mr. James Grant, LL.D., one of the most successful and best known of Scottish teachers. For the past few months the deceased had been in indifferent health, but the end came suddenly. Deceased was educated at his father's school in Keith, and then went to Aberdeen University, where he had a distinguished career. Shortly after graduation Dr. Grant went to East Lancashire, where he practised for over 20 years. There he interested himself in ambulance work and was, indeed, one of the originators of the movement in East Lancashire. He was also at one time an enthusiastic volunteer and held the rank of captain in one of the East Lancashire corps. He went to Broughty Ferry five or six years ago, and continued, but only to a limited extent, to practise his profession. He married a daughter of the late Mr. James Strachan, Brae, Keith, and sister of the late Professor Strachan of Manchester, the eminent Celtic scholar. He is survived by his widow and a daughter. Of a most unassuming and kindly disposition, Dr. Grant was held in high esteem, and the news of his death will be received with deep regret.

Oct. 4th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Report of the Local Government Board.

THE publication of the annual report of the Local Government Board for Ireland for the year ending March 31st last allows some particulars to be added to those published in THE LANCET of August 20th (p. 593). The number of cases of typhus fever was 182, as compared with 162 in the previous year; the increase is due to an outbreak of over 50 cases in the Belmullet district. An outbreak of typhoid fever occurred in Kilworth camp, and was traced to a typhoid carrier, a dairymaid on a farm which supplied the camp with milk. This girl had had typhoid fever in 1903, and though she remained in good health ever since, several persons who had been associated with her had developed typhoid fever. When her condition as a typhoid carrier was established by the discovery of typhoid bacilli in her urine, the girl was brought to a Dublin hospital that her case might be thoroughly investigated. A full report is supplied by Professor E. J. McWeeney. The urine contained large numbers of typhoid bacilli, but on no occasion were any found in her fæces. Treatment by drugs and by vaccines was useless, and after six months there was still bacilluria.

Infant Mortality and Pasteurised Milk.

At the last meeting of the South Dublin Guardians the master submitted a return of the deaths in the nursery and crèche for the years 1906, 1907, 1908, 1909, and 1910. Mr. Crimmins said that in 1907 a committee was appointed to consider the death-rate in the nursery and crèche. It recommended that an experiment should be tried of feeding the children on ordinary new milk warmed to the natural heat of the cow. That recommendation was adopted, and the result was seen in 1908 and 1909, when the deaths fell to 95 from 113. Then, in 1909, on the recommendation of Dr. Dunn, pasteurised milk was substituted as the food for the children, and the death-rate jumped up to 129. This report has naturally given rise to considerable alarm. The honorary secretary of the Pasteurised Milk Depôt of the Women's National Health Association of Ireland has written to the papers, pointing out that the South Dublin Union experience differs from experience elsewhere. The report is, of course, unconvincing, in that no information is given concerning overcrowding and the sanitary condition of the nursery generally.

Freedom of the City of Dublin Conferred on Sir Charles Cameron.

Last week the corporation of Dublin unanimously elected Sir Charles Cameron, medical superintendent officer of health, an honorary freeman of the City of Dublin. Sir Charles has been in the service of the corporation for nearly half a century, and for 30 years has occupied his present position. Although the health of Dublin is still in a highly unsatisfactory condition, there has, of course, been great improvement in 30 years. The death-rate has come down from 37 per 1000 to 22. The compliment is a pleasant expression of the cordial personal feelings which Sir Charles Cameron has always been so fortunate as to evoke in those with whom he has been associated.

Appointment of City Bacteriologist for Dublin.

After over a year's deliberation the corporation of Dublin has elected a bacteriologist for the city in the person of Dr. M. Russell. The remuneration is to be in the form of fees for certain specific investigations. In the first instance, the corporation invited candidates for the post to state the fees for which they were willing to undertake certain investigations. The resulting tenders showed such absurd differences in the value at which the candidates estimated their professional work that the corporation officials had themselves ultimately to draw up a definite scale. The fees granted, while not erring towards generosity, cannot be regarded as inadequate.

Fatal Accident to a Medical Man.

A fatal cycling accident occurred last Saturday evening in the northern part of County Dublin to Mr. P. J. Smyth, a medical man practising in Stamullen. While riding home shortly after dark he apparently missed the road and ran into a wall, dislocating his neck. He was found dead a few minutes after the accident. Mr. Smyth practised in the neighbourhood for many years.

King Edward Memorial in Belfast.

The first meeting of the general committee, which was appointed at a public meeting on Sept. 13th, took place on Sept. 29th, and an executive committee was selected of 29 members, of which the Lord Mayor is chairman, and five are to form a quorum. On this representative body care has been taken that every interest is represented among the subscribers. Sir John Byers and Dr. R. J. Johnstone, secretary of the medical staff of the Royal Victoria Hospital, were chosen as the medical members. The amount subscribed is now £12,500.

New Cottage Hospital at Bangor.

The new Cottage Hospital in Bangor, the health resort at the east side of Belfast Lough, was opened on Saturday, Oct. 1st, in the presence of a very large and representative assemblage. The building, which has been simply treated in the Early Georgian style, is beautifully situated in spacious grounds of its own. It has been designed for about 24 patients and contains suitable accommodation for them and for the administrative staff, and an excellent operating theatre. The cost of building and equipment—about £4000—has been practically covered by contributions, only a sum of between £300 and £400 being now required to open the place free of debt. In the course of the inaugural proceedings Professor J. A. Lindsay said there was one problem—hospital abuse—which required solution, and in order that this solution should be final and satisfactory three things would have to be taken into consideration. The first was that the needs of the sick and injured who could not pay for their own treatment should be adequately met; the second was that the money of the charitable public should not be spent upon those who were not proper objects of charity; and the third was that the just and reasonable rights of medical practitioners should not be unduly interfered with. All the medical men in Bangor can attend cases in this institution, and while the life-governors and the subscribers may nominate the poor for free treatment, all who can contribute are expected to do so. Mr. John Gorman gave the meeting many interesting details about the new hospital.

Sewage Disposal and Flooding in Belfast.

Two important and matured schemes were presented to the Belfast City Council at its meeting on Oct. 3rd, and passed, in reference to sewage disposal and flooding in Belfast. They came from the improvement and public health committees. The one scheme is for the completion of the sewage sedimentation plant, and the other for the tapping at high levels of the mountain streams and the carrying away from them of flood-water by culverts as a practical remedy for flooding in the low levels of the city, and especially at the part of the city known as Greencastle. The completion of the sewage sedimentation plant will cost £61,000, in addition to the £44,000 already expended, while the diversion of the flood water at high level by culverts will entail an expenditure of £90,000.

Oct. 4th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Death of Professor Raymond.

FRENCH medical science has sustained a serious loss by the death of Professor Raymond, who has passed away at the age of 66 years. He was a professor at the Faculty of Medicine, a member of the Academy of Medicine since 1899, and a Commander of the Legion of Honour. He was a pupil of Vulpian and Charcot, and was marked out by the latter to be his successor in his hospital practice and in his chair at the Salpêtrière. Professor Raymond received these appointments in 1894 and became one of the greatest authorities on the subject of nervous diseases. Originally intended for a veterinary career, he joined the school at Alfort when 17 years of age, ultimately obtaining the position of *chef de service* in the department of anatomy and pathology, but as he now found himself attracted to the medical profession he entered the School of Medicine when 23 years of age. In the competition admitting to the position of hospital *interne* he took the second place, being then 28 years of age, and at the end of his period of office he received the gold medal. He became *chef de clinique* at 33 years, hospital physician at 34 years, and *agrégé* at the Faculty in 1880. His clinical lectures on nervous diseases at the Salpêtrière were very well attended. In 1908 the University of Oxford conferred upon him the honorary D.Sc. degree.

Probationer Nurses.

An examination is now being held for the admission of 100 probationers to the nursing school of the Assistance Publique. Candidates must be women of good constitution from 19 to 26 years of age; those who have not the opportunity of staying with a family in Paris receive free board and lodging in the school during the period of the examination. In addition to emoluments in kind, such as sleeping accommodation, food, and clothes, they are paid 10 francs per month for the first year and 20 francs per month for the second year; they must also agree to serve in the institutions of the Assistance Publique for three years, with the alternative that in case of failure they must repay the cost of their maintenance at the rate of 1095 francs per annum. On leaving the school the pupils who pass the final examinations are provided with situations as second-class nurses in the institutions of the Assistance Publique, receiving emoluments in kind as already mentioned and wages of 700 francs per annum.

International Medical Association for the Prevention of War.

At the general meeting of the International Medical Association for the Prevention of War it was decided that the first congress shall be held in Paris in June, 1911. The meeting passed a vote of thanks to the press of all countries which has done so much to spread abroad a knowledge of the ideas and views of the association.

Action for Damages against Medical Men.

The civil tribunal of Toulouse recently decided an unusual case originating in a dispute between the Syndicate of Medical Men of Toulouse and the Federation of Mutual Aid Societies. The syndicate had obtained 160 withdrawals from the service of the societies and had given notice to terminate contracts made with some of the more important among them, but in one of the societies three medical men took the places of practitioners who had withdrawn. The syndicate in return put them on its "index," the effect of which was that they were regarded as not in practice; all professional coöperation with them was forbidden, and every member of

the syndicate who might enter into professional relations with them made himself liable to a fine varying from 20 to 100 francs, which might be doubled in the event of a second offence. One of these three medical men thereupon brought an action before the tribunal, claiming 100,000 francs damages against the president and secretary of the syndicate. In the result the tribunal decided in favour of the syndicate.

Precautions against Cholera.

In several parts of France steps are being taken to prevent the importation of cholera by passengers or goods coming from infected countries. In conformity with a resolution adopted by the general council of the department of the Nord 30 military male nurses on Oct. 1st proceeded from Lille to the railway stations of Quiévrain and Jeumont, where they will do duty under the regulations for the prevention of cholera. Very strict measures are being taken with respect to goods brought from Naples. At Lyons the railway trains conveying emigrants from Italy to Havre are disinfected and their water-closets are examined.

Conference on Cancer.

The International Conference on Cancer met on Oct. 1st in the large amphitheatre of the Faculty of Medicine, 22 nations being officially represented. M. Doumergue, the Minister of Public Instruction, opened the proceedings, and among the more prominent members of the audience mention may be made of Professor Czerny of Heidelberg (president of the conference), Professor Bouchard (president of the French League against Cancer), Professor Landouzy, Professor Chantemesse, Professor Pozzi, Professor Widal, Professor Robin, Professor Delbet, Dr. Hallopeau, Dr. Metchnikoff, Dr. Kirchner of Berlin, Dr. E. F. Bashford of London, and Dr. Delage of the Institut. In his introductory address the Minister of Public Instruction, after some words of welcome to the members of the congress, and to the foreign delegates in particular, said that science had no frontiers, that feelings of international friendliness were increasing, and that a campaign against cancer had begun. Professor Czerny said that it was the French League against Cancer which had given rise to the international league. He then entered into technical details regarding cancer, a disease which was, in his opinion, on the increase; and, in the next place, he gave an account of the results which had been obtained since the year 1906, remarking at the same time that he hoped to see them improved upon. Professor Landouzy now spoke some words on behalf of the Faculty, and after him Professor Bouchard and all the foreign delegates successively addressed the meeting. Professor Delbet, general secretary of the conference, then read an interesting report in which he made a protest against unqualified persons professing to treat cancer; he firmly believed that this disease was curable, the proper treatment being a surgical operation performed in an early stage, and a similar opinion was expressed by many of the subsequent speakers. The conference adopted a proposal made by M. de Hansemann and Professor Delbet recommending unification of the technical terms relative to cancer which were employed in various countries. On Oct. 2nd the members of the conference were received by Dr. Henry de Rothschild at the Abbaye des Vaux de Cernay.

Oct. 3rd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The German Association of the Medical Press.

THE German Association of the Medical Press held its annual meeting on Sept. 11th in Berlin, Dr. Spatz, the editor of the *Münchener Medicinische Wochenschrift*, being in the chair. Nearly all the leading medical journals and reviews were represented, and it was stated that about 150 medical periodicals had established a connexion with the association. The principal subject of discussion was the question of reform in some details of medical journalism. The association took the view that the publication of articles on medical topics should as much as possible be reserved to the medical press, and that therefore *Festschriften*, special reports and year-books issued on behalf of medical institutions and hospitals were undesirable. Inaugural dissertations—i.e., the essays written by candidates for the degree of M.D.—would in future be reviewed only when an epitome had been sent to a medical journal. In original articles the addition of a bibliographical appendix should be avoided. Preliminary announcements on the results of new researches must contain only facts and should as much as possible be avoided. The editor of the *Deutsche Medicinische Wochenschrift* then gave some particulars relative to the black list of authors suspected of writing articles on behalf of manufacturing chemists, such articles being in reality advertisements of new pharmaceutical preparations. The black list has proved very efficacious, as the chemical manufacturers made less use of those authors since their contributions ceased to be inserted or reviewed in the journals belonging to the association. It was decided to complete the black list by adding the name of authors who were undesirable for other reasons than the above mentioned, and to prepare a similar list of journals whose respectability was doubtful. Advertisements of new remedies if containing obvious misstatements, and contributions by authors who had allowed previous publication of their articles, or portions thereof, in an ordinary newspaper, would be excluded from the journals belonging to the Association. This restriction was necessary, because some authors had written for the daily papers summaries of their experiences with Professor Ehrlich's new remedy. Dr. Posner, the editor of the *Berliner Klinische Wochenschrift*, presented a report on the proceedings of the International Association of the Medical Press at its meeting held during the International Medical Congress at Budapest. The influence of the German Association of the Medical Press is evidently being exerted to raise the general standard of medical journalism.

Professor Ehrlich's New Remedy.

Professor Ehrlich's remedy "606" continues to be of the highest interest for the medical profession, and the paper which he read at the Congress of the Association of German Medical Men and Naturalists was the most remarkable event of that congress. Reports of favourable results obtained with this preparation are frequent in the medical journals. Dr. Michaelis, writing to the *Berliner Klinische Wochenschrift*, reported that he had administered it in 110 cases. Of these patients seven suffered from primary ulcer which disappeared in from one to three weeks; in one case only a maculo-papular exanthem occurred but disappeared within 24 hours. In 15 cases there were secondary symptoms, which disappeared in in two days; papular exanthemata left only a small pigmentation after a period varying from 4 to 12 days. There were 22 cases of relapses from syphilis treated formerly by mercury; the Ehrlich treatment proved very efficacious in these cases also. A really marvellous effect was, however, observed in 33 cases in which, notwithstanding repeated administration of mercurials and iodides during several years, the symptoms did not disappear. The list included some patients who seemed likely to die within a short time, some who had for years been unable to work, and some who on account of fœtid ozæna were a burden to their family. There were patients with ulcerated gummata of the skin, the nose, the lips, and the tongue, as well as patients suffering from severe pains in the bones during the night; they all recovered within a few days. Professor Ehrlich was deeply impressed by the rapid recovery of patients who had hitherto derived no benefit from any kind of treatment. There were some cases of recovery from inveterate spinal and cerebral syphilis where undoubtedly a degeneration of the nervous substance had occurred. Of four cases of congenital syphilis in infants two were in a moribund state and died in 24 hours after the injection; the third, suffering from severe visceral syphilis, was free from symptoms on the sixth day after the injection, but unfortunately died from erysipelas on the fifteenth day. The fourth infant, who presented a maculo-papular exanthema, showed desquamation after 24 hours and the weight increased rapidly. In tabes and general paralysis the success was doubtful. A feverish reaction was sometimes totally absent and sometimes only very slight. In some cases the temperature rose to 39·2° C. Somewhat severe pain occurred as a rule for some hours. No obnoxious symptoms were ever observed, and the eyes, the kidneys, the heart, and the nervous system were never affected. It was not yet possible to say whether recovery would be permanent or not. Professor Ehrlich concluded from his experience that the new treatment was indicated in cases where treatment by mercury had proved inefficacious because the symptoms either did not disappear or else had a tendency to relapse, as well as in cases in which an idiosyncrasy against mercury existed or in which mercury could not be given because of

other organic diseases such as Bright's disease. Whether the new remedy was preferable to mercury for the treatment of recent syphilis was not yet ascertained. A contra-indication existed only in cases of severe cachexia.

Proposed Hospital for Juvenile Offenders.

A hospital for juvenile offenders is projected in Berlin. By the proceedings before the new children's courts it has become obvious that many of these culprits suffer from psychical and bodily abnormalities and hereditary taints. By adequate medical treatment and care a number of them may possibly be preserved from becoming irreclaimable criminals. Children until the age of 16 years are to be received in the hospitals.

Persistence of Enteric Fever Bacilli in the Urine.

Dr. Niepraschtz, a staff-surgeon of Wesel, writing to the *Zeitschrift für Hygiene*, reported that in the barracks of Wesel, which were fitted up with first-rate hygienic arrangements, epidemics of enteric fever broke out at irregular intervals. The water was supplied from the municipal waterworks, the disease was not prevalent in the town, but 91 cases, of which six were fatal, occurred within the last four years. It was ultimately found that a non-commissioned officer passed enteric fever bacilli in his urine. The man had typhoid seven years ago, but had completely recovered; but Widal's reaction continued to give a positive result.

Oct. 3rd.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Guido Baccelli and the Cholera in Rome.

THE Dean of Italian Medicine, discussing the situation with a colleague the other day, reiterated his conviction, already reported in THE LANCET, that cholera will effect no foothold as an epidemic in Rome. "Here," he added, "we have a double line of defence: that of the Divizione Generale della Sanità and that of the Divizione Sanitaria del Comune, both of them efficient in *personnel* and equipment, and both of them, in the day now passing, equal to all its exigencies in point of skill, experience, and courage. I have been present," he proceeded, "at all the visitations of cholera in the city and provinces for the last 56 years. One of these was at Tivoli, which lasted from 1854 to 1856 inclusive (36 months), but the worst was that in 1867 at Albano, perhaps the most destructive recorded in the annals of medicine. With such means of defence as science now commands the dread of cholera, as an epidemic, is quite without warrant. True, in several great centres the 'vibrione colerico' has acquired, so to speak, the right of citizenship, but it is never really formidable. Some years ago Finkler and Prior came to me with the request that I should examine their microscopic studies on 'cholera nostras.' I advised them to go to Genoa where Asiatic cholera had declared itself, that they might see the difference, if any, between the 'vibrio' of the one type and that of the other. They found little or none. For another reason all panic as to the invasion of cholera has no justification. Cholera, if I may say so, is an 'honest malady,' and betrays itself immediately by the virgula bacillus. As to so-called cases of 'cholera fulminante,' I am inclined to be sceptical. Even when the malady has declared itself in epidemic form such cases may be counted on one's fingers. My experience has been that in 95 patients out of every 100 cholera betrays its presence by premonitory diarrhœa. The moment this symptom is in evidence, let the physician be 'rung up' immediately, for in that stage science has many resources for the arrest or elimination of the *materies morbi*. Also, the case should be reported at once to the sanitary authority, if only to intensify the recognised precautions. These latter are chiefly to be sought in the ingesta, solid and liquid. The food should be thoroughly sound; fish to be freely partaken of, excluding the crustacea; vegetables also to be eaten with impunity, but only after boiling; personal cleanliness, particularly in the hands, is *de rigueur*, before sitting down at table. Wherever the water is suspected as to purity, it must be boiled before use. Wine should be taken, but moderately, and of a generous quality. Lastly, the *mens æqua*, and nothing more." As I write, the Assessore d'Igiene, Dr. Rossi-Doria, has issued his "notizia ufficiale" for the last 24 hours. "No new case of cholera in Rome. Only four suspected cases have been reported, but on examination they were found to have no relation with cholera. One was a case of pleurisy, the other three were cases of indigestion. All the patients at the Lazzaretto are doing well; also the female case at the Tor di Valle."

The Health of Naples.

At 7 P.M. on Sept. 30th the official bulletin announced 17 cases with only five deaths. The improvement in the sanitary situation continues, slow but steady. The mortality has sunk from the 58 per cent. of Sept. 29th to 30 per cent. on the 30th. As to the "movimento" at the harbour, from the day on which it was declared "infected," the steamers carrying goods have been 74, the number of passengers 4000, while eight sailing vessels have had to put back to sea without "operazioni di commercio." Among the exports prohibited are carpets, articles of domestic use, and rags.

The Health of Genoa.

Here the sanitary authority reports the "salute pubblica" as excellent under every heading. From Sept. 30th at 2 P.M. there were recorded only two deaths from ordinary maladies within the preceding 36 hours—an infant and an adult male—while the number of births had risen to 30.

Oct. 1st.

NOTES FROM INDIA.

(FROM OUR OWN CORRSPONDENTS.)

Plague.

THE plague reports for the week ending August 20th for all India show a total mortality of 1046. The Bombay Presidency returned 350 deaths, the Central Provinces 114, and Mysore State, the United Provinces, Rajputana, and Ajmer Merwara all over 90 deaths each. For the week ending August 27th the total mortality for all India was 1325. There were 549 deaths from plague in the Bombay Presidency, 269 in the United Provinces, and 141 in Hyderabad State. On the recommendation of the Governments of India and Madras the Mysore State have sanctioned the use of kerosene oil emulsion for the disinfection of plague-infected houses. The Sanitary Commissioner of Mysore is, however, of opinion that kerosene oil emulsion is useful as a destroyer of fleas, that the Madras emulsion is cheaper and quite effective, that disinfectant powers are not claimed for these emulsions, that they cannot be considered to be of much value except in *pucca* (stone-built) houses, and that their use, like the use of disinfectants generally, is limited by the fact that they cannot affect the fleas or their ova when lodged in the cracks of the walls of mud-built huts.

Deaths Caused by Wild Animals.

A return showing the number of persons killed by wild animals in India is annually compiled and issued by the Government of India. The total number for 1909 was 2607, which is an increase compared with the preceding five years. The increase is specially noticeable in the number of deaths attributed to tigers in Madras, where the figures rose from 170 in 1908 to 291 in 1909, the districts of Coimbatore and Vizagapatam being the most dangerous. In Madras Presidency the number of deaths due to leopards rose from 45 in 1907 to 91 in 1909. In Bengal the number of deaths caused by tigers fell from 455 in 1908 to 303. There was also a decrease in Hazaribagh mainly due to the payment in 1908 of special rewards of Rs. 50 (£3 6*s.* 8*d.*) for every tiger killed within certain specified areas. The number of deaths from wolves in Bengal fell from 184 in 1908 to 167, but the deaths in Hazaribagh from this cause rose from 75 in 1908 to 95, notwithstanding that a special reward of Rs. 20 was offered for every wolf killed within certain areas. The reward has now been raised to Rs 50. The number of wild animals destroyed was 17,449, or about 500 less than the number reported in 1908. Nearly 500 leopards, 1473 tigers, 2850 wolves, and over 2000 bears were killed in the course of the year. The total number of snakes killed rose from 70,732 in 1908 to 88,503 in 1909.

Sept. 4th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Disease in Queensland.

Dr. Anton Breinl, director of the Tropical Diseases Hospital at Townsville, has reported that he has found a good many cases of beri-beri, chiefly among coloured people. Ankylostomiasis is fairly common in North Queensland. In one quarter of Cairns, known as "Sandy Gallows," Dr. Breinl found evidence of earth-eating in every house. Cane-cutters suffer from an affection locally known as "sand-worm," which manifests itself in the form of ulcer on the inner aspect of the foot and in which no parasite can be demonstrated. Dr. Breinl does not consider the occupation of cane-cutting unsuitable for white labourers, but suggests further investigation into blood conditions before and after working through the season.

Gaol Surgeons.

At Ballarat the medical man acting as gaol surgeon died recently and the Government sought to fill the position by inviting tenders from the medical profession. This action highly incensed the resident practitioners of the district, who agreed unanimously that none of their number would accept the position under £150 per annum. The Government has now decided that the medical officers of the lunatic asylum shall also be gaol surgeons.

Bush Nursing.

The first meeting of the Provisional Federal Council for the Australian Order of District Nursing was held at Government House, Sydney, on July 30th, and there were present the Governor-General and Lady Dudley, the Governor of Victoria and Lady Gibson Carmichael, the Governor of Tasmania (Sir H. Barron), Sir J. Carruthers and Professor Anderson Stuart (New South Wales), Dr. Newlands (South Australia), and Mr. A. W. Meeks (Federal Honorary Treasurer). The draft constitution was approved and various committees were formed to consider finance and questions of regulations. The scheme still fails to awaken any popular enthusiasm in any of the States, while the attitude of the medical profession is generally apathetic and that of the nursing organisations mildly hostile.

New Hospital.

On August 14th a new hospital was opened in Brisbane by the Governor of Queensland after being blessed by his Eminence Cardinal Moran. The institution will be called the Mater Misericordiæ Hospital and will be under the direction of the Sisters of Charity. The Order has already established St. Vincent's Hospital, Sydney, and St. Vincent's Hospital, Melbourne, the latter being a clinical school in the University of Melbourne.

Lady Talbot Milk Institute.

The committee of this undertaking, which was founded some two years ago to supply infants in poorer suburbs of Melbourne with pure milk during the hot months, finds itself in serious financial difficulties, and has appealed to the State Government for assistance. When the scheme was first mooted it was clearly foretold by expert critics that such a result was inevitable, and it has not taken long to come about. The Government, while disposed to render financial aid, has appointed a medical man and a departmental officer to examine the claims and working of the institute, and report thereon.

Radium.

The movement in Sydney to provide a supply of radium for the hospitals by public subscription has been taken up with enthusiasm by the press. Miss Nelly Stewart, a well-known operatic artist, has given a special matinée in aid of the fund, and a considerable sum of money is likely to be raised.

Ninth Australasian Medical Congress.

The ninth session of congress will be held in Sydney from Sept. 18th to 23rd, 1911, the President being Dr. F. Antill Pockley. The Presidents of sections are as follows:—Medicine: Mr. G. C. Hayward, Adelaide. Surgery: Mr. G. A. Syme, Melbourne. Obstetrics and Gynæcology: Dr. Rothwell Adam, Melbourne. Anatomy, &c.: Dr. E. H. Embley, Melbourne. Pathology and Tropical Medicine: Dr. Wilton Love, Brisbane. Public Health: Mr. J. W. Hope, Fremantle. Ophthalmology: Dr. J. W. Barrett, Melbourne. Neurology and Psychiatry: Mr. W. Beattie Smith, Melbourne. Children: Dr. A. Jeffreys Wood, Melbourne. Naval and Military: Colonel C. S. Ryan, Melbourne. Dermatology and Radio-Therapy: Dr. H. Lawrence, Melbourne. Laryngology, &c.: Dr. W. N. Robertson, Brisbane. The subject for general discussion by the Congress has been announced to be "Vaccine Therapy."

August 25th.

Obituary.

FULGENCE RAYMOND, M.D.,

PROFESSOR IN THE FACULTY OF MEDICINE OF PARIS; PHYSICIAN TO LA SALPÊTRIÈRE.

THE medical profession of France and neurologists the world over have sustained a serious loss by the death, in his sixty-seventh year, of Fulgence Raymond, professor in the Faculty of Medicine of Paris, and head of the clinic of nervous diseases at the Salpêtrière. Our Paris correspondent who makes the announcement gives details of his early career. It is less than a year since he was present, as a distinguished foreign guest, at the opening of the new out-patient department at the National Hospital for the Paralysed and Epileptic in Queen-square, London, thus evincing his constant interest in the work of institutions concerned with nervous disease, and little more than two years since he delivered a noteworthy lecture before the Royal College of Physicians of London on Premature Physiological Senescence localised to certain Organic Systems. The reproach has sometimes been raised that our continental *confrères* tend to ignore somewhat the labours of other workers in the neurological field than those who happen to be of their own country or nationality, but those who are acquainted with the numerous articles, papers, monographs, and volumes that have come from his pen know that Professor Raymond was as familiar with the neurological literature of England and America as with his own. He was catholic in his interests and cosmopolitan in his outlook, as befitted a great teacher. Here in England, therefore, where he had many friends, we can sympathise the more readily with our colleagues of the Parisian School of Medicine.

At the close of the lecture above referred to Professor Raymond said: "And at the present time can you not be justly proud of your brilliant phalanx of neurologists, who would not forgive me were I to sing their praises?" The compliment might with greater justice be returned, for the presence of so many distinguished pupils of the great Charcot has made the Société de Neurologie of Paris the premier neurological society of the world. Among them Professor Raymond held a pre-eminent place, inasmuch as he was called in 1894 to be Charcot's successor as clinical professor of nervous diseases at the Salpêtrière. How ably he filled a difficult position, and how nobly he maintained its traditions a constant stream of visiting strangers from all parts of the world can bear witness. It was said of him at the time: "Nous sommes persuadés que Fulgence Raymond occupera dignement la chaire de clinique nerveuse à laquelle viennent de l'appeler, à la presque unanimité, les professeurs de la Faculté de Médecine; qu'il continuera les traditions de notre illustre Maître, c'est à dire que les médecins étrangers trouveront à la Salpêtrière, de sa part, le même bon accueil; qu'il saura attirer autour de lui des étudiants laborieux, en mettant généreusement à leur disposition les richesses scientifiques de la clinique de la Salpêtrière. Et nous espérons qu'il poussera encore au delà les traditions hospitalières du Maître." These wishes were completely fulfilled. That the school of the Salpêtrière has maintained its brilliant reputation is due in no small measure to the quiet, modest, unremitting labours of Professor Raymond.

His literary activity was as remarkable as his scientific capacity. There appeared annually from his clinic volumes of *Leçons sur les Maladies du Système Nerveux* from 1894 to 1902, in which were published many articles that are models of clinical insight and scientific description. To the very end neurological journals, such as the *Archives de Neurologie*, *Revue Neurologique*, and *L'Encéphale*, were enriched by communications from him bearing on every department of nervous disease. His work on systematised scleroses of the spinal cord, on pseudo-tabes, Friedreich's disease, myopathy,

and hemichorea—to mention but a few—are contributions to our knowledge of permanent value. In collaboration with his colleague Professor Janet there appeared in 1898 a volume on *Névroses et Idées Fixes*, and in 1903 another on *Les Obsessions et la Psychasthénie* that have proved a rich treasure of scientific information on a most obscure and complex department of neurology. While perhaps the name of Raymond will not be associated with any strikingly original discovery in the science of which he was such a master, his fame as a teacher will remain wherever there are pupils of his to carry on his work. He delighted to associate with men younger than himself, to collaborate with them and aid them to the utmost of his ability, therein revealing his knowledge of the secret of clinical success. Those who have ever "assisté" at the meetings of the Neurological Society of Paris will appreciate the loss it has sustained, not only by the recent lamented death of Professor Brissaud, but now also by that of Professor Raymond, and will find it difficult to believe that his genial face and figure will be seen there no more, nor his voice heard in the councils and discussions of the society of which he was so long one of the most able and faithful supporters.

Sir Dyce Duckworth has sent us the following tribute to Professor Raymond's memory:—"The death of this distinguished physician has caused a deep sense of regret in the hearts of all who had the privilege of his acquaintance. As the successor of Charcot in the clinic of the Salpêtrière he filled a chair which has long been regarded as one of the most prominent teaching centres of neurology. Fulgence Raymond, however, was totally different in mind and manner from his great predecessor. Although, like him, he was a close and painstaking student of disease, with a mind set on precision and the revelation of the true inwardness of morbid processes, he was singularly calm and undemonstrative, and he never posed in public or private. Others will tell of his work and method, and not less of the splendid appreciation in which he was held by his colleagues and numerous pupils. None who heard him deliver his admirable lecture on Familial Diseases in the Royal College of Physicians of London in June, 1908, when he represented the French side of the *Entente cordiale médicale*, can forget that interesting occasion. His visit to London gave him great pleasure, and the honorary D.Sc. degree conferred upon him by the University of Oxford at that time he regarded as the supreme honour of his life. Last year he was an invited guest to the opening of the new out-patient department of the National Hospital for the Paralysed and Epileptic, Queen-square, and was much gratified at his kindly reception by the late King who conversed with him for some time.

Raymond's death is a serious loss to the Parisian School of Medicine. His personal qualities were most engaging. In his character he blended in a singular manner the elements of modesty, sweetness, and simplicity with great mental power. No one could know him in public or private life without loving him. Happy in his professoriate, in his practice, and in his domestic life, both in Paris and at his country home, he has been taken from a sorrowing band of relatives, colleagues, and devoted pupils. R.I.P."

JOSEPH HIGHAM HILL, M.D. BRUX., F.R.C.S. EDIN., L.R.C.P. EDIN., L.S.A.

WE regret to announce the death of Dr. J. H. Hill, which took place at his residence, Bedford-square, Bloomsbury, London, W.C., on Sept. 28th. He was a well-known practitioner in the district in which he lived and as a public servant did much good work.

He was educated at Glasgow, London, and Brussels, qualifying as a Licentiate of the Royal College of Physicians of Edinburgh in 1867. In the following year he became a Licentiate of the London Society of Apothecaries and obtained the Fellowship of the Royal College of Surgeons of Edinburgh in 1872. In 1879 he took, with honours, the M.D. degree of Brussels. He was a Government medical inspector of emigration at the Port of London, and among the positions which he held at various times were examining medical officer of the Royal Reserve Battalions of London, Government medical inspector in the United Kingdom for the United States of America, examiner in surgery for the United States Army and Navy pensioners, and Government medical officer at Sydney, New South Wales. His hospital appointments included those of senior medical officer, and medical superintendent of St. Pancras Infirmary, senior resident physician and resident surgeon to the Royal Free Hospital, and house surgeon to the Glasgow Maternity Hospital. He was the author of "An Analytical Report of Coroners' Inquests," and from time to time contributed to the medical journals. One of the subjects with which he was particularly interested was the importation and disinfection of rags, and in 1888 contributed to our columns with regard to this particular department of his work.

Medical News.

HOSPITAL DINNERS.—*Charing Cross Hospital.*—The annual dinner of the past and present students of this hospital was held on Oct. 3rd at the Criterion Restaurant, Mr. P. L. Daniel occupying the chair. He was supported, amongst others, by Professor William Osler, Dr. F. W. Mott, Mr. Stanley Boyd, Mr. Herbert Waterhouse, and Dr. T. W. Eden. After the loyal toasts Mr. Daniel, in proposing the toast of "The Hospital and School," referred to the *personnel* of the hospital staff, of which all connected with the institution might justly be proud. Mr. Waterhouse, in responding to the toast, drew attention to the successes of Charing Cross men at the examinations. He reminded those present also that they had been fortunate enough to obtain a money grant from the Board of Education, which it was hoped might mean that those who for so many years past had given their best teaching for nothing would get some sort of recompense. Dr. Eden made an excellent and amusing speech in proposing the toast of "The Visitors," to which Professor Osler replied. Professor Osler congratulated the school on its successes and the hospital staff on its scientific administration. He thought that a small school had decided advantages over a large school, and one of the most important of these was that the teacher was in closer contact with his pupil. He referred to the splendid gratuitous service of the medical staff at a hospital, only to be rewarded, perhaps, by damaging accusations of carrying out "the ghastly practice of vivisection." He asked where British medicine would have been if it had not gained so much of its advances from a series of properly conducted scientific experimentations. He thought it would be a bad thing for the progress of medical science if methods of gaining knowledge, which were of the greatest service in stamping out disease, were to be prohibited on the representations of ignorant persons. Mr. Stanley Boyd proposed the health of the chairman, and said they were very proud to claim him as a Charing Cross man, to which Mr. Daniel replied in suitable terms.——*Middlesex Hospital.*—The annual dinner of the past and present students of the hospital took place on Oct. 3rd, Mr. T. H. Kellock being in the chair. The toast of the Middlesex Hospital and Medical School was responded to by Viscount Duncannon, Dr. H. Campbell Thomson (Dean), Mr. J. Bland-Sutton, and Mr. B. S. Simmonds (Broderip scholar).——*St. Bartholomew's Hospital.*—The annual dinner was held in the Great Hall of the hospital on Oct. 3rd, Mr. C. B. Lockwood, surgeon to the hospital, being in the chair. The dinner was well attended. A plain, clear speech by Mr. Lockwood, setting out at the same time the strong position of St. Bartholomew's Hospital and its needs in certain directions, was replied to by Lord Sandhurst, the treasurer of the hospital, who promised on behalf of the governors that no efforts should be spared to keep the institution as a model hospital and school. Dr. Norman Moore proposed the health of the guests in witty terms, coupling the toast with the name of Sir Clifford Allbutt, who replied. Mr. Bruce Clarke proposed the health of the chairman.——*St. George's Hospital.*—The annual dinner was held on Oct. 1st at Prince's Restaurant, Piccadilly, Mr. G. R. Turner, surgeon to the hospital, being in the chair. The dinner was extremely well attended. Mr. Turner, in an excellent speech, showed that the hospital under the present conditions continued to attract a very high class of student, although their numbers were necessarily smaller than when the preliminary scientific subjects were all dealt with at St. George's. He spoke strongly of the way in which the Medical School of the hospital had been treated by the authorities of the University of London, but claimed none

the less great vitality for the institution. The Dean, Dr. E. I. Spriggs, in reply, was able to confirm Mr. Turner's words, and communicated to the audience a long list of honours obtained by St. George's students. The treasurer, Mr. A. W. West also replied. Other speeches were made by Mr. Brudenell Carter, who made an allusion of marked kindness to THE LANCET, by Dr. Squire Sprigge, Dr. J. Blumfeld, Dr. Sherwood, and Dr. G. P. Humphry.——*St. Thomas's Hospital.*—The annual dinner of the past and present students was held on Oct. 4th at the Hotel Cecil, Mr. W. F. Haslam occupying the chair. Amongst those present were Mr. Butlin, Sir T. Chavasse, Alderman Sir Thomas Crosby, Sir Alfred Keogh, Sir William Leishman, Sir James Porter, and Mr. J. G. Wainwright. After the toasts of "The King" and "The Royal Family" had been given, Mr. Haslam proposed "The Hospital and School," referring to the irreparable loss they had sustained in the death of Mr. Clutton and the retirement of Dr. Sharkey from the hospital staff. It was, however, a consolation to know that Dr. Sharkey was still to remain lecturer on medicine in the school. The toast was responded to by the treasurer, Mr. Wainwright and Dr. H. G. Turney (dean). Dr. T. D. Acland proposed the toast of "The Visitors," associating with it the names of Mr. Butlin, Sir T. Chavasse, Sir James Porter, Sir Alfred Keogh, Sir W. Leishman, and Alderman Sir Thomas Crosby. Mr. Butlin responded, referring to the feeling of affection which he had for St. Thomas's Hospital next to his own hospital. The health of the chairman was proposed by Mr. G. H. Makins, and in responding Mr. Haslam insisted on the grave omission in the programme, which contained no provision for toasting the honorary secretaries of the dinner. He repaired this by giving their healths himself, a toast which was drunk with great enthusiasm.——*St. Mary's Hospital.*—The annual dinner of past and present students was held at Princes' Restaurant on Oct. 3rd. Mr. J. Ernest Lane was in the chair, and there were 151 present. The chairman, in proposing the toast, "St. Mary's Hospital and Medical School," deplored the death of Mr. Henry Harben. The school for which he had worked so devotedly was very conscious of its irreparable loss. Mr. Lane had joined St. Mary's 35 years ago, and this, he said, was the thirty-fifth annual dinner he had attended. The toast was replied to by Sir John Broadbent, Dean of the Medical School. He dwelt on the obstacles now placed in the path of the student who desires a doctor's degree, and hoped for the removal of what was seriously hampering the development of the London schools of medicine. One of the privileges of his predecessors for the last six years was to congratulate a student of St. Mary's on obtaining the gold medal of the London University in either the M.B. or M.D. examinations. It was his this year, and he hoped it would become an annual custom. In proposing "The Visitors," Sir Almroth Wright began by a confession of ignorance of the ritual of such occasions, but concluded in orthodox and technical manner. Sir Arthur Conan Doyle, who in the afternoon had spoken of Romance in Medicine, now turned the tables, and in responding told of Medicine in Romance. Certain diseases were invaluable to the novelist in the destruction of the villain and the lower forms of life around which plots turn. His favourite weapons were phthisis and brain fever. He also related the criticism of a Cornish boatman: "I've read them tales of yours," said he, "and how Sherlock Holmes fell over the cliff. But I'm thinking if Holmes wasn't killed he must have been injured, because he's never been the same man since." The toast was also replied to by Surgeon-General W. L. Gubbins, who spoke with admiration of Sir Almroth Wright's work in typhoid inoculation. The health of the chairman was proposed by Dr. A. P. Luff, who paid a graceful tribute to Mr. Lane.

A NEW LYING-IN WARD IN ST. THOMAS'S HOSPITAL.—The governors of St. Thomas's Hospital have at considerable expense prepared a ward specially for lying-in cases. The authorities, being anxious to work in sympathy with general practitioners, are prepared to accept for treatment in this ward cases of anticipated difficult labour if strongly recommended for admission by a general practitioner when the circumstances of the home make hospital treatment desirable. General practitioners who may wish to avail themselves of the lying-in ward, should give due notice and find out whether there is a vacant bed for the cases in which they are interested.

ST. BARTHOLOMEW'S HOSPITAL.—The examination for the entrance scholarships which was held on Sept. 22nd and succeeding days has resulted in the following awards: Entrance Scholarship in Arts (value £100), David Constantin of the Royal College of Mauritius. Jeaffreson Exhibition in Arts (value £50), Richard G. Morgan of Newport Intermediate Boys' School. Senior Entrance Scholarships in Science (value £75 each), G. L. Kynes, B.A., of Pembroke College, Cambridge, and R. Stansfeld, B.A., of St. John's College, Cambridge. Junior Entrance Scholarship in Science (value £150), F. G. L. Barnes of St. Bartholomew's Hospital and H. L. Cronk of Jesus College, Cambridge, equal.

GUY'S HOSPITAL MEDICAL SCHOOL.—The following entrance scholarships and certificates have been awarded:—Senior Science Scholarship for University Students (value £50), Ronald C. Oxanne, B.A., Hertford College, Oxford. Junior Science Scholarships: (value £150) Arthur Lisle Punch, Preliminary Science Class, Guy's Hospital; (value £60) Alfred George Simmins, Preliminary Science Class, Guy's Hospital. Certificates: John Frank Herbert Stallman, Preliminary Science Class, Guy's Hospital; Olaf Gleeson, Walthamstow Technical Institute. Entrance Scholarships in Arts: (value £100) Alexander Beckett Bond, Bradfield College; (value £50) John Arnold Molony Alcock, Radley College. Equal Certificates: Samuel Vidot, St. Louis College, Seychelles; Albert Victor Wood, Wolverhampton Grammar School.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.—The following awards were announced at the opening of the winter session at St. George's Hospital on Oct. 1st: Pollock Prize in Physiology and Brodie Prize, G. H. Varley; Webb Prize in Bacteriology (value £30), R. F. Jones; Entrance Scholarships, E. F. W. Grellier, Downing College, Cambridge, and W. E. Waller, University College, Oxford, equal; Allingham Scholarship, L. Colledge; William Brown Exhibition (value £100), E. W. M. H. Phillips; William Brown Exhibition (value £40), C. H. S. Frankau; Brackenbury Prizes in Medicine and Surgery (total value £60), N. W. Berry; Treasurer's Prize (value 10 guineas), J. H. Newmarch; Thompson Medal, L. W. K Scargill; Henry Charles Johnson Prize in Anatomy, Percy Whitehead; Anæsthetics Prize for practical work of anæsthetics clerks, J. Ellison; Sir Charles Clerke's Prize for Good Conduct, Maurice Burnett; Pollock Prize, 1909-10, Ernest Scott.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.—The following is a list of awards for the past winter and summer sessions:—Huxley Scholarship (value 50 guineas), R. V. Bevan. Universities Scholarship (value 50 guineas), C. J. Marshall. Governors' Clinical Gold Medal and Llewellyn Prize (certificate and £25), N. C. Lake. William Travers Prize (certificate and £15), B. F. Eminson. Huxley Prize (certificate and £3 3*s.*), A. E. Hallinan. Golding Prize (certificate and £2 2*s.*), A. C. S. Cottam. The following prizes and certificates have also been awarded:—Anatomy (senior): A. E. Hallinan (prize), C. E. Williams (certificate) and J. H. Paget (certificate). Anatomy (junior): A. C. S. Cottam (certificate). Biology: F. J. Hallinan (prize), G. S. Marshall (certificate), H. Williamson (certificate), and E. S. Rowbotham (certificate). Chemistry: A. T. Dally (prize), F. J. Hallinan (certificate), and H. Williamson (certificate). Physics: F. J. Hallinan (prize), H. Williamson (certificate), and A. T. Dally (certificate). Physiology (senior): A. E. Hallinan (prize). Physiology (junior): A. C. S. Cottam (prize), H. V. Morley (certificate), and H. Wardill and E. V. Jones (equal certificates). Medicine (senior): B. F. Eminson and R. F. Eminson (equal prizes), and N. C. Lake (certificate). Surgery (senior): N. C. Lake (prize), B. F. Eminson (certificate), and R. F. Eminson (certificate). Psychological Medicine: T. Beaton (prize) and B. F. Eminson (certificate) (*proxime accessit*). Ophthalmology: N. C. Lake (prize), T. Beaton (certificate), and B. F. Eminson (certificate). Midwifery: B. F. Eminson (prize). Gynæcology: T. Beaton (prize). Pathology: I. M. Davies (prize), A. Evans (prize from lecturer), W. E. Hallinan (certificate), and A. B. Rosher (certificate). Public Health: B. F. Eminson (prize) and W. P. Harrison (certificate). Therapeutics: A. E. Hallinan (certificate). Forensic Medicine and Toxicology: I. M. Davies (certificate).

GUILD OF ST. LUKE: BIRMINGHAM WARD.—The annual festival service will be held on Tuesday, Oct. 18th, at 4.15 P.M., in the Cathedral, Worcester, when the sermon will be preached by the Very Rev. the Dean of Worcester. All medical practitioners are cordially invited to attend.

AT a meeting to be held in the Lecture Hall of the Pharmaceutical Society, at 17, Bloomsbury-square, London, W.C., on Tuesday, Oct. 11th, at 8 P.M., Mr. E. W. Lucas, F.I.C., F.C.S., and Mr. F. C. J. Bird will communicate a paper on the Fixed Oils, Fats, and Waxes of the British Pharmacopœia. Medical men are cordially invited to attend.

FREEDOM OF THE BOROUGH OF PRESTON FOR DR. R. C. BROWN.—We have on several occasions referred to the munificent gifts which Dr. Brown has from time to time made to the medical charities of Preston, and we are glad to notice that the freedom of the borough has now been conferred upon him. Dr. Brown, who is one of the oldest and most esteemed citizens of the borough, was born in 1836. The presentation ceremony was performed in the Guildhall on Sept. 29th, when he received a silver casket containing the resolution which was passed last March at a special meeting of the council:—

> In recognition of the eminent services rendered by him to the town, for his generous benefactions for the alleviation of pain and suffering, and by the kindly and effective interest taken by him in the welfare of the community, and to worthily mark the esteem in which he is held by the inhabitants of the borough.

Dr. Brown, who is consulting medical officer to the Preston Royal Infirmary, defrayed the expense of building and equipping a new operating theatre in that institution, which cost about £2700. He also presented the infirmary with a beautiful organ, a piano, and a pianola, provided a billiard-room and recreation-rooms equipped with facilities for games for the use of members of the staff, and, in addition, defrayed the cost of a conservatory for convalescent patients, revolving summer-houses for open-air treatment, and a complete X ray apparatus.

PROPOSED MEMORIAL TO THE LATE MISS FLORENCE NIGHTINGALE: A COUNTER PROPOSAL.—The movement for the establishment of a memorial in Liverpool to perpetuate the name and work of the late Miss Florence Nightingale has now assumed a definite form. The Queen Victoria District Nursing Association, which has the matter in hand, has decided that an urgent necessity exists for another district nursing home, and that such a scheme will form a fitting memorial of the valuable and enduring services which the deceased lady gave to nursing throughout the world, and to Liverpool in particular. To her the nursing movement in this city owed its initiation, and it was her direct encouragement that led the late Mr. William Rathbone to found the Queen Victoria District Nursing Association. The work has now grown to such an extent that an additional home is said to be urgently needed to enable the association to cope with the demands made upon it. To bring the matter to a practical issue the committee of the association appointed a small deputation to wait upon the Lord Mayor and request him, as president of the association, to call a public meeting for the inauguration of a memorial fund. The deputation recently met the Lord Mayor at the town hall, and after hearing a statement from the members of the deputation, his lordship acquiesced in the advisability of calling a meeting of the general public with the object of raising a fund for the building and maintenance of an additional nursing home to be named the "Florence Nightingale Home." The meeting was fixed by the Lord Mayor for Thursday, Oct. 13th, at the town hall. On the other hand, a strong feeling exists that the occasion is opportune for the establishment of better provision for the necessitous condition of nurses of advancing years. There is no burking the fact that the demand for nurses over the age of 40 years is becoming a diminishing quantity. Many of these deserving persons are paying the annual premium on their policies with the Royal National Pension Fund, and as years go on the difficulty in finding the means for continuing payment up to 55 years of age increases, and, sad to say, in many instances becomes impossible. This latter difficulty has suggested to many philanthropic people that the memorial might take the form of a "Florence Nightingale Home of Rest" for nurses of advancing years. There is much to be said in favour of such a deserving object, and it is to be hoped that the matter will be brought up at the town's meeting as a corollary to the suggested "Florence Nightingale Home." A "home of rest" would be something to look forward to by those who have no friends, and who have given the best years of their lives in the cause of suffering humanity.

Dr. Robt. Marshall, medical officer of health of Douglas, Isle of Man, has been returned at the head of the poll to the House of Keys. His programme was largely one of public health.

MANCHESTER ROYAL INFIRMARY.—A meeting of the Old Residents' Club will be held at the Midland Hotel, Manchester, on Saturday, Oct. 15th, at 6.30 P.M. This meeting will be followed at 7 P.M. by a dinner, at which Mr. F. A. Southam will preside. Any old resident who has failed to receive a notice is requested to apply to the secretaries of the club at the Royal Infirmary, Manchester.

THE Anniversary Lecture of the American Academy of Ophthalmology and Oto-Laryngology was delivered at Cincinnati, Ohio, on Sept. 19th last by Mr. Sydney Stephenson of London, who took as his subject "Sloughing Corneæ in Infants: an Account based upon the Records of 31 Cases." Mr. Stephenson was presented with a suitably inscribed gold medal by the Academy.

WELSH MEDICAL DINNER.—The seventh annual Welsh medical dinner was held on Sept. 30th, Mr. Robert Jones being in the chair. The Royal toasts having been drunk to the singing of the National Anthem and the anthem "Tywysog Cymru," the chairman proposed "Meddygon Cymraeg a Meddygon Cymru." The toast of the visitors was responded to by Mr. H. T. Butlin, Sir W. Allchin, and Mr. Goscombe John. The dinner ended with "Hen Wlad fy Nhadau" sung in chorus.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London.
- Some Considerations of Medical Education. By S. Squire Sprigge, M.A., M.D. Cantab. Price 2s. 6d. net.
- Syphilis, its Diagnosis and Treatment. By F. J. Lambkin, Col. R.A.M.C. With Preface by Sir Frederick Treves, Bart., G.C.V.O., C.B., LL.D. Price 5s. net.
- A Manual of Physiology. With Practical Exercises. By G. N. Stewart, M.A., D.Sc., M.D. Edin., D.P.H. Camb. Sixth edition. Price 18s. net.

KEGAN PAUL, TRENCH, TRÜBNER, AND CO., LIMITED, London.
- Medicine and the Church. Being a Series of Studies on the Relationship between the Practice of Medicine and the Church's Ministry to the Sick. By Sir Clifford Allbutt, K.C.B., F.R.S., A. W. Robinson, D.D., Charles Buttar, M.D., Stephen Paget, F.R.C.S., Bishop of Bloemfontein, Hon. Sydney Holland, Prebendary Fausset, M.A., Jane Walker, M.D., T. B. Hyslop, M.D., Ellis Roberts, M. Carta Sturge, H. G. G. Mackenzie, M.A., M.B. Edited, with an Introduction, by Geoffrey Rhodes. With a Foreword by the Lord Bishop of Winchester. Price 6s. net.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.
- The Surgery of Childhood, including Orthopædic Surgery. By De Forest Willard, A.M., M.D. Univ. of Pa., Ph.D. Price 28s. net.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.
- Hydrotherapy. A Work on Hydrotherapy in General, its Application to Special Affections, the Technic or Processes Employed, and the Use of Waters Internally. By Guy Hinsdale, A.M., M.D. Price 15s. net.
- Dawn of the Fourth Era in Surgery and Other Short Articles Previously Published. By Robert T. Morris, A.M., M.D. Price 6s. net.
- A Text-book of Veterinary Anatomy. By Septimus Sisson, S.B., V.S. Price, cloth, 30s. net.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. (SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.)
- A Practical Guide to the Newer Remedies. By J. M. Fortescue-Brickdale, M.A., M.D. Oxon. Price 5s. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ANDERSON, G. W., M.B. Toronto, has been appointed Clinical Assistant to the Chelsea Hospital for Women.

CARROLL, T. P., M.B., B.Ch. R.U.I., has been appointed Medical Officer of the Kilmeaden Dispensary District, Waterford.

DEVINE, HENRY, M.D., B.S. Lond., M.R.C.P. Lond., has been appointed Senior Assistant Medical Officer at the West Riding Asylum, Wakefield.

DOBSON, J. R. B., M.R.C.S., L.R.C.P. Lond., B.S. Lond., has been appointed House Physician at the South Devon and East Cornwall Hospital, Plymouth.

EDMOND, WILLIAM SQUARE, F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Resident Medical Officer at the London Temperance Hospital.

HAGAR, F. C., M.D., C.M. Ont., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

HATHERLEY, S. O., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of Health to the Urban District Council of Swinton, Rotherham.

HERON, A. G., M.D. R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Dromara District of the county of Down.

HEWER, H. M., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Market Bosworth District of the county of Leicester.

KNOX, ROBERT, M.D. Edin., M.R.C.S., L.R.C.P. Lond., has been appointed Director of the Electrical and Radio-Therapeutic Department at the Cancer Hospital.

MORGAN, D. L., M.B. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Pembroke District of the county of Pembroke.

PEACOCK, W. E., M.D., B.S. Durh., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

PETERSEN, H. C., M.D. U.S.A., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

PRICE, A. R., M.B., Ch.B. Edin., has been appointed Medical Officer to the Cardiff Board of Guardians.

SHAW, G., M.B. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Alyth District of the counties of Forfar and Perth.

SIM, J. BROWN, M.B., C.M. Glasg., has been appointed District Medical Officer by the Nottingham Board of Guardians.

SOMERVILLE, H., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Harrold District of the county of Bedford.

TRINDER, A. P., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Wadebridge District of the county of Cornwall.

WOODWARK, A. S., M.D., M.R.C.P. Lond., has been appointed Junior Curator and Demonstrator of St. Bartholomew's Hospital Museum.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

BEDFORD COUNTY HOSPITAL.—House Physician. Salary £60 per annum, with apartments, board, and washing.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund-street.—House Surgeon for six months. Salary at rate of £70 per annum, with board, lodging, and washing.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—Two House Surgeons for six months. Salary at rate of £75 per annum, with board and residence.

BRADFORD POOR-LAW UNION HOSPITAL AND WORKHOUSE.—Assistant Resident Medical Officer, unmarried. Salary £130, with rations, apartments, and laundry.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Resident Medical Officer, unmarried. Salary £160 per annum, with rooms, coals, gas, and attendance.

BRISTOL ROYAL INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments, board, and laundry.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.—Resident House Surgeon. Salary £50 per annum, with board and residence. Also Registrars and Clinical Assistants.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £75 per annum, with board and lodging.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £60 per annum, with board, apartments, and laundry.

COLCHESTER, BOROUGH EDUCATION COMMITTEE.—Assistant School Medical Officer (female). Salary £250 per annum.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon, also House Physician. Salary in each case £80 per annum, with board, washing, and residence.

DENBIGH, DENBIGHSHIRE INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with board and lodging.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—House Surgeon. Salary £120 per annum, with board, apartments, and washing.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £50, with board, residence, and laundry.

HALIFAX, ROYAL INFIRMARY.—Second and Third House Surgeons, unmarried. Salary £100 and £80 respectively, with residence, board, and washing.

HALIFAX UNION POOR-LAW HOSPITAL.—Resident Medical Officer. Salary £110 per annum, with apartments, rations, and washing.

HAMMERSMITH INFIRMARY AND WORKHOUSE, Ducane-road, Wormwood Scrubs, W.—Assistant Medical Superintendent. Salary £100 per annum, with board, lodging, washing, and attendance.

HAMPSTEAD GENERAL HOSPITAL.—House Physician and House Surgeon for six months. Salary at rate of £70 per annum, with board and residence.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with rooms, board, and washing.

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Assistant Medical Officer and Pathologist, unmarried. Salary £250 per annum, with board, lodging, washing, &c.

HÔPITAL FRANCAIS, 172, Shaftesbury-avenue, W.C.—Second Resident Medical Officer, unmarried. Salary £50 per annum, with full board and laundry.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Fourth Anæsthetist. Salary £15 15s. per annum. Also House Surgeon, unmarried, for six months. Salary £30, with board, residence, &c.

IPSWICH, BOROUGH OF.—Assistant Medical Officer of Health. Salary £250 per annum.

JERSEY INFIRMARY AND DISPENSARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and attendance.

KETTERING AND DISTRICT GENERAL HOSPITAL.—Resident Medical Officer, unmarried.

KING EDWARD VII. SANATORIUM, Midhurst, Sussex.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and attendance.

KING'S COLLEGE HOSPITAL, London, W.C.—Assistant Surgeon.

LIVERPOOL, STANLEY HOSPITAL.—Senior House Surgeon. Salary £90 per annum. Also Two Junior House Surgeons. Salary £70 and £60 per annum respectively.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80 per annum, with board, residence, &c.

MANCHESTER, ANCOATS HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board, &c.

MARGATE, ROYAL SEA BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—Resident Surgeon. Salary at rate of £80 per annum, with board and residence.

NEWCASTLE-UPON-TYNE CITY ASYLUM, Gosforth.—Junior Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, and laundry.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with board, lodging, and washing.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—Honorary Dental Surgeon. Also House Physician and House Surgeon for six months. Salary in each case at rate of 50 guineas per annum, with board and residence.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Honorary Assistant Surgeon. Also Junior House Surgeon and Junior House Physician for six months. Salary £40 per annum in each case, with board, residence, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Assistant Physician.

RADNOR COUNTY COUNCIL.—County Medical Officer of Health and County School Medical Officer. Salary £300 per annum.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Male House Physician and House Surgeon for six months. Board, lodging, and washing provided. Also Female House Physician and House Surgeon. Board, lodging, and washing provided. Also Clinical Assistant.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London, E.C.—Resident Medical Officer for six months. Salary at rate of £120 per annum, with board, lodging, and washing. Also House Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing.

ROYAL NAVAL MEDICAL SERVICE.—Fifteen Commissions.

ST. MARYLEBONE ANTI-TUBERCULOSIS DISPENSARY.—Medical Officer. Salary £250 per annum.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Senior Resident Medical Officer, unmarried. Salary at rate of £100 per annum, all found.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon for six months. Salary £80 per annum, with board, residence, and laundry.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

TIVERTON INFIRMARY AND DISPENSARY.—House Surgeon and Dispenser. Salary £80 per annum, all found.

WESTMINSTER GENERAL DISPENSARY, 9, Gerrard-street, Soho, W.—Resident Medical officer. Salary £120 per annum, with rooms, gas, coal, &c.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Act at Shrewsbury, in the county of Salop.

THE Secretary of State for the Home Department gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 37, attached more particularly to High Wycombe, Aylesbury, and Chesham County Courts.

Births, Marriages, and Deaths.

BIRTHS.

HARRIES-JONES.—On Sept. 29th, at Abington Park-parade, Northampton, the wife of E. H. Harries-Jones, M.D., of a son.

MARRIAGES.

JAMISON—NICHOLLS.—On Oct. 4th, W. Jamison, M.D., Abercynon, Glam., to Edith A. M. Nicholls, daughter of Rev. R. Nicholls, Hornchurch, Essex.

DEATHS.

HILL.—On Sept. 28th, at Bedford-square, London, W.C., Joseph Higham Hill, M.D.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

MEDICAL MATTERS IN CYPRUS.

In his report to the Colonial Office on the Cyprus Blue-book for 1909-10 Sir C. A. King-Harman, K.C.M.G., the High Commissioner, mentions that during the year the medical department of the island sustained a grievous loss in the death of the chief medical officer, Dr. F. C. Heidenstam, C.M.G., who for more than 26 years had ably administered the business of the department. He was succeeded as head of the department by Mr. R. A. Cleveland, the district medical officer of Nicosia. Apart from the prevalence of a somewhat extensive epidemic of cerebro-spinal meningitis (the report goes on to say), the general health of the island during the year was satisfactory and the general sanitary conditions have been good. Meningitis, which had broken out with virulence in 1908, continued fairly prevalent during the spring months of 1909, but as the warmer and drier weather of summer supervened the cases declined till the epidemic practically disappeared. There was a slight recrudescence of the disease in the later months of the year, but there is every indication that the epidemic wave is passing away from Cyprus and that the island will soon be free of a terrible and fatal malady which appears to defy sanitation and treatment alike. No light was thrown on the means of transmission, but it was invariably reported by the medical officers that cold and moisture seemed to be essential to the vitality of the specific microbe, while the opposite conditions of heat and dryness inhibit it. During the year under report the total number of cases throughout the island was 1080, of which 546, or 50·5 per cent., terminated fatally. Malarial fever of the tertian, quartan, and malignant types was prevalent during the year, but to a considerably less extent than in 1908, the total number of cases being only 7450, as against 10,746. A case of Malta, Mediterranean, or undulant fever was discovered during the year. This fever, which in Malta has been traced to the milk of the Maltese goat, has never before been reported in Cyprus, although the Maltese goat is in the island. The central hospital at Nicosia was enlarged during the year by the addition of a new wing for the accommodation of women and children, and a small isolated building with three beds for the reception of destitute cases of consumption marks the commencement of an effort to cope with the advance of that fatal disease. There was no extension of the Rural Medical Service during the year. There are 12 rural stations with a medical officer at each, and a total number of 11,815 patients were treated during the year. The number of inmates at the leper farm at the end of the year was 102. There were 13 admissions and 12 deaths. The chief medical officer reports that the good effects of the system of segregation, compulsory in Cyprus, are beginning to be manifested, and that the disease is on the decline. During the year a trial was commenced of the new treatment by nastin, but nothing very definite has as yet been discovered as to its therapeutic value. The children from the leper farm now living in the Home in Nicosia are 11 in number, and there are three others still in the farms not old enough to be removed. It is interesting to record that no evidence of the disease appears among them, nor was there any serious sickness or mortality. The total number of inmates of the lunatic wards in Nicosia at the close of the year was 54. The new asylum, on an excellent site a mile outside of Nicosia and near the leper farm, was commenced. When completed it will constitute an immense improvement on the existing discreditable arrangements. The absolute mean temperature of the island during 1909-10 was 66·5°, as compared with 65·5° during the previous year. The early summer was unusually hot, and exceptionally high maxima temperature readings were registered in July on Mount Troodos, the absolute maximum being 94°—4° higher than has ever been previously recorded. A minimum reading of 16° of frost was recorded at the asbestos mines, about 4450 feet about sea level. The average rainfall for the whole island was 23·80 inches, a maximum of 64·55 being recorded in the district of Kyrenia, and a minimum of 11·11 in one place in the Nicosia district. The heavy rainfall recorded in the district of Kyrenia is due to the extraordinary rains which fell at Khalevga, near the northern range. This concentration of rain at one place in the northern hills supports the contention that the Kytherea spring, as to the constant supply of which so many theories have been propounded, is really supplied from the rain-water stored in the hills.

THE GRAVE OF DR. JAMES BARRY.

To the Editor of THE LANCET.

SIR,—I wish to inform you that the other day I visited the grave in Kensal Green of that famous female, Dr. James Barry, inspector-general of army hospitals, and found it to be in the same deplorable condition as when I first saw it in 1895. On that occasion, you may remember, a correspondence respecting Barry's wonderful career was carried on for weeks in the columns of THE LANCET, and among other points the subject of her neglected grave was discussed. The sandstone slab, once erect, now lies prone on the grass. The inscription was quite undecipherable until an attendant had swept it clean with a broom and bucket of water! The grave is numbered 19,301 in the Kensal Green Cemetery Record-book, Row 6, Square 67. It lies near a by-path from a main road running parallel with the north wall. As a guide to the exact spot it may be mentioned that at the junction of this narrow path with the roadway stands a pillar erected to the memory of Harriett, the beloved wife of Thomas Rogers, Esq.

It is strange that the grave of so eminent a surgeon as Dr. Barry undeniably was should be neglected all this time. The simple inscription runs thus:—

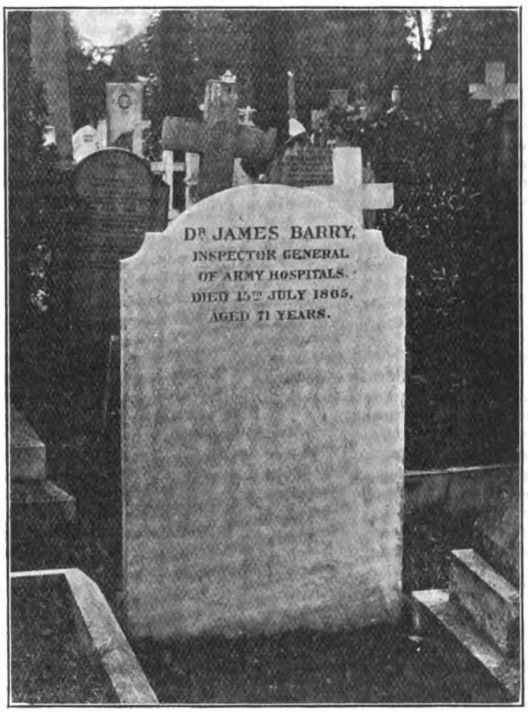
"Dr. James Barry,
Inspector-General of Army Hospitals,
Died 15th July, 1865, aged 71 years."

Moreover, it is significant that although her feminine sex had been made manifest at the inquest (by Dr. J. G. David, Dr. Mackinnon, and Dr. W. A. White, the army surgeons who were deputed by the War Office at her death to hold the inquiry), still the inscription *refers to a man*. The question, too, arises, who set up this slab? Who paid for it? Presumably whoever succeeded to her property. Why has her grave been abandoned, to my knowledge, for 15 years? It could not have been from ignorance of the fact, for her career was widely known and I myself frequently wrote to the papers, and especially to the *Broad Arrow* and THE LANCET, suggesting that a military subscription should be raised, not only to put the grave in order, but to set up some suitable memorial in marble or bronze, recording her virtues and professional attainments. Several medical officers in the services have written to me on the matter; and I fully believe that if a committee were now formed with this object in view it would meet with a ready response.

I have had the grave-stone erected and photographed for the benefit of readers of THE LANCET. I am, Sir, yours faithfully,

E. ROGERS,
Lieutenant-Colonel (Author of "A Modern Sphinx").

London, Sept. 9th, 1910.



FARMER FINED FOR ADULTERATING MILK.

AT the Guildhall police court recently a farmer living at Cheshunt was convicted and fined upon four summonses for selling milk adulterated by the addition of water. The importance of the case, as was explained by Mr. Vickery, who prosecuted on behalf of the Corporation, lay in the fact that small traders are frequently prosecuted for selling adulterated milk to the poor and urge in defence with truth that they have sold the milk as supplied to them, when they are either fined for what is not their fault, or, because they are able to rely upon a warranty of the purity of the milk given by the farmer, are acquitted, when the case goes no farther. The summons in question was, however, due to the action of

Messrs. Gibson Brothers, milk-dealers in New North-road, who had complained of the milk they received, and thus had enabled the authorities to test the adulterated supply at its source, the result being that four samples were taken from different churns on their arrival at the London terminus, which showed the addition of water in the proportions of 8, 12, 14, and 15 per cent. respectively. The suggestion put forward in defence was that the farmer was inexperienced and that his servants had been dishonest. The Alderman, however, was of the opinion that the case was a serious one and inflicted fines, with costs, amounting to a total of £37 14s.

AN INTERVIEW AND AN EXPLANATION.

To the Editor of THE LANCET.

SIR,—In the *Daily News* of last Thursday an interview with me is reported on the effects of systematic fasting. In publishing this a mistake has been made, and I write to express my sincere regret. An article appeared in the *Daily News* some weeks ago describing a fast cure undertaken by the writer. He mentioned certain very interesting facts, and suggested that a committee of medical men should watch a number of selected cases and report. Now I am much interested, having had 18 such cases during the last two and a half years, and so I got in touch with the writer of the article. Last Wednesday a gentleman called on me from the *Daily News* by appointment, and I understood it was to have been a talk preliminary to the formation of this committee of inquiry.

I greatly regret my carelessness in not stating the terms of this interview quite clearly, and I am sure that the fault is entirely mine.

I am, Sir, yours faithfully,

Welbeck-street, W., Oct. 4th, 1910. HECTOR MUNRO.

MEDICAL WOMEN IN INDIA.

A MEETING of the United Kingdom Branch of the Association of Medical Women in India was held on Sept. 28th to meet Miss A. M. Benson, M.D., First Physician of the Cama Hospital, Bombay, in order to hear from her some proposals as to the formation of an organised female medical service for India, and to receive information on the present working conditions of the Dufferin Fund. Mrs. Scharlieb, M.D., presided. The meeting was unanimously of the opinion that the secretary of the Countess of Dufferin's Fund should be a qualified medical woman; that at least one qualified medical woman should have a seat on the central committee of the Fund (at present, except the President, Lady Minto, no woman is on the committee); and that an efficient service of medical women for India should be organised. For the furtherance of these objects it was resolved that the Secretary of State for India and Lady Hardinge (who is the President-Elect of the Dufferin Fund) should be asked to receive some members of the association in order that a brief explanation of the urgency of the need in India for an efficiently organised service of medical women may be set before them.

A MODIFICATION IN THE METROPOLITAN WATER-RATE, AND A HINT TO LANDLORDS.

To the Editor of THE LANCET.

SIR,—It is important for your readers to know that the London Water Board is now levying a special rate on dentists; this has been "sprung" on householders without any notice. It dates from April 1st, and the first demand is for the two quarters extending from that date to Sept. 30th. The Board declines to recover the rate from dental surgeons who are sub-tenants; and it will therefore be necessary in letting consulting-rooms to make provision for this contingency, because the amount charged a householder may suddenly rise to an extent which was not anticipated. At present it varies from £1 to £3 per annum per dental surgery; but this is likely to be further increased. Being specially a rate levied on every dentist, it would be fair that a clause be inserted in every agreement that this rate, whatever it be, should be refunded to the householder by the sub-tenant. That I should do in my own case were I having an agreement drawn up *re* a consulting-room.

I am, Sir, yours faithfully,

Sept. 29th, 1910. WEST-END.

WANTED, SUGGESTIONS FOR TREATMENT.

To the Editor of THE LANCET.

SIR,—Can any of your readers advise me as to treatment for the following case? A female, aged 28 years, has cystitis due to B. coli which has lasted some months; the urine has no albumin, but a few pus cells have been present from time to time. She has been treated with helmitol and urotropin, and for about a month the B. coli disappeared, but have since returned. The uterine functions are normal, and there is no evidence of renal calculus and no calculus could be seen with the X rays. The uterus and appendages are normal. She is losing weight and a different form of treatment is imperative.

I am, Sir, yours faithfully,

A. BRODIE CREAK, M.R.C.S. Eng.

Balholm, King's Heath, Birmingham, Sept. 30th, 1910.

S.B., M.R.C.S., &c.—The suggestion of our correspondent that the digested bacilli of swallowed sputum in phthisis might possibly form in the blood of the infected individual an antibody which would increase his resisting power and bring about a cure of the disease is a view of the possibilities of vaccine therapy which is both novel and comforting.

M.B., B.C.—The insurance is a protection of the employer against the claims of the employed, and has nothing to do with the matter. The tradesman who summoned our correspondent appears to us to be liable for the charges, and we believe that this view would be supported by most county court judges.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1910:—

Oct. 10th–15th (London).—Town Planning Conference.
" 13th–15th (Paris).—Eleventh French Congress of Medicine.
" 16th–22nd (Barcelona).—First International Spanish Congress of Tuberculosis.
Nov. 7th–12th (Cape Town).—Twelfth South African Medical Congress (1910).

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

FRIDAY.

CLINICAL SECTION (Hon. Secretaries: Albert Carless, James Galloway): at 8.30 P.M.

Dr. George Oliver: Two New Methods (Auscultatory and Visual) of Reading Arterial Blood-pressure.
Mr. L. V. Cargill: Acromegaly associated with Tumour (Cystic?) of Pituitary Body.
Mr. Douglas Drew: (1) Rupture of Cord of the Brachial Plexus; (2) Separation of the Lower Epiphysis of the Humerus with Displacement; (3) Tumour of the Rectus Abdominis in a Child.
Dr. H. D. Rolleston: Multiple Fatty Tumours (? Adiposis Dolorosa).
Mr. Albert Carless: Early "Dercum's Disease."
And other cases.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8 P.M., General Meeting. 8.30 P.M., Opening Address:—Mr. C. Symonds (In-coming President): The Treatment of Chronic Abscess of Bone by Means of Metal Drains (illustrated by patients, preparations, and radiograms). A Discussion, to be opened by Sir Watson Cheyne and Mr. A. E. Barker, will follow.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—8.30 P.M., Dr. H. D. Rolleston: Acute Arthritis of Doubtful Origin.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22 Chenies-street, W.C.

MONDAY.—4 P.M., Mr. J. E. R. McDonagh: Clinique (Skin). 5.15 P.M. Lecture:—Dr. N. Tirard: Some Cases of Diabetes.
TUESDAY.—4 P.M., Dr. E. Wynter: Clinique (Medical). 5.15 P.M. Lecture:—Dr. G. Pernet: Syphilitic Headaches.
WEDNESDAY.—4 P.M., Mr. A. P. Gould: Clinique (Surgical). 5.15 P.M. Lecture:—Mr. W. Stuart-Low: The Nasal and Operative Treatment of Asthma.
THURSDAY.—4 P.M., Dr. L. Guthrie: Clinique (Medical). 5.15 P.M. Lecture:—Dr. F. J. McCann: On Some Common Mistakes in the Diagnosis of Cancer of the Uterus.
FRIDAY.—4 P.M., Dr. D. Grant: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M. Opening Address.—Dr. D. W. C. Hood, C.V.O.: Specialism in Medicine.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operation. 11.30 A.M.: Demonstration in Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Clinical (with cases).
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 12.15 P.M. Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine (Lecture I.).
THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.39 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M. Lecture:—Mr. Baldwin: Practical Surgery (Lecture I.).

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Clinical (with cases).

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Batten: Cerebral Disease.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Batten: Tabes Dorsalis.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3.45 P.M., Lecture:—Mr. C. Nourse: External and Middle Ear.

T. JOHN'S HOSPITAL FOR DISEASES OF THE CHEST, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Erythema.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. E. S. Bishop: Appendicitis. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.),

TUESDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (12th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (13th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (15th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 5th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 29	29·84	S.W.	...	85	66	56	60	63	Cloudy
,, 30	30·05	S.W.	0·04	79	65	54	54	55	Overcast
Oct. 1	30·13	S.	...	108	70	54	57	57	Fine
,, 2	30·01	S.W.	0·29	115	72	54	53	56	Cloudy
,, 3	30·06	W.	0·04	90	62	56	53	56	Cloudy
,, 4	30·49	W.	...	89	66	50	52	54	Cloudy
,, 5	30·49	N.W.	...	86	64	53	54	55	Fine

Communications, Letters, &c., have been received from—

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An Address
ON
THE EDUCATION OF THE STUDENT OF MEDICINE.

Delivered at the Opening of the Winter Session (1910–11) in the Medical Department of the University of Leeds,

BY F. HOWARD MARSH, M.A., M.C. CANTAB., F.R.C.S. ENG.,

MASTER OF DOWNING COLLEGE, AND PROFESSOR OF SURGERY IN THE UNIVERSITY OF CAMBRIDGE.

MR. VICE-CHANCELLOR, LADIES, AND GENTLEMEN,—I am aware that I am standing in a position of much responsibility. But when your Council did me the honour of inviting me to present the prizes and give the introductory address to-day I felt that I ought not to decline. Duty must be done. But there was a consideration that at once presented itself to my mind which made the task I was undertaking thoroughly congenial. I remembered that I should be speaking in Leeds, where one of the most interesting and worthy of the men whose names stand clearly inscribed on the pages of the history of our profession lived and worked, and where his successors have made the medical department of the University of Leeds a foremost centre for the cultivation of the science and art of surgery.

WILLIAM HEY.

The seniors among you must be familiar with all, and with much more than I can tell about William Hey, but in speaking to the young pilgrim warriors who set out to-day, I wish, as one who has borne the burden and heat of the journey, to tell what I seem to have learned, and the conclusions which I have formed touching those things about which, when the time for a retrospect shall come, there may be as much as possible to remember with satisfaction, and as little as possible to regret. And for this purpose the life and personality of William Hey furnish me with a most suitable text. Even advanced students know Hey only as the inventor of a saw which is never used, and an operation which is never performed. Let me try to say more than this about him.

Hey was one of three brothers, each of whom attained high distinction. John, the eldest, born 1734, came up to Cambridge, was eighth wrangler, and, later, a Fellow and Tutor at Sidney-Sussex College. In 1780 he was elected as the first Norrisian Professor of Divinity, and William Pitt attended his lectures on morality—a training of much value to a politician, as we shall all no doubt agree, not only in Pitt's time but at the present day. John became a Doctor of Divinity, and wrote several treatises, which went through three editions. To this day he is high on the list of Cambridge worthies.

Richard was also a Cambridge man. He was third wrangler and won the Chancellor's medal in mathematics in 1768, became a Fellow and Tutor at Magdalene, and Esquire Bedell, and took the degree of LL.D. He wrote three dissertations—on the pernicious effects of gaming, on duelling, and on suicide, for each of which he received £50 through the University from an anonymous donor. These essays, after the manner of the time, were compositions in which the subjects were elaborately worked out under a number of heads, and from every point of view. They display much ingenuity and close argument, and are written in a clear, copious, and robust style. He shows not only that these things are wrong in every aspect in which they can be regarded, but that they are foolish and indeed contemptible. It seems certain that no one who reads them with an open mind will ever game, fight a duel, or commit suicide again. He also wrote a novel. Richard Hey was the kind of man one would have much liked to know. His conversation must have been interesting and entertaining. He attained the ripe age of 91.

Your William Hey, born in 1736, had from the first a single eye to his profession, for he lost his right eye when he was four years old. This must have been a heavy handicap, but the calamity was diminished by the circumstance that it occurred in infancy, so that the eye which was left had time to prepare itself for its heavy responsibilities. This is not the occasion for alluding to Hey's individual contributions to surgery: their value is well known in Leeds and widely recognised elsewhere. But of the man himself, I should like to offer some estimate for which our business to-day affords ample justification. After having been a student at St. George's Hospital, he came at once to Leeds, and was soon engaged in active practice. He was brought in contact with that extraordinary man, Joseph Priestley, the discoverer of oxygen, who had become in 1767 Presbyterian minister of Mill Hill Chapel in your town, and through him he was elected a Fellow of the Royal Society in 1775. In 1767 Hey was prime mover in founding the Leeds Infirmary, where afterwards he was senior surgeon for 39 years—from 1773 to 1812. He was twice Mayor of Leeds. In this office he so vigorously denounced vice and profanity that the populace burnt him in effigy, and threatened him with personal violence. He was a skilled musician, and for some time President of the Leeds Literary and Philosophical Society. He was a sound patriot, for he had 11 children. He died at the age of 83, in 1819. His works published in 1810 are written in language which is so clear, direct, graphic, and vigorous, that to this day it is a genuine pleasure to read pure English turned to so good an account. He owed the respect in which he was held for so many years, not only to his ability and culture—these indeed never suffice—but to his honourable and high character. He may be taken as an example of the man whom Horace, in one of the gems of classic literature, has pictured in the lines which he addressed to Aristius Fuscus, and which every young man would do well to bear in mind:—

> "Integer vitæ scelerisque purus
> Non eget Mauris jaculis, neque arcu
> Nec venenatis gravida sagittis
> Fusce, pharetra."

Of these lines Sharp has given the following translation:—"Fuscus, he who hath integrity of life and is free from wickedness needs not Moorish javelins, nor bow, nor a quiver laden with poisoned arrows." For (he adds) in the Sabine wood a wolf fled me, though unarmed.

We must without hesitation assign to Hey a place on the list of those who have left great names in English surgery, beginning with Richard Wiseman, and coming down to the most renowned amongst them all, Lord Lister. Reckoning that a surgeon is at his prime at the age of 50, we may, I think, take the following names and dates as correct: Wiseman 1672, Cheselden 1738, Pott 1764, Hunter 1778, Hey 1786, Astley Cooper 1818, Lawrence 1833, Syme 1849, Paget 1864, Lister 1877. To be one of ten worthies distributed over a period of 205 years is assuredly no mean distinction. With Hey before him no Leeds man can, if he fails or goes astray, plead the want of a high ideal that he might have followed.

It must, I think, be interesting at the present day to recall for a moment who our predecessors have been, and the conditions under which they worked. What were the qualities which brought these ten men, each in his generation, into the first place, and set them apart—*longo intervallo*—from the rest who, though good men in their day, have now sunk deep into the forest shade?

First of all they were men of originality and enterprise. It could not be said of them that—

> "With packhorse constancy they kept the road
> True to the jingling of their leaders' bells."

They were leaders, not followers. They were genuine students, who aimed at advancing and improving the surgery of their day without the low ambition of personal notoriety, or over much financial success. Wiseman, Astley Cooper, and Lawrence were the handsome men of the group; Cheselden, Hey, and Lawrence probably the best read and most accomplished. Others were from the first so absorbed in the work immediately before them that they had no time to wander in the shady groves of the *Academia vetus* and listen to the teaching of Plato. They picked up their own sterling philosophy, and acquired not sham but real culture as they went along. Many a fop and many a prig in philosophy or the fine arts would have found his true level with, for instance, Sir James Paget, whose society was sought by the most cultured people of his day. Hunter had no accomplishments, nor did he desire them; at least we know, from what occurred at Oxford, that an academic career had no attractions for him.

It is often asked how the early surgeons could have

operated without anæsthetics. That they did so is claimed by the ignorant and uncharitable as a proof that they were callous and brutal. It is easy to prefer such charges against the pioneers of what surgery has now become, or for the anti-vivisectionists of our time to bring accusations against such benefactors of mankind as Paget and Lister. The truth is they know not what they say. History will assign to them their proper place when the day of reckoning comes. But to those who, in good faith and Christian charity, ask how these things could be done the answer is that the old surgeons were impelled by what they witnessed of the sufferings caused by disease—and of which we of to-day can have only a faint conception—to find, if possible, some means of relief; that they attained in many instances a reassuring and encouraging measure of success; and that they were well aware that they were laying stepping-stones which their happier successors should tread.

William Hey, junior, was, like his father, a man of ability and culture. He will be remembered chiefly for his treatise on puerperal fever. Of him and of the able and conscientious men who were associated with him in the study of this dread disease, which played such havoc in Leeds and its neighbourhood in 1809 to 1812, we can only say that the time was not yet. They could only study results, and all their efforts to understand the nature of the disease were null and void, and their best attempts at treatment can now only affright, and fill us with distress. The case is but another example of the truth that great discoveries—that is, excursions into the hitherto unknown—must wait till the agency through which alone they become possible has been provided. Without wings, however keen the gaze, the point-to-point flight cannot be made. It was so with William Hey, junior, and his colleagues. The main questions around which their discussion circled were whether the disease was, or was not, infective; then, if it was, how did it arise. The search was close and earnest, but it was foredoomed to failure. Something was wanting before the riddle could be solved. How often on like occasions has that something been a contribution from one of the other sciences—in astronomy, a telescope or a photographic plate; in pathology, a microscope or an X ray picture; in physiology, an electric current or a chemical agent such as chloroform? In the instance before us matters had to wait for another 60 years, until the microscope was so far perfected as to furnish the means for new methods of research, and to render Pasteur's investigations possible. After that Lister could follow the same lines of close observation and reflection which Hey and his contemporaries had pursued, and was able to succeed where they had failed, and so the tremendous event, the discovery of the nature of infection in surgical practice, was attained.

Does not all this remind us that there can be no partition walls in the field of intellectual progress; that all the sciences are but parts of one stupendous whole—

> "Children of divers kind
> We, sucking on earth's natural bosom, find,
> Many for many virtues excellent.
> None but for some, and yet all different."

Many dialects, yet a common language. May not the devotees of science well exclaim with the Galileans, How hear we every man in our tongue wherein we were born? Parthians and Medes and Elamites—and the rest—we do hear them speak in our own tongues the wonderful works of God. Are we not, indeed, come we whence we may, pilgrims travelling to the same shrine, where the cry is still, as it was with Goethe—"Light, more light!" and where we hear, ever in clearer and clearer tones, the responsive mandate, "Let there *be* Light."

PRESENT POSITION OF MEDICAL EDUCATION.

I now turn to the present position of medical education, and I think that even a cursory examination of this supremely important question must give rise to serious misgivings. As medicine has now become a department of biology, its pursuit necessarily demands a sound acquaintance with the broad principles of those departments of biological science with which it is intimately connected, which are, in fact, the foundations on which it rests—chemistry, anatomy, physiology, and pathology. Here are four sciences each of which has a horizon to which no limit can be assigned, and which is constantly undergoing expansion. Every year, to their honour be it said, the pioneers of all of these sciences are forging ahead and initiating new methods of investigation, so that the work is always increasing in novelty, complexity, and quantity. Moreover, things are at first seen, as it were, through a glass darkly, and new facts cannot at once have their proper places allotted to them, or be brought into harmonious relation with their environment. They are therefore difficult to teach, and infinitely more difficult to learn. In other words, in the borderland between the former and the new, the material in hand is plastic and has not as yet had time to crystallise into its ultimate form. Now, the difficulty which the student experiences is to keep pace with his subjects. He does not doubt that lecturers are master hands, but he finds that the material dealt with covers so much ground, and is, as I have said, so novel and complex, that he is conscious that he is being left behind. It seems to him that his teachers are like the giants of old and in their attempts to scale the heavens are heaping Ossa on Pelion, and inadvertently crushing his prostrate form beneath the superincumbent weight. And may it not sometimes be that recent advances are so seductive to the teacher that they tempt him to introduce them to his class, with the result that he does not dwell with sufficient emphasis and repetition on the more prosaic principles of his subject, albeit they are all that the embryonic student can fully grasp or even partially understand. A class which has passed through one of these preliminary courses may be divided into the abler and the average man. The former in many instances has acquired an amount of knowledge which does him infinite credit. But it is knowledge of a particular kind. It is almost all on the surface. It has not had time to eat its way in and become deep-set. It is very largely a question of mere memory. Take such a man off the line along which he has been rapidly conducted, and turn the subject round, and present it in a fresh aspect, and he is soon beyond his depth. It becomes obvious that though he has remembered much the knowledge has not become his own; he has not, indeed, had leisure in which to read, mark, learn, and inwardly digest it. He has not, in the words of Richard Wiseman, "been able to set some time apart for reflection upon his labours."

With the average man the whole business has from the first been hopeless. His mind is not a sensitive photograph plate on which a short exposure, however good the lens, will secure a clear and abiding picture. He has been outpaced, and, with all sympathy be it said, he has been spending many an hour *strenue nihil agendo*—in strenuously doing nothing. All along he has been conscious of a mental surfeit, and as soon as he has happily got through his examination he turns from his depressing task with a feeling of profound relief, and discards his subject without even the forms of regret.

I am anxious to avoid anything like exaggeration, and particularly to keep, with a good margin, clear of even the appearance of criticising teachers whose only fault is that they cannot achieve the impossible. I desire only to raise the question, once again, whether some modification of the present system is not urgently required.

I know that a large number of the ablest teachers of the day are anxious that a satisfactory solution should be found. The problem is how to cut the garment according to the cloth—how to arrange the work so that the curriculum of the student of medicine shall lead to satisfactory results. We have to remember, *Ars longa, vita brevis*. Professor E. H. Starling (and where can we find a higher authority?) has put the matter in a nut-shell (let the medley of metaphors be forgiven) when he says you cannot put a quart of fluid into a pint pot.

The difficulty which we have to face is of no recent origin. On the contrary, it is one of the oldest in the whole field of education. Confessing that no one can learn everything, it becomes a question of *selection* and of determining in any given case what is really *ad hoc*, what is the particular knowledge which the student requires, and how much of this he can be taught in the circumstances in which he is placed.

But this is not the only matter before us. We have to consider the result of the present system, not merely in reference to what the student has learned, and will retain in a serviceable form for future use, but what kind of mental training he has been passing through, and what effect his work has had on his mental evolution. Is not this a matter of supreme importance? Is there any calling which demands a wider diversity of well-matured mental qualities,

a more many-sided education in the true sense of the word, than ours? How can a profession which has its foundations laid in the four sciences which I have mentioned, and which constantly avails itself of them and uses their methods, be adequately followed by anyone who has not had a scientific education, whose higher mental faculties have not been judiciously developed and cultivated? As practitioners of medicine we are frequently called upon to deal with problems which are in a high degree complex, in which the underlying facts are numerous, widely diverse, and often, as it seems, contradictory, while our knowledge is, as we are often painfully aware, rudimentary, so that we are working in dim twilight, or even wholly in the dark. Moreover, however unconscious or forgetful of it we may be, we are invariably face to face with facts which always claim to say the last word. In the practice of the law facts are as clay in the hands of the potter; in theology facts and dogmas are often convertible terms; but with the surgeon, as with the engineer, facts are stubborn things. Let the engineer build too flimsy a bridge, or the surgeon overlook a fracture or an appendicitis, and the fact will avenge itself. In both cases alike the penalty will have to be paid in coin of the surgeon's regret and of the patient's injury. If all this is true, does not the training of the student of medicine claim a foremost place? Mere information is, so to say, but raw material and of little value to the student unless he can manufacture it for his own use. But how can he do this when he is constantly in active pursuit, when, to put it in another way, he is being constantly overfed with material which he cannot assimilate? May not his condition be fitly compared to a round-celled sarcoma in which only disorderly growth, but no development is taking place? Instead of developing his powers of observation, which in most of us, when we compare them with those of a portrait painter, a naturalist, a Red Indian, or many of the birds and lower animals, are conspicuously rudimentary and defective; instead of forming the habit of thinking closely over what he has observed; instead of learning to collect, analyse, and arrange evidence, and acquire a judicial habit of mind, we see him leaving his higher faculties in abeyance and surcharging his memory with what are to him mere crude and amorphous details—*rudis indigestaque moles*—with the result that in hours of depression he emphatically endorses the statement of the Preacher that "much study is a weariness of the flesh."

IMPORTANCE OF ESSENTIALS.

All this forces itself on my mind alike at examinations and in class-teaching in surgery. I find that men who are quite obviously intelligent and serious students show an altogether deficient acquaintance with, for instance, the essentials of surgical anatomy. They evince little sense of proportion and seem to have paid as much attention to the interlacement of small nerves in the side of the neck as to the landmarks in the middle line; to the details of the origin and insertion of the abdominal muscles as to the anatomy of inguinal hernia; to the anastomosis of arteries around the knee as to the relative position of the important structures in the popliteal space, or the mechanism of the knee-joint, with the result that, having tried to learn everything, they have mastered hardly anything—anise and cumin seem in their eyes to be of very much the same value as the weightier matters of the law. Was not Sir William Turner the foremost anatomical teacher of his day because he drove home the principles of his subject in carefully selected examples, and because he kept to essentials and largely eschewed detail? His idea seemed to be that, as it was impossible to teach the whole of his subject (and that if he could a great deal would be entirely useless to medical students), his proper course was to take what was essential and sternly leave the rest. Under this regimen his pupils had time to assimilate what he taught them, and the result has been that many men who passed through his hands have in their turn become distinguished teachers of the subject. I have heard that Lord Leighton, when a young man, on returning from Italy, brought ten copies of pictures which he had made in a fortnight. Asked how he could possibly have done so much in the time, he replied that he had thoroughly learned the first principles of painting.

In alluding to this question I cannot refrain from saying that the present rate of rejections, taking into account the, to my mind, unquestionable fact that the students of to-day stand at a high level of intelligence and industry, is very notable. The rejections in anatomy and physiology at the conjoint examinations of the two Royal Colleges in the last five years have been between 39 and 47 per cent.; last year they were 45 per cent.; while those in surgery were nearly 50 per cent. Ought we not to inquire how these figures can be explained? How is it that little more than half the number of students who present themselves have reached the standard of a pass examination? I was, myself, for some years an examiner in anatomy and in surgery for the Royal College of Surgeons of England, and I am convinced that the standard is not at all too high. I venture to say that the high rate of rejections is, at least in some degree, due to the circumstance that men have been from the first struggling under the incubus of an overloaded curriculum: and I know I am merely agreeing with many prominent leaders that if we could throw out some ballast the ship would make better ocean way. Could there be some adjustment, the teaching of the preliminary subjects would become in the highest degree valuable to the student of medicine; for he would not only have had the foundations of his work laid on a broad and lasting foundation, but he would have been made, in a real sense, a student of science. The difficulty has for some time attracted general and earnest attention, and the authorities concerned have taken the matter long in hand. It is with this movement that, in all humility, I desire to associate myself. The time seems to have come for taking the bull by the horns, and considering where the line should be drawn, by general consent—is this really beyond the wit of man to achieve?—between that which is of primary and that which is of secondary or even of third-rate importance, and then for concentrating the attention of the student on the former only. Does not every great pleader, in addressing a jury, dwell on chief considerations, and by frequent, or as it may seem tiresome, repetition drive home the main points of his case instead of watering them down, and washing out their colour by mixing them up with too many details? Does he not know that his success lies, not in an elaborate argument, in which, like Burke, he goes on refining, but in his being able to make the jury see clearly three or four points which, as he strives to convince them, entitle him to a verdict in his client's favour?

PROPOSED CONFERENCE.

Might not a medical education conference be held at which all who are interested should be represented. No one can be more conscious of the difficulties of the situation than myself. Yet I believe there is good ground for hoping that great advantage might be secured if a conference could be held. The objects of the conference would be to consider the question of the education of the student of medicine as a whole; to recognise limitations necessarily imposed by the period beyond which the curriculum cannot be extended; to determine the part which each preliminary subject should take; and to agree as to what is essential and what can be dispensed with without real loss, or even with advantage.

There are some considerations which I think would have a weighty influence in promoting the success of such a conference:—

1. The mere meeting together of the representatives of the general body of teachers would in itself emphasise the fact that the object in which all alike are engaged is, not the training of specialists in the individual sciences concerned, but the education of students of medicine.

2. As medicine has now become a department of biology, and as the responsibility of its leaders to the community is yearly increasing, are they not justified in making, are they not indeed constrained to make, an earnest appeal to specialists in other subjects for their generous assistance, seeing that without their coöperation the adequate education of medical students is no longer possible?

3. Each teacher, subject only to the limitations imposed by the object in view—medical education—would be absolutely independent and in every sense unfettered.

4. Each would enjoy the satisfaction of knowing that he could make his teaching thorough, and turn out students who had acquired not merely an evanescent smattering but a sound and permanent grip of the principles of their subject. To take anatomy, the subject on which, as a former teacher, I may venture to speak, I cannot but believe that professors in the universities, and lecturers in the medical schools, would find this amended programme a

great relief. Not being medical men they would welcome some definite information as to the lines on which their teaching of the subject would be most valuable, and as to the areas which would furnish the best illustrations for medical purposes of the principles they desired to enforce.

5. Demonstrators of anatomy would have constant opportunities for going beyond mere tedious anatomical facts to their meaning as to function and their bearing on medicine and surgery. The value of such teaching would be at once apparent when the student began his clinical work, and when a sound knowledge of anatomy is essential. To speak plainly, is it not a farce to discuss femoral hernia, flat foot, or the deformity of the knee-joint in tuberculous disease with a student who has never thoroughly known or who has forgotten his anatomy?

TEACHING OF SURGERY.

As to surgery—I will not venture a word as to medicine—is the teaching of this subject in all instances well organised and sufficiently methodical? My feeling is that this is not the case. Surgery, as I have already said, makes special demands on the powers of observation, a trained eye, a delicate touch of hand, skilful manipulation, a familiarity with the use of instruments and appliances, and the technicalities of aseptics, while some straight hints to the student as to his duties and responsibilities when he becomes a clinical clerk or dresser are urgently required. Moreover, is it not advisable that pains should be taken to fully instruct the beginner in the principles which underlie the collection and use of evidence, to emphasise the difference between the forms of evidence—between the direct and the circumstantial—and to show in what cases the one or the other, or a combination of the two, must be depended on, and what difficulties have to be met, and what pitfalls avoided? Most men are naturally very unobservant. It is startling to see what they can overlook. How true it is that the eye can see only what the eye brings the means of seeing; how real is the danger that he who is untrained to observe critically, and discriminate accurately, will see what he is looking for. Before he begins the study of medicine and surgery, should not the student pass through a preliminary course in which the matters I have briefly alluded to are thoroughly and systematically taught? Would he not keenly appreciate such instruction, and would he not find it of inestimable value in the out-patient rooms, the wards, and the operating theatre? As all these things are necessary ought the student to be left to pick them up haphazard? Would such a happy-go-lucky proceeding be allowed in the instance of a lieutenant on board a cruiser, or an apprentice at Elswick? Yet are not such cases to all practical purposes the same?

I pass over the out-patient room and the special departments, for I believe they are, in all important medical schools, admirably conducted, and that they contribute, in a degree that can hardly be exaggerated, to the education of the student.

In the wards, though there are many exceptions, teaching could with great advantage be somewhat remodelled. Every hospital ward teems with material for clinical teaching. Every case serves as a text. And it is in the wards that the student should gain a very large share of his professional education. The surgeon in charge—and the more eminent he is the more will it be the case—cannot possibly give much time to systematic teaching. Would not three hours a week be an outside figure? To provide him with thorough and ample clinical instruction should not the student, fresh from the preliminary class, pass into the hands of a ward tutor? This appointment has been made already in some hospitals. The ward tutor is a junior teacher. He has a class limited to ten. These he instructs in a suitable number of cases, in note taking, surgical anatomy, symptoms, methods of examination, special appliances, and so forth. His aim is to be thorough, and to work out the cases he selects with deliberation and completeness. Such work as this would not only interest but educate a man, while there can be no doubt that it would be highly valued by every intelligent student.

The work of the tutor when properly and loyally performed would not interfere with cases in which the visiting surgeon was interested, or with his authority, to the wards. Such cases as he desired would be left entirely alone. The tutor would take only cases in which the surgeon, for teaching purposes, did not concern himself; nor would this be any drawback, for the simplest cases, after all, are the most suitable for the instruction of beginners.

A special word to those who from to-day are to have the University of Leeds for their *Alma Mater*. To those who have won the prizes which it has been my pleasant office to present, let me say this. You must recollect that there has been a "proxime accessit" close on your heels. You have won your first obstacle race, but you will find many more in front of you as the years roll on, and if you are still to win you must keep in mind the fable about the hare and the tortoise. Those who have not won this time no doubt mean to do so on the next occasion. For them the fable must be Bruce and the Spider. But let both sides note that prizemen often fail, and that men who do not get prizes often succeed, later on. All must remember that duty is the stern daughter of the voice of God, and that the best asset for any man is a high and honourable character.

INDUSTRIAL TUBERCULOSIS.[1]

BY T. D. LISTER, M.D. LOND., F.R.C.S. ENG.,

PHYSICIAN TO THE MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, HAMPSTEAD; VICE-PRESIDENT OF THE LIFE ASSURANCE MEDICAL OFFICERS' ASSOCIATION.

TUBERCULOSIS is a disease brought about by infection among those predisposed to it, whether such predisposition arises from inheritance, environment, or pre-existing disease. It does not attack the robust unless the dose of infection or its virulence is excessive. Wealth protects against consumption by providing the food, clothing, and leisure, and especially the knowledge, housing, and environment which render the ubiquitous bacillus comparatively impotent. Poverty, overcrowding, fatigue, malnutrition of every kind, with ignorance, indifference, and other attendant evils, physical, social, and moral, are its universal allies.

The industrial classes suffer from consumption at least twice as heavily as the leisured classes, and in many occupations the penalty paid in phthisis mortality is from five to ten times that of the phthisis mortality falling upon those who do not toil. The conditions under which many industries are carried on, and in which a large proportion of workers live, are therefore powerful agents predisposing to tuberculosis.

The considerations which form the bulk of this paper are based upon a study of the mortality of phthisis in various groups of the population of England and Wales. In all studies of statistics which deal with the occupational mortality from phthisis, it must always be remembered that the naturally weak will tend to leave or to avoid those occupations which make demands upon great strength or activity. They tend also to drift into the ranks of those engaged in casual and light labour. Alcohol, no doubt, is also responsible for recruiting these ranks, as well as being a prevalent cause of death in many of the same groups, which, it will be found, show a high mortality from consumption.

Overcrowding and low wages go hand-in-hand with casual labour. Both these conditions have frequently been shown to have a close relation with high phthisis mortality. They have come to be accepted as inevitable and normal in many grades of workers in our civilised communities. The political economy of this part of the question is a matter for the statesman rather than the physician, and I do not intend to touch upon it further here, beyond saying that it is not for medical men to look upon it as a satisfactory state of things or one which should be regarded with complacency.

Phthisis as a disease of occupation can be considered firstly as to its comparative mortality in different occupations, and secondly as to the comparative percentage of deaths it causes in different occupations.

Firstly, and this is the only accurate way, we can compare the actual mortality from phthisis in different occupations by figures calculated for the purpose of comparison from the actual death-rates per 1000 living.

Secondly, we can take the point of view which compares the percentage of the total deaths which occurs from phthisis in one occupation with the percentage which occurs in others. This comparison, of which medical authors have always been particularly fond, must be used with discretion, and is liable

[1] This paper is based on part of a report on "Phthisis as a Disease of Occupation," presented to the Second International Congress on Industrial Diseases, Brussels, September, 1910.

to lead to wrong conclusions. For instance, if an occupation be healthy as regards phthisis, but unhealthy in regard to other respiratory diseases, and perhaps to many other causes of death, phthisis would form a small proportion of the total causes of death, and yet the number per 1000 living in that occupation who would be likely to die from phthisis might be greater than the average death-rate from phthisis of all classes per 1000 living. But it is an interesting figure when calculated as a percentage, in that it suggests for the particular occupation under consideration the proportion that will die of the disease, and in some groups affords a legitimate basis for comparison. On the other hand, if an occupation be particularly unhealthy as regards consumption and healthy as regards other causes of death, it is clear that phthisis will present a high proportion of the total causes of death, and yet the actual death-rates from phthisis in that occupation be no greater, or even less, than the average death-rate from phthisis per 1000 living, and the total death-rate of the occupation may be even less than the average total. In the following tables the occupations are classified in comparison with all males taken together. The figure used as a basis for comparison is, for all males from all causes taken together, 1000. This figure 1000, it must be clearly understood, is simply an expression as a basis of comparison; it can be divided into its component parts, the various causes of death, and in the statistics on which this paper is founded phthisis is represented for all males by the figure 186. In other words, of 1000 deaths of all males from all causes 186 are due to phthisis (18·6 per cent.).

Another useful comparative figure is that of the agriculturist, which is, for all causes, 602, and for phthisis 85 (14 per cent.). The agriculturist is, as a labourer, among the worst paid, worst fed, and worst housed of the working classes, yet his largely outdoor occupations and freedom from overcrowding, and hence lessened intensity of infection, render his figure of comparative mortality from consumption a standard for measurement of other occupations.

In the following tables each group of occupations is arranged in the order of the comparative mortality from phthisis. The percentage of deaths from phthisis have also been calculated and placed in a column by the side of the comparative mortality figures. The comparative mortality figures are those given in the official returns.[2]

GROUPS OF FIGURES SHOWING—

For Ages 25–65.

Comparative mortality, all causes.	Comparative mortality from phthisis.	Percentage of phthisis.	Occupation.	
1000	186	18·6	All males.	Standards.
925	175	18·6	Occupied males.	
602	85	14·0	Agriculturists.	
			Professional Classes.	
515	53	10·2	Clergymen.	
952	65	6·8	Physicians and surgeons.	
739	87	11·8	Barristers.	
599	99	14·9	Schoolmasters and teachers.	
760	138	18·0	Artists, engravers, sculptors, architects.	
907	161	17·7	Commercial travellers.	
1140	301	26·0	Musicians and music teachers.	

In the above group it is interesting to note that the last class has also double the average mortality from alcoholism.

		Clerks and Officials.	
586	73	13·0	Gamekeepers.
723	129	17·8	Civil Service clerks and officials.
707	153	22·0	Railway officials, clerks.
791	160	20·2	Civil Service messengers.
815	178	21·9	Domestic indoor servants.
837	181	22·0	Commercial clerks, insurance clerks, &c.
880	237	27·0	Law clerks.
1341	368	27·0	Messengers, porters (not railway or Government).

[2] Dr. Tatham's Supplement to the Sixty-fifth Annual Report of the Registrar-General.

In these classes the only out-door occupation, the gamekeeper, introduced for comparison, has a large pre-eminence in health. Of the rest, a post under Government carries great advantages, partly due to selection by medical examination. The last class (which has double the average alcoholism) includes many weaklings and failures in other callings, but the law clerk is nearly as bad and shows a high phthisis mortality with a low general mortality. His alcoholism is half the average.

Agricultural Classes.

Comparative mortality, all causes.	Comparative mortality from phthisis.	Percentage of phthisis.	Occupation.
562	71	12·6	Farmers, graziers.
572	82	14·3	Farm labourer, farm servant.
551	82	15·0	Labourer (agricultural districts).
527	83	15·7	Gardener, nurserymen, seedsmen.
602	85	14·0	Agriculturists.
			Transport Service.
582	63	10·8	Railway engine-driver, stoker.
892	96	10·7	Fisherman.
773	111	14·3	Railway guard, porter, pointsman.
1235	157	12·8	Bargemen.
1094	169	15·4	Carmen, carriers.
984	186	19·0	Tramway service.
1062	216	26·0	Coach, cab, omnibus service.
1547	249	16·0	Seamen, &c. (Merchant Service).

In the above two groups engaged in outdoor occupations (fishermen being introduced for comparison with the transport service), the two last also have excessive alcoholism. Both seamen and bargemen have 4–4½ times the average accident mortality. Nearly all classes in these two groups are below the average phthisis mortality, but the agricultural classes are pre-eminently healthy, only being equalled by the learned professions as regards phthisis, and having a lower general mortality than all except clergymen.

Shopkeepers.

Class I.—Such as are largely engaged in open shops or out of doors.

776	90	11·6	Milkmen, cheesemongers.
882	151	17·0	Fruiterers and greengrocers.
943	158	16·7	Fishmongers, poulterers.
1062	172	16·2	Butchers.
1778	516	29·0	Costermongers, hawkers.

The protective influence of fresh air is well shown here, all but the last class having phthisis mortality below the standard of all males. The percentage of phthisis deaths is also low in all but the last class. This class includes many of the very poor, and many weaklings and failures in other occupations. In this class alcoholism is also high, being twice the average. Fishmongers and fruiterers have one and a half and butchers twice the average amount of alcoholism mortality. Milkmen are below the average in alcoholism.

Class II.—Such as are Largely Engaged in Closed Shops or Indoors.

734	100	13·6	Maltster.
67	115	17·0	Grocer.
852	156	17·8	*Baker and confectioner.
817	183	22·0	Watch, clock, scientific instrument maker, and jeweller.
755	188	24·9	*Draper, linen-draper, mercer.
872	200	23·0	Stationer, publisher, newsagent, stationery manufacturer.
889	213	23·9	*Saddler and harness-maker.
953	236	24·7	*Tailor.
898	237	26·0	*Tobacconist.
1070	253	23·6	*Hairdresser.
901	256	26·0	Shoemaker
1046	272	26·0	*Hatter.
1274	314	23·7	*Furrier and skinner.

These indoor shopkeepers, some of whose trades may be called (*) "dusty occupations," show a general high phthisis mortality, both actual and expressed as percentages. All have a low alcohol mortality, except the hairdresser and furrier, where it is a little above the average. Confinement (and in some classes foul air and dust) and the physique of those engaged in these trades are the causes of the phthisis excess.

The Liquor Trade.

Comparative mortality, all causes.	Comparative mortality from phthisis.	Percentage of phthisis.	Occupation.
1324	246	19·0	Brewers.
1562	247	15·6	Innkeepers, &c. (London).
1945	249	12·8	Innkeepers, &c. (industrial districts).
1669	252	15·0	Innkeepers, publicans, wine, spirit, and beer dealers (all districts).
1901	275	14·4	Innkeepers, servants, &c. (masters and servants together; industrial districts).
1415	278	19·0	Innkeepers (agricultural districts).
1410	288	20·0	Innkeepers, servants, &c. (masters and servants together; agricultural districts).
1697	306	17·0	Innkeepers, servants, &c. (masters and servants together; all districts).
1083	410	38·0	Inn and hotel servants only (agricultural districts).
1691	426	25·0	Inn and hotel servants only (industrial districts).
1814	443	24·0	Innkeepers, servants, &c. (masters and servants together; London district).
1767	533	30·0	Inn and hotel servants only (all districts).
2121	680	32·0	Inn and hotel servants only (London district).

Those engaged in the selling of alcohol have an excessive general *and* phthisis mortality in every case. In all, alcoholism is greatly in excess, being seven times the average in the dealers (masters) and nine times the average in the servants (all districts). The latter have twice the phthisis mortality of the former, perhaps on account of worse food and housing. Confinement, foul air, and alcoholic excess are the causes of high phthisis mortality in the liquor trade. "La phthisie se prend sur le zinc."

Textile Industries, &c.

684	139	20·3	Paper manufacture.
927	157	16·0	*Wool, worsted manufacture.
942	167	17·0	*Carpet, rug, felt manufacture.
826	172	22·7	*Rope, cord, twine manufacture.
831	183	22·0	Lace manufacture.
1066	184	17·2	*Dyer, printer, bleacher, and finisher.
1037	192	17·2	*Cotton manufacture.
892	199	22·0	Silk, satin, crape manufacture.
853	211	24·7	Hosiery manufacture.
1216	325	26·7	*Brush, broom makers, hair and bristle workers.

Several of these occupations are carried on (*) in foul and dusty air. The phthisis mortality is not largely different from the standard of all males, but the last class shows a heavy figure. This class includes a number of poor workers who are not addicted to alcoholism in excess, and there is less than the average alcohol mortality in all the classes of this group, except the lace-workers, in whom, including liver affections, there is a slight excess. In papermakers the alcoholism is very low.

The tables which follow are arranged in nine classes: (I.) Wood-workers; (II.) printers and allied trades; (III.) steel- and iron-workers; (IV.) metal-workers; (V.) coal-workers; (VI.) building trades, &c.; (VII.) miners and quarrymen; (VIII.) glass-, tile-, and earthenware-makers; and (IX.) other mechanics.

Mechanics and Artisans.

Comparative mortality, all causes.	Comparative mortality from phthisis.	Percentage of phthisis.	Occupation.
		Class I.—Wood-workers	
717	114	15 8	Sawyer.
774	124	16·0	Coach, carriage, railway-coach builder.
757	138	18·0	Wheelwright.
769	144	18·0	*Carpenter and joiner.
888	217	24·0	*Cabinet-maker.
1104	263	22·9	*Wood-turner, cooper.

The last two classes only show an excess of phthisis mortality. Some of these occupations (*) are classed as "dusty." All are below the average in alcoholism.

		Class II.—Printers and Allied Trades.	
910	240	26·0	Lithographer, copper, and steel-plate printer.
889	273	30·0	Bookbinder.
935	290	31·0	Printer.

All these industries involve foul air. They do not present excessive alcoholism. All have a low general mortality with a high phthisis mortality.

		Class III.—Steel- and Iron-workers.	
723	85	11·7	Engine-driver, stoker, fireman (not railway, marine, nor agriculture).
765	121	15·8	Shipbuilding.
971	142	14·6	Boiler-maker.
884	152	16·8	*Blacksmith, striker.
866	157	18·1	Engine, machine, boiler-maker, fitter, millwright.
848	160	18·8	Engine, machine-maker, fitter, millwright.
1137	182	15·7	*Nail, anchor, chain, and other iron and steel manufacture.
762	206	27·0	*Cycle and motor manufacture.
890	214	24·0	*Lock, key, gas-fitting maker, gas-fitter.
1087	223	20·5	*Gunsmith.
1231	353	28·6	*Tool-, scissors-, file-, saw-, needle-makers.
1602	375	22·8	*File-maker.
1460	516	34·0	*Cutler, scissors-maker.

Some of the above occupations (*) are classed as "dusty." All except the gunsmith have less than the average alcoholism. On the whole the steel- and iron-workers show less than the average phthisis mortality.

		Class IV.—Metal workers.	
1041	160	14·8	Copper manufacture, worker, coppersmith.
1385	166	11·7	Lead manufacture, leaden goods worker.
977	206	21·0	Copper, tin, zinc, lead, brass manufacture and worker.
974	209	21·0	Tin-plate manufacture, tin-plate goods worker.
889	230	23·0	Zinc manufacture and worker.
1074	262	23·4	Brass, bronze manufacture, founder, finisher, worker.

All of these occupations involve foul and dusty air. The lead industry has more than double the average alcoholism. All the other classes have less than the average alcoholism. The general excessive phthisis mortality is due to the foul and dusty air.

		Class V.—Coal-workers.	
846	85	10·0	Coal-miner.
695	88	12·6	Coal merchant, coal burner.
838	135	16·0	Gasworker service.
1144	206	17·4	Coalheaver.
1240	263	21·0	Chimney sweep.

Of these, all are "dusty" occupations. The general and phthisis mortality are both low except in the last two cases. In both of these alcoholism is high, being twice and three times the average respectively. Coal dust seems to be less obnoxious to the lungs than metallic dust or stone dust.

Comparative mortality, all causes.	Comparative mortality from phthisis.	Percentage of phthisis.	Occupation.
			Class VI.—Building trades, &c. (other than Class I.).
1036	187	18·0	Slater, tiler.
862	188	21·4	*Bricklayer, mason, builder.
1041	203	19·0	Plumber, painter, glazier.
937	205	21·8	Paperhanger, plasterer, whitewasher.

Only one class is marked as "dusty."* The only class showing alcoholic excess is the last.

			Class VII.—Miners, quarrymen.
723	126	16·9	Ironstone miner.
905	186	20·2	Stone, slate quarrier.
1199	317	26·8	Lead miner.
1609	501	34·4	Copper miner.
2169	838	38·0	Tin miner.

All of these are dusty trades, involving sharp metallic particles. All have less than the average alcoholism, except the copper miner, whose alcohol mortality is three times the average.

			Class VIII.—Glass, tile, earthenware-makers.
622	72	11·5	Brick, plain tile, terra-cotta worker.
1202	269	22·6	Glass manufacture.
1420	277	19·0	Potter, earthenware, &c., manufacture.

All of these are more or less dusty trades. All have less than the average alcohol. The first is largely an outdoor occupation.

			Class IX.
1031	96	9·2	Chemical manufacture.
689	108	15·6	Tallow, soap, glue, manure manufacture.
737	132	17·9	Tanner.
944	199	21·0	Currier.

All of these have less than the average alcoholism and phthisis. Other respiratory diseases are very high in the case of the chemical manufacture.

			Labourers.
707	91	12·8	Platelayer, railway labourer, navvy, &c., road labourer.
1374	291	21·0	Dock labourer, wharf labourer.
1987	450	22·6	General labourer.
1808	531	29·0	General labourer, London.
2471	567	22·9	General labourer (industrial districts).

With the exception of the railway workers all these classes show a very great excess of phthisis. In the railway workers and road labourers alcoholism is less than half the average. In all the other groups it is about three times the average. All these groups include some of the poorest workers, badly housed and fed, and many who have been failures in other occupations, or who have drifted on account of alcoholism, or by reason of lack of qualities making for stability. The general labourer class forms about $\frac{3}{5}$th of the adult male population, and incurs about $\frac{1}{5}$th of the total phthisis mortality.

From the accompanying general review and re-arrangement of the Registrar-General's figures for male adults regarding the occupational mortality from phthisis (see Table), we can gather that there is a distinct relationship between certain kinds of employment and phthisis mortality. The one great preventive is fresh air. Apart from certain highly special conditions involving the respiration of sharp, metallic particles (e.g., the tin-miners), the highest mortality from phthisis is associated either with the trade in alcohol, or with the occupations which are the refuge or the penalty in the struggle for existence of the least competent. The unskilled workers and labourers, the street sellers, and similar classes on the one hand, and systematic poisoning with alcohol on the other, cause a phthisis mortality of three to four times that of All Males, and six to eight times that of the agriculturist. In these classes phthisis is part of a high general mortality.

SOME COMPARATIVE EXAMPLES OF LIFE WASTAGE BY PHTHISIS.

Occupation.	Average age at death from all causes.	Average age at death from all causes (excluding phthisis).
Clergymen.	63·0	64·0
Musicians and music masters.	48·0	50·0
Schoolmaster and teacher.	46·7	50·0
Railway official, clerk.	45·0	48·7
Law clerk.	44·4	48·3
Commercial clerk.	42·4	46·2
Messenger and porter (not railway or Government).	47·0	50·0
Innkeeper (London).	45·0	49·0
Inn, hotel, servants (London).	39·0	42·0
Costermongers, hawkers.	50·0	52·3
Printers.	44·0	48·4
Cycle and motor manufacture.	35·0	38·0
File maker.	52·0	53·0
Hatter.	48·0	52·0
Hairdresser.	42·6	44·2
Shoemaker.	54·5	58·0
Tin miners.	51·0	54·0
Engine-machine fitters.	48·0	51·0

But we also find that there are many industries whose mortality as a whole is low and yet their phthisis mortality is about or above the average. Phthisis in these classes, therefore, forms a high percentage of total causes of death. Typical instances of these occupations are clerks, indoor shopkeepers, many of the textile industries, the printing trades, and those working in metals other than iron and steel. Confinement, foul air, metallic dust, bad housing, and other conditions inherent to the occupations are the causes of the phthisis excess.

In writing on the eventual conquest of consumption medical writers and laymen interested are prone to deal with it too exclusively from the point of view of infection. This involves the idea that by treating the early cases and segregating the advanced cases this great scourge of all civilised communities can be eradicated. To me, though I believe that much could be done along such lines, it seems that the greater part of the question would remain untouched. To secure a regular and systematic examination of every employee, as is now attempted in the case of school children, is at present a counsel of perfection, even if sufficient skilled observers were available to make the necessary early diagnosis. To attempt to segregate all the comparatively advanced cases would involve a great deal of concealment in the present state of popular ignorance. Compulsory notification is an essential first step in the discovery of the real number of the phthisical population.

The widest possible health teaching among the poorest and most ignorant classes of the people, and the most careful regulation of all the conditions under which the more or less skilled but yet unhealthy industries are carried on, are also essential preliminaries to the real stamping out of consumption. As the sanatorium is the basis of all successful curative treatment of tuberculosis, so a knowledge of sanatorium methods must be universally disseminated and acted upon as the basis of its prevention. The people must learn for themselves, and it is the duty of all interested in this subject to help them. Consumption is not to be regarded as on the same plane of infectivity as those diseases from which knowledge, good food, leisure, and healthy surroundings do not protect. Such diseases are much more easily controlled by segregation methods. The mass of conditions comprehended in the term "environment" is at least as important

as (and perhaps the figures I bring before you may suggest, even more important than) infection in the case of tuberculosis of the lungs. The revealed case of phthisis, if it be of the curable class, should be taken from the workshop and home to the sanatorium. But to prevent its occurrence much more is necessary; the lessons of the sanatorium must be enforced in the workshop and the home.

The sanatorium is an object-lesson for those who are not consumptive and a school of healthy living for those already affected; it cannot remedy the existing conditions of those most susceptible to the disease. It is these conditions which form the real problem for the statesmen whose care is that of the public health. Where the occupational surroundings are known to be conducive to the development of phthisis the workshop, office, and home must be regulated into at least as wholesome a condition as the coal mine or inspected factory. As a disease of society tuberculosis lies latent in the infected house and the insanitary workshop, ready to attack the weaklings, just as it lies latent in the human body seeking a favourable moment to invade the tissues. The citadels of this ubiquitous enemy must be defined and destroyed, and the humble privates in our ranks must not be exposed to its ravages undefended by the entrenchments of hygiene. One cannot win such a campaign by caring for the wounded only. We must not regard the casualties as inevitable. The disease is dying a natural death with improved conditions of the working classes, and it is by further development on such lines, and not otherwise, that its extermination will be attained.

Brook-street, W

MINERAL WATERS AS ARTIFICIAL SERA:

A SHORT ACCOUNT OF INVESTIGATIONS ON THE QUESTION OF MINERAL WATERS AS ARTIFICIAL SERA AND OF INJECTIONS OF MINERAL WATERS INTO THE TISSUES BOTH FROM A PHYSIOLOGICAL AND A THERAPEUTICAL POINT OF VIEW.

BY DR. C. FLEIG,

CHEF DE LABORATOIRE À LA FACULTÉ DE MÉDECINE DE MONTPELLIER.

(*Translated by* H. DE MÉRIC, M.R.C.S. Eng., *Surgeon to the French Hospital, London.*)

I HAVE the honour of bringing forward a short account of the investigations, both experimental and clinical, that I have undertaken during several years on the question of utilising mineral waters as artificial sera, and I have grouped together in the present paper the various series of facts which have led me, as a practical conclusion, to extol the employment of mineral waters as injections into the tissues. This, I may add, is from a double point of view: (1) their application as artificial sera, and (2) as a new method of carrying out hydro-mineral treatment.

These investigations are of interest with regard not only to so-called hydrology but also to therapeutics and physiology. Space will not allow me at present to dwell on the question of the birth of the idea which led to the utilisation of mineral waters as injections into the tissues, or to enter into details concerning the researches of various authors who have taken up the question of mineral-water injections, such as Glénard, Billard and Ferrey-Rolles, R. Trémolières, and others. I must content myself therefore in the present paper with indicating the most important points of my experiments. I will only say that it was through my investigations on artificial sera with complicated mineralisation and the results in general obtained by injections of sea water that I was led to the idea of the mineral waters themselves being utilised as artificial sera.

Mineral Waters in Reference to their Employment as Artificial Sera or as Vital Plasma.

The mineral waters which I have used up to the present for the study of this question are hypotonic, isotonic, and hypertonic, and correspond to many different chemical compositions, most of them, however, from a qualitative point of view approaching to a certain extent the composition of the blood plasma. As these waters, by reason of certain of their properties (electrical, colloidal, radio-active, or others little known or absolutely unknown), can be looked upon as "living" at their exit from the springs from which they rise, they can be used as injections at their issue in an aseptic condition without preliminary sterilisation, thus avoiding the slightest change in their natural condition and any possible modification of their "living state." In the event of sterilisation being necessary, it should be done at a low temperature by filtration through candles (filtration by compression by means of Chamberland's apparatus; filtration under pressure more or less strong of CO_2, of hydrogen, or of air with an intermediary isolating stratum of oil, this being excellent for bicarbonated, ferruginous, or sulphurous waters; filtration under pressure of oxygen or of other gases for special cases). Undoubtedly the best plan for keeping the water is in sealed flasks made of yellow or red glass.

The waters which hold insoluble mineral elements in suspension should be reserved for subcutaneous or intramuscular injections. In these different ways either hypotonic, isotonic, or hypertonic waters can be employed according to the effect to be brought about. In order to render hypotonic waters isotonic either chloride of sodium, sea water, very salt mineral water, or sugar can be employed. The waters to be injected can be utilised with their gases in solution; this has a certain amount of interest in the case of waters containing rare gases.

Theory and Experimental Demonstration of Mineral Waters as Vital Plasma or Artificial Sera.

The conception of mineral waters as vital plasma and as artificial sera rests on a triple series of facts: (1) the facility of their injection in enormous quantities and by every possible channel, both in animals and in man; (2) the effects of their transfusion after copious blood-letting in animals and in man; and (3) the examples of the survival and reviving of organs or of cellular elements isolated from the body and placed in mineral waters.

1. Any mineral water can be injected, even in large quantities, into the tissues or into the blood. This conclusion is based on the results of copious and repeated intravenous injections given to animals, especially of prolonged and moderately rapid injections. The phenomena of diuresis, particularly observed under the influence of the latter, show that most mineral waters whose action has been studied are media even less toxic than ordinary normal salt solution, and that the changes they effect in the natural intracellular vital plasma are even less than those brought about by simple salt solution. Comparative experiments have shown that these diuretic phenomena are analogous to those which follow isotonic injections of sugar. On the other hand, mineral waters, the composition of which is to a certain extent different both quantitatively and qualitatively from the mineral composition of the blood plasma, can, notwithstanding, be injected in large quantities into the blood, and this allows of their employment as artificial sera which satisfy certain special indications. The fact of the feasibility of injecting mineral waters in large quantities without any toxic effect seems to be generally acknowledged, and this gives to the proceeding itself a value of great interest. It must be specified, however, that all these results are supported solely by experiments carried out with water sent some distance from its source and not with waters injected directly at the locality where they issue from the spring.

2. With human beings in those cases where after hæmorrhage injections of normal saline solution are indicated, injection into the veins of pretty large quantities of various suitable mineral waters is accompanied by no injurious action on the corpuscles, but, on the contrary, by very beneficial effects both on the blood and on the circulation.

3. Many mineral waters, at a suitable state of molecular concentration, are capable of preserving the excitability and of maintaining the spontaneous movements of organs having unstriped muscular fibres and furnished with glands (such as the intestines, the uterus, the bladder), when these parts are completely separated from the body and simply immersed in these waters. The intensity of the contractions is often stronger with mineral waters than with salt solution. These mineral waters play the part of specially exciting media, for, at the beginning of the immersion, the intestine contracts better in mineral water than in saline solution; and, still more, after it has remained for a long time in saline solution and so has become motionless, it will even then contract much more forcibly if plunged into mineral water.

Some waters, however, can exercise an inhibitory action owing to the preponderance of some of their elements (Mg), but even in such cases there is no question of any toxic action; intestine contracts again excellently when moved into suitable media.

The action of temperature on the contractions, in mineral waters, of organs having unstriped muscular tissue is the same as that noticed under identical conditions on the contractions of these organs in various artificial sera of complex mineralisation (highest temperature 38° to 39° C., the contractions begin at 25° to 26° C., and continue even down to 15° C., if after the organ has begun to contract it is slowly cooled). If the organs are kept at a low temperature in an ice-house, contractions by immersion in mineral waters can still be obtained by progressive heating, even after eight or nine days. The same phenomena as those manifested in the revival of contractions in the intestine when placed in complex artificial sera are also observed in the revival of contractions in mineral waters (a sudden revival at about 20° to 23° C., the second maximum temperature being about 35° C.). The same waters show a great superiority to salt solution with regard to spontaneous contractions of the ureter in guinea-pigs.

Organs with striated muscular fibres also retain their excitability for a longer period in mineral waters than in ordinary salt solution, and exhibit under the influence of the former stimulus much stronger contractions than when submitted to the action of the latter; this is the case, for example, in muscles of the bony skeleton when stimulated by artificial circulation, and also in a rabbit's œsophagus when simply immersed in these media. After being treated with mineral waters and kept in an ice-house the œsophagus can still be made to contract by electrical stimulus, even after it has been detached from the body of the animal for eight days. Finally, the contractions of the excised heart of a frog are much stronger under the influence of various mineral waters than under that of simple saline solution.

Investigations into the action of isotonic mineral waters, deprived of any possible excess of CO_2, on isolated cellular elements, such as red blood corpuscles or spermatozoa, prove that these waters do not exercise a toxic action on the living cell. Red blood corpuscles submitted to centrifugal action and to successive decantation, in which various mineral waters are the liquids employed, remain in a vital condition in these media. When reinjected, whilst in suspension in these same waters, into the animal from which they have been taken ("auto-transfusion") or into another animal of the same species ("iso-transfusion"), they revive it admirably, even after a blood-letting, which, if treated simply with transfusion of normal saline solution, would inevitably have proved fatal. Similar transfusions can be repeated several times on the same animal without the slightest manifestation of any bad effect or of any deleterious action of the mineral water on the red corpuscles. (Corpuscles, bathed in this way by mineral water and then transfused, are undoubtedly in a vital condition, preliminary investigation having proved to me that transfusion of corpuscles which preserve their physical characteristics but which have previously been submitted to some deleterious action does not bring about the survival of the animal.) Corpuscles that have remained in contact in a refrigerator for several weeks, but which all the time have been immersed in mineral waters, are still capable of producing the same reviving effects as fresh corpuscles.

In man auto-transfusion of corpuscles that have been immersed in mineral waters, practised after abundant and repeated blood-lettings, permits the withdrawal from the diseased organism of large quantities of serum (the toxic part of the blood), and thus the carrying out of a true lavage of the blood by means of merely a loss of serum, this, too, without bringing about the slightest anæmic condition of the individual; this happened in a case of grave uræmia. These repeated auto-transfusions are not accompanied by any deleterious action on the corpuscles. (Results of a similar nature are obtained with auto-transfusion of corpuscles kept in suspension in various complex artificial sera or in normal salt solution.) We have here to deal with a general method which, to my mind, can be of great service in all cases of disease where the serum has a high toxic power (endo- or exo-genetic intoxications, infections, &c.).

Human spermatozoa that already show at an ordinary temperature very intense movements retain their vitality much better in mineral waters than in pure salt solution. This conclusion is based: (1) on a study of the movements of spermatozoa immersed (like red corpuscles) in mineral water and in pure salt solution; (2) on the study of their movements in a mixture of spermatic fluid and of more or less large quantities of mineral water; and (3) on the study of their revival in these last media after having been kept several days at a low temperature (movements still seen eight days after emission of the spermatic fluid). The superiority of mineral waters over simple normal salt solution is due to their complex mineralisation and to the specially important action of some of their elements, such as calcium; this last is necessary not only for the production of contractions in organs having unstriped muscular fibres (to a less degree in those having striped muscular fibres), but also for the movements of the spermatozoa, as I have demonstrated in several experiments.

These successive series of investigations appear to me to establish on a sufficiently solid basis the conception of mineral waters as artificial sera and vital media. Moreover, this conception coincides very well with the theory of sea-water acting as a vital medium, for many mineral waters clearly have a pelagic origin.

Some Physiological Effects of Mineral Waters as Artificial Sera.

Other physiological effects, differing from those just referred to with reference to the utility of mineral waters as artificial sera, allow us to show that the action of mineral waters from this point of view is often more powerful than that of normal salt solution. The phenomena of reaction produced in man after injections of considerable quantities of mineral waters are undoubtedly more marked than those following injections of the same quantities of simple saline solution. Their intensity, too, is greater in proportion to the greater hypertonicity of the waters injected.

On the blood and on the circulation injections of mineral waters exercise an action recalling mostly that of those artificial sera which have a complex mineralisation, notably with regard to coagulation and to the renovation of the blood corpuscles, also with regard to blood pressure and to cardiac contraction.

The increase in the coagulability of the blood both *in vivo* and *in vitro* under the influence of various mineral waters is much more evident than that produced by simple salt solution. A difference of the same kind shows itself in the hæmostatic action brought about by these same waters and that by salt solution when either is injected in cases of profuse hæmorrhage produced, for example, by transverse sections of muscles. These facts are in a great measure explained by the richness of these waters in lime salts. The mechanism of the hæmostatic action set up *in vivo* is double, being due, on the one hand, to the increase in the coagulability of the blood, and, on the other, to the agency of a vaso-constrictor mechanism.

The comparative effects of injections of ordinary saline solution and of injections of mineral waters on the renovation of the corpuscles, studied by means of two series of experiments, tend to the conclusion that the renovation of the corpuscles is more rapid under the influence of injections of mineral waters, and that the renovating effects are also in the latter case superior to those of salt solution, producing a lasting revival of animals which, had only transfusion of ordinary salt solution been practised, would inevitably have succumbed.

On the blood pressure there is also a difference of action. Certain mineral waters when injected produce a persistent rise of pressure at doses which with salt solution have far from the same effect. This action must again be attributed partly to the calcium; the same may be said of their action on cardiac contraction, which is much more marked with intravenous injections of mineral waters than with similar injections of normal salt solution.

With reference to the modifications produced on the phenomena of excretion and of nutrition under the influence of mineral water injections, the general differences between them and the ones brought about by salt solution can be compared to those produced by those artificial sera which have a complete mineralisation and those brought about by simple salt solution. That is to say, as a general conclusion, many mineral waters show organic media which are preferable in all points to those of normal saline solution.

Radio-activity of certain waters, or their artificial radio-activation brought about by the addition of bromide of radium or by induction, does not modify this conclusion and does not represent in any way a factor of toxic or hurtful qualities, this being proved by the action of these waters on isolated contractile organs of the body, on the red corpuscles, or on the spermatozoa.

Deductions. Clinical Application of Mineral Water Injections into the Tissues.

The therapeutical employment of mineral water injections becomes then perfectly logical. In a general way they can be used both in cases where injections of normal saline solution or of isotonic sea-water are indicated, as well as in those in which we consider it of importance to apply a hydro-mineral cure, the maximum conditions of activity of which we wish to realise. Here I may recall the net results obtained in cases that I have already published of adenitis, tuberculosis, osteitis, pulmonary tuberculosis (certain forms), lymphatism, asthenia and anæmia, malaria, diabetes, chronic rheumatism, ulceration, eczema, psoriasis, severe syphilis with intolerance for mercury, glycosuria, and experimental tuberculosis.

In order to render a precise statement of the indications necessary for injections of mineral waters of different groups many clinical observations are requisite, but from the present time, by taking as a basis for our researches the investigations already carried out on injections of normal saline solution and on hydromineral treatment administered by the classical methods, we can foresee the series of cases in which the mineral waters would be indicated. Naturally it would be most interesting if we could choose the water which, from its chemical composition and from its various known properties, would seem best suited to the case under treatment; thus a kind of differentiation, becoming more and more distinct, would take place between the different groups of mineral waters (bicarbonated, sulphurous, &c.) to be employed as injections.

A most important study is grafted on to the last dicta: it is the comparison on the one hand between the effects produced by injections of mineral waters taken on the spot from the spring itself (in most cases without any modification), and on the other hand, the effects produced by injection of the same waters after a more or less prolonged interval since their exit from the spring. It would be of very great interest to be able to give precise data concerning in what proportion the results obtained with the "living" waters can be assimilated with those of the "old" or "dead" waters. In any case injection of mineral water into the tissues at the spring itself should be investigated on analogous lines to those employed in the experimental researches mentioned in this paper.

These advantages of injections of mineral waters into the tissues as a method of so-called cellular balneotherapy and of the application of the hydromineral cure in general are very numerous, as I have shown in detail, but the greatest discrimination is imperative in utilising these injections in certain cases, *as they cannot in any way be looked upon as substitutes for the methods of administration habitually employed*, although they are calculated to augment the activity of these last and to notably enlarge the field of application, already so extended, of hydromineral medication.

Finally, we must realise the first-rate benefits that hydrologic therapy will receive from physiological data, these last pointing to a line of investigations which at the present time are only at their dawn, the grand total of which, however, will probably form the basis of experimental hydrology.

LEWES VICTORIA HOSPITAL.—By the generosity of Mr. Augustus L. Christie a complete plant of the Roentgen rays has been installed at the Victoria Hospital on the Downs at Lewes. The new institution was opened on Feb. 2nd last by Princess Henry of Battenberg, and since that time the demands upon it have been exceedingly heavy, a fact accounted for by the up-to-date appliances. There has not, however, been a corresponding increase in the subscriptions, and at the annual meeting on Oct. 4th a strong appeal was made on behalf of the institution. It is to be hoped, too, that a little plain speaking by the mayor of the county town, in calling attention to a number of people who take no interest whatever in the hospital but are the first to appeal for letters for their domestics in times of need, will have the desired effect.

ULCERATING GRANULOMA OF THE PUDENDA A PROTOZOAL DISEASE.

BY R. MARKHAM CARTER, M.B., M.R.C.S. ENG., L.R.C.P. LOND., D.T.M. LIVERP.,
CAPTAIN, INDIAN MEDICAL SERVICE; OFFICIATING DIRECTOR, PASTEUR INSTITUTE OF INDIA.

Preliminary Communication.

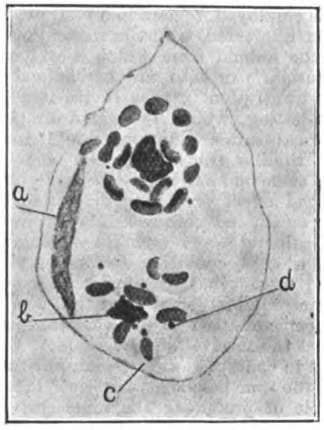
THIS interesting disease is one that is but rarely met with. It has taken some years to collect the material upon which the following observations have been made. Though the series of six cases is but a small one, it would seem sufficient to show that many of the views held by most observers regarding the etiology of the disease are entirely wrong.

Ulcerating granuloma of the pudenda is not a venereal disease, though, as a rule, the genitals and contiguous parts are the seat of infection. It is contagious and is auto-inoculated by the host on other parts of the body. The disease has been seen on the surface of the cheek, the buttock, &c. Maitland has described the disease as occurring within the buccal cavity, on the inner surface of the lips, gums, and inside of the cheek, but further confirmation of this distribution is necessary. The disease is usually seen in adults, and race plays no essential part in its etiology.

The distribution of the disease is extensive. It was first described by Conyers in 1896 in British Guiana, and later by Daniels in the South Pacific Islands. Northern Australia and New Guinea have given typical examples of the disease. It occurs in India perhaps more frequently than in other countries, and Maitland, Macleod, Powell Williams, and others have given us much literature on the subject.

According to former histological researches this disease has up to date always been classified amongst the infectious granulomatous tumours. However, if sections are stained as described below it will be found that the disease is due

FIG. 1.



An infected cell. *a*, Laterally placed nucleus of infected cell *b*, Deep-staining irregular central mass. *c*, Limit of clear area. *d*, Deep-staining dot. Drawn with 1/12 apochromatic and 8 compensating ocular Zeiss.

to a protozoal infection. Thin sections fixed to a slide are stained in a solution of Giemsa diluted 12 drops to 10 c.c. of distilled water. After this stain has acted for 20 minutes each section is washed in tap water for about 30 seconds, then dipped in eosin solution, 1 in 50,000, for 45 seconds, dehydrated, and brought up through xylol into Canada balsam. The second method is to stain a fixed section with a saturated solution of eosin in alcohol (95 per cent.) for five minutes; the solution must be three months old. The stained section is then washed in distilled water, and counter-stained with watery methylene blue, 1 in 1000, until the nuclei are stained deep blue. The slide is then washed in absolute alcohol for a few seconds and taken up through xylol into Canada balsam.

The first thing that strikes the eye will be that in certain areas lie masses of very large mononuclear cells, their cytoplasm distended with from 15 to 50 bean-shaped bodies resembling the gregariniform stage of a herpetomonas or crithidium. On using the higher powers of the microscope these bean-shaped parasites are seen to contain the usual cytological elements. The parasite, though slightly smaller than that seen in sections of Oriental sore, is very similar; and in the light of the recent work on Oriental sore, showing

FIG. 2.

Bean-shaped parasites on large scale. Drawn with 1/12 apochromatic and 12 compensating ocular Zeiss.

the crithidial monadine forms, &c., assumed by this protozoon, I consider that the parasite of ulcerating granuloma is of the same class, and will be found similarly to develop monadine and gregariniform phases in suitable culture media. For the present I propose, therefore, to consider ulcerating granuloma of the pudenda as due to a localised protozoal infection of man with either a herpetomonas or crithidium.

The parasites are found in large swollen cells, in which the nucleus is pushed to one side of the cell. The cytoplasm of the infected cells contains from 15 to 50 protozoal parasites arranged roughly in groups of 15 to 20, round a central homogeneous mass simulating the zooglia mass of Leishmania in cultivation. No flagella have been noted, but the fact that a deep staining dot lies external to and in close relationship with what seems to be the more mature form of the parasite is highly suggestive. The nuclei of the parasites stain a deep reddish violet, the dot almost black violet, and the cytoplasm of the parasite pale blue. The rest of the tissues in the neighbourhood of the infected area stain light blue. Lastly, it is interesting to note that each parasite seems surrounded by a faint unstained area suggestive of the similar appearance seen in staining for Negri bodies.

A CASE OF TUMOUR OF THE PITUITARY BODY.

BY WILLIAM BOYD, M.B., CH.B. EDIN.,
ASSISTANT MEDICAL OFFICER, DERBY BOROUGH ASYLUM.

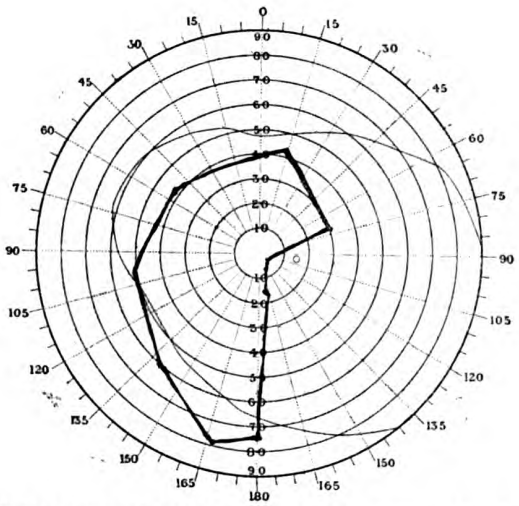
THE subject of tumours of the pituitary body has attracted a good deal of attention of late, and as the etiology and morbid anatomy of such tumours are still a matter of some obscurity, any case which serves to throw further light on the subject is deserving of attention. The condition of the cerebro-spinal fluid in such cases does not so far appear to have been noted, and this is one of several points of interest in the following case, for permission to publish the notes of which I am indebted to Dr. S. R. Macphail.

The patient, a man aged 36 years, married, was admitted to the Derby Borough Asylum on Dec. 22nd, 1909.

History.—Eight years ago the patient began to suffer from severe neuralgic pains, first in the left temple, and later in the right. Eighteen months later the sight in the left eye began to fail, and six months afterwards the right eye followed suit. The eye condition was treated in several hospitals, including St. Bartholomew's, at each of which large doses of iodide of potash were given, but both the sight and the headaches steadily became worse. In June, 1905, he began to have epileptic fits. There was no aura or local commencement; during the fit he bit his tongue and passed urine, and after the fit he fell into a deep sleep. Sometimes a succession of fits would occur, and he would pass into a condition of status epilepticus. In the course of the same year he had several mucous polypi removed from both nostrils. In 1906 he lost all sight in the left eye. In 1907 he became somewhat ataxic, and in the same year had an attack of acute mania, which has been followed by several attacks of excitement. During the last two years he has been gradually becoming more dull, stupid, and lethargic. In January, 1909, he lost all sight in the right eye. He has been getting very deaf, but for years has had a discharge from the right ear. In July, 1908, the middle ear was cleared out, but without benefit. He has always been a stout man, and has gained rather than lost weight during the present illness. His eyes are a good deal more prominent than they were a few years ago.

Condition on admission.—The patient was a strong, well-made man, with abundance of adipose tissue. The eyes were very prominent and staring. He was in a dazed and confused condition, unable to answer questions put to him, and requiring artificial feeding. He had no control of his vesical and rectal sphincters. Nothing abnormal was found in his circulatory, respiratory, and digestive systems. There was no polyuria, and his urine contained neither albumin nor sugar. From his left nostril there was a discharge of clear serous fluid, which appeared when he sat up in bed, and which fell drop by drop. It was highly albuminous, and on centrifuging was found to contain numerous leucocytes. As regards his nervous system, no paralysis of the arms or legs could be detected, nor any definite disturbance of sensation. He was very ataxic, even when sitting up in bed, but did not sway more to one side than to the other. The superficial reflexes were normal, but the deep reflexes were considerably exaggerated, those in the left leg being the most active. There was slight ankle clonus on the left side. The plantar reflex was flexion. Owing to his mental dulness it was not possible to test his cranial nerves with accuracy. There was weakness of all the extrinsic muscles of the left eye, the weakness being most marked in the superior rectus, internal rectus, and inferior oblique. The pupils were medium in size, equal, regular, and reacted well to accommodation; the reaction to light was very sluggish in the right eye and completely lost in the left. There was complete amblyopia, and double primary optic atrophy, this primary atrophy having been also observed in 1905 by Mr. Holmes Spicer at St. Bartholomew's Hospital. The blindness being complete, no observations could be made on his fields of vision, but fortunately some observations made in 1903 were available. These show that at that time the left eye was only capable of perceiving hand movements, while the right field of vision presented a beautiful example of hemianopia, the temporal half of the field being quite blind. (Fig. 1.) At that time he

FIG. 1.



Field of vision of the right eye, showing the temporal hemianopia.

is reported to have had choroiditis in both eyes. The earliest note of his ocular condition was in May, 1902, when his vision was normal and his fundi presented no unusual appearances. There was very marked deafness on both sides, but

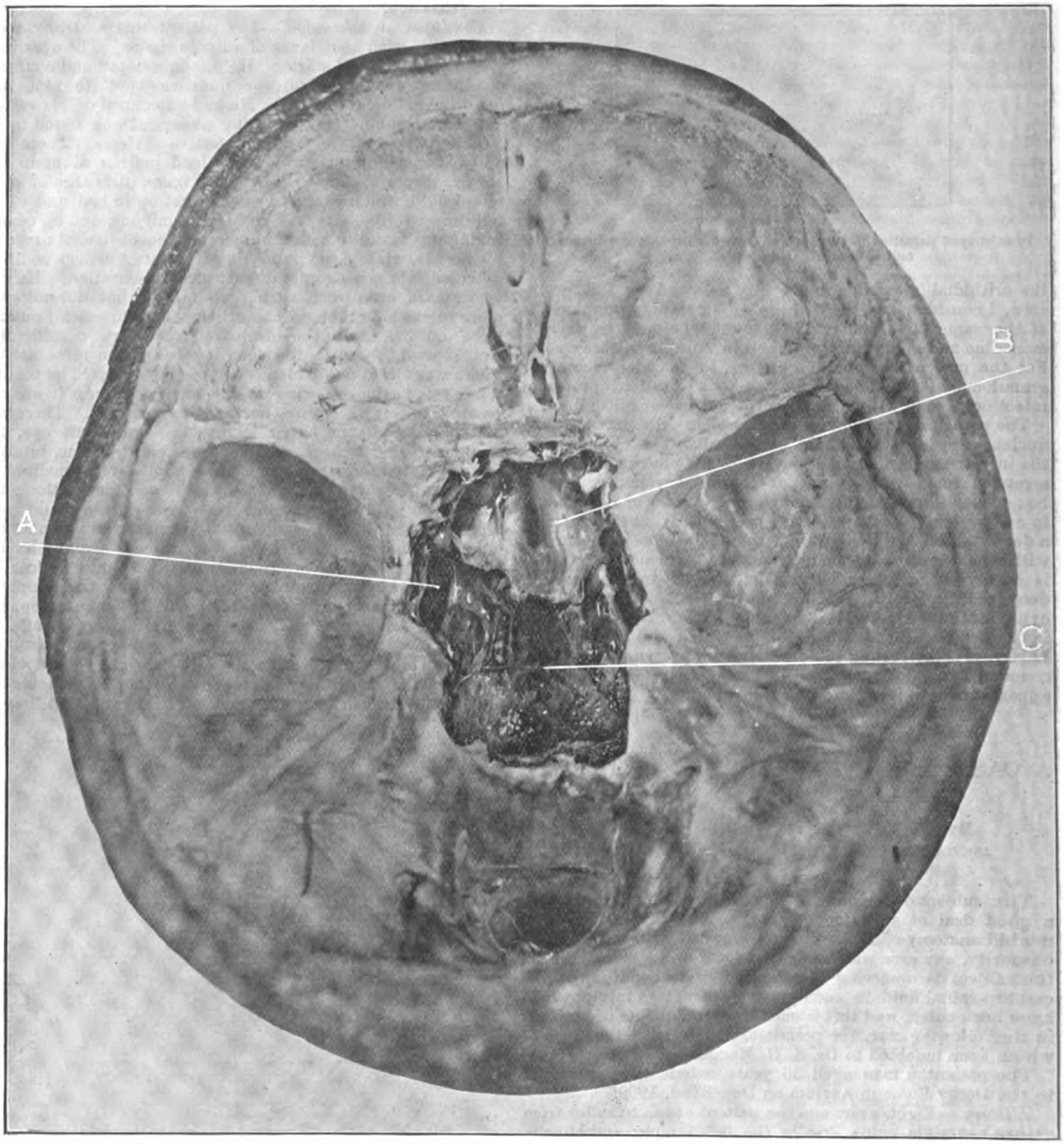
whether of middle-ear or nervous origin could not be determined.

The condition of the cerebro-spinal fluid was extremely interesting. It came out under markedly increased pressure, was quite clear, and contained an enormous quantity of albumin. The Noguchi test was positive, and with Jones's ammonium sulphate ring test a positive reaction was obtained with a dilution of 1 in 15, the amount of albumin thus greatly exceeding that usually found in general paralysis and tabes. Even more startling was the leucocyte count, which gave an average of 1630 per field under a magnification of 450 diameters, practically all the cells being lymphocytes.

Subsequent course.—After a few days the patient emerged somewhat from his condition of stupor and regained control of his bladder and rectum, but he was dull, stupid, and confused until his death. He continued to have typical epileptic fits at intervals of a week or so; no sign of localising value was observed in any of the fits. The pupils varied considerably in size from day to day, and at times were unequal and irregular. After remaining in very much the same condition for four months he died with startling suddenness, simply turning over on his side in bed and expiring without a struggle or groan, and with nothing to show that he was in other than his usual condition.

Post-mortem examination.—The body was well-nourished and covered with a liberal supply of fat. There were no signs of disease in the thoracic and abdominal organs. The skull-cap was uniformly thickened, and the dura mater was adherent to it in places. The pia-arachnoid stripped easily.

FIG. 2.



Floor of skull, showing enlargement of pituitary fossa caused by erosion of the tumour. A, Communication with the antrum of Highmore. B, Body of sphenoid. C, Cavity.

At the base of the brain there was a large, soft, friable vascular tumour of a fleshy colour, which was growing downwards into the sella turcica, from which cavity it had to be torn before the brain could be removed. A mass of pulpy vascular material, not unlike red currant jelly, was left in the pituitary fossa. The tumour was then seen to be growing from the infundibulum, this being the only point at which it could not be separated from the brain. It was invested by a thin delicate membrane, which, however, had been torn away in places, leaving a granular surface exposed. In consistency it was gelatinous, and was in places almost cystic. Its length was 7·2 cm., its width 3·3 cm., and it extended from the optic chiasma to the middle of the pons, occupying rather more of the left than of the right side. The optic chiasma had been crushed out of recognition, the crura widely separated, and the pons greatly distorted. The most striking changes, however, were those in the floor of the skull. (Fig. 2.) The sella turcica had developed into a huge cavern 6·5 cm. long and 4 cm. wide. Opening out of it on either side was an oval aperture, that on the left side proving on investigation to communicate with the antrum of Highmore of that side. Thus the discharge from the left nostril, observed during life, was in reality an escape of cerebro-spinal fluid from the cranial cavity. The fossa had no bony floor, but merely a membranous partition separating it from the cavity of the pharynx. Microscopic examination of the tumour showed it to consist chiefly of large round and oval cells containing a large and distinct nucleus; there were numerous large thin-walled blood spaces, and here and there fibrous trabeculæ running through the tissue; the whole bore a close resemblance to a mixed-celled sarcoma.

The chief points of interest in the case were: (1) the long duration; (2) the absence of wasting and of any symptoms of acromegaly; (3) the sudden termination; (4) the nasal discharge of cerebro-spinal fluid; (5) the enormous amount of albumin and extraordinary lymphocytosis in the fluid from a case of nonsyphilitic tumour (for the naked-eye and microscopic characters, together with the resistance to large doses of potassium iodide, clearly point to the non-specific nature of the growth); and (6) the remarkable destruction to the floor of the skull.

Rowditch, Derby.

A CASE OF

CARCINOMA OF THE CÆCUM REMOVED AFTER A PRELIMINARY EVACUATION OF A FÆCAL ABSCESS AND AN ILEO-SIGMOIDOSTOMY; PATIENT WELL A YEAR LATER.

BY JOHN D. MALCOLM, M.B., C.M. EDIN., F.R.C.S. EDIN.,

SENIOR SURGEON TO THE SAMARITAN FREE HOSPITAL.

THE patient, a short stout man, 64 years of age, was sent to me on March 24th, 1909, by Dr. R. D. Mackintosh of Mortlake. He had for eight years been subject to attacks of pain in the right side of the abdomen which began suddenly and were accompanied by vomiting, retching, and constipation. The abdomen distended and weight was lost rapidly, but the temperature was never detected above the normal. A purge was taken and all the symptoms subsided when the bowels acted freely. The patient then felt quite well, put on flesh, and had no trouble for a time. The attacks had become more frequent and more prolonged, but the intervals were still considerable. For example, the health was quite good from November, 1908, to March 10th, 1909, and the weight increased by six pounds. Then the last attack began, accompanied by diarrhœa, which was a new symptom. The patient had occasionally felt a lump in his side, but it could not be found by Dr. Mackintosh until March, 1909, when it was easily discovered in the region of the gall-bladder. It was then quite mobile, but when I saw the patient ten days later there was a swelling fixed in the cæcal region, apparently about 3½ inches in diameter and making the skin stand out quite an inch from the general surface of the abdomen. The mass was resonant on percussion, tense and elastic to touch, and hardly at all tender. The rest of the abdomen was soft and flat. The patient was pale, but his temperature was not raised; he was again gaining weight, and his bowels and digestion were acting normally.

The physical conditions seemed to indicate malignant disease. The history suggested that a more favourable cause of the mischief, such as a chronic appendicitis, might exist, and it was decided to explore the abdomen.

First operation.—The first operation was performed on April 3rd, 1909, when the swelling had considerably increased in size. An incision made over its most prominent part opened the peritoneal cavity and revealed omentum adherent to the abdominal wall and to the swelling. On separating this, 7 or 8 ounces of fœtid pus were released, but the peritoneal sac was not fouled by this fluid. To the outer side of the pus cavity there was a hard mass about 2 inches in diameter. The upper part of the incision was closed and the abscess was drained. The wound healed well except where the tubes were, and after two days the whole of the intestinal contents escaped through the drainage opening. The swelling gradually became smaller and its outer part was then more prominent.

It was obvious that there was an obstruction of the intestine between the fistula and the anus, and it was equally certain that this was caused by a new growth. The temperature fluctuated a good deal, rising at times to 102° F., and it was decided to short circuit the intestine before undertaking radical treatment.

Second operation.—On June 3rd, 1909, the abdomen was opened in the middle line, the small intestine was divided conveniently near to the cæcum, its upper end was inserted into the side of the sigmoid flexure, and its lower end was closed and fixed to the back of the median incision. The patient was very feeble at the end of this operation but gradually rallied. The new incision did not heal by first intention, but its union was not greatly delayed, and progress was otherwise satisfactory. Fairly regular evacuations of the bowels through the anastomosis and anus were soon established, fæcal discharge ceased, the skin around the fistula, which had been inflamed, became soft and fairly healthy, and the abscess contracted until it was a short sinus. The temperature fell to normal, but it always rose if the drainage-tube was displaced, and this frequently occurred, especially when the patient tried to move about more freely.

At the end of July it was decided that an attempt should be made to remove the new growth, and from a pathological point of view there should have been no delay, but it was thought wise to allow time for the inflammatory mischief to subside, as the mass seemed to become less fixed and it was anticipated that the operation would in any case be a difficult and severe one. The date first arranged was postponed because the patient developed an acute laryngitis, with a sharp rise of temperature.

Third operation.—On Oct. 19th, 1909, I excised the scar of the first incision and isolated the sinus, the cæcum was exposed, the omentum was detached from it, and the peritoneal cavity was freely opened. The piece of gut between the cæcum and the median incision was separated, and the cæcum, which was almost universally adherent, was enucleated from its adventitious and natural connexions and was brought outside the abdominal cavity. The ascending colon was divided well above the diseased parts and its end was inverted. One gland in the meso-cæcum was about three-quarters of an inch long but not hard. It was removed, but unfortunately was lost. No others were seen or felt. Many ligatures were applied to bleeding points and the incision was closed except where it was drained. At the end of the operation the patient was in a state of extreme feebleness, the pulse being hardly perceptible, and therefore no attempt was made to examine the anastomosis.

Recovery from the immediate effects of the operation was rapid under treatment by saline injections into the rectum, by warmth, and by strychnia. The pulse was beating 90 times to the minute within an hour. Some trouble from vomiting and intestinal distension gave rise to anxiety which ceased after the fourth day. Again the wound did not heal by first intention, but by the middle of December there was complete union except for a healthy sinus from which some ligatures subsequently escaped. Dr. Mackintosh extracted the last of these in February and then the wound finally healed.

At this time the patient could walk seven miles without

undue fatigue. There was some swelling of the right leg when it was first used, but this soon passed off. The patient's weight steadily increased, he felt better each day, and he required no medicine to aid the intestine.

Description of tumour.—Mr. S. G. Shattock has kindly described the specimen shown in the picture as follows: The cæcum is distended with a finely papillary tumour which has an extensive attachment to the wall and along one side has invaded the muscular coat. Reaching from the lowest part of the cæcum to the exterior there is a fistulous track, with the distal end of which a piece of skin is left connected.

Section through cæcum showing fistula at lower end, viewed from behind. The appendix and the distended portion of small intestine are not seen.

The small intestine is considerably enlarged near its termination by an extension of the tumour into it. The juncture of the ileum with the cæcum is recognisable externally by a deep constriction. The vermiform appendix is free from disease. A tube can be readily passed from it into the cæcum, but it has no direct connexion with the fistula before referred to.

Remarks.—Mr. Shattock suggested that the growth began as a non-malignant slowly-growing papilloma and afterwards became carcinomatous and grew rapidly. This offers an easy interpretation of the phenomena of the case with perhaps the exception of the cause of the abscess. It is probable that during six or seven years the symptoms were due to a simple intestinal obstruction, relieved by clearing the bowel, and it is not unlikely that the growth developed much earlier and caused no symptoms. This explanation may apply to other cases in which malignant disease of the intestine has been discovered after a prolonged history of illness. Recorded cases[1] also show that the swelling is sometimes so elusive that its existence might be doubted by the surgeon even after he had felt it. The parts may be so mobile that the tumour gets displaced under the ribs, into the pelvis, or behind coils of gut, and it may be thought that a mass of hard fæces had been felt.

That the abscess in the case now related formed rapidly just before I saw the patient is certain, because ten days earlier the tumour was moveable and in quite a different position. The absence of fever and of other evidences of inflammation was remarkable, but the possibility of this in connexion with peritoneal suppuration is too well recognised to create surprise. It is certain that in circumstances which are not well defined micro-organisms, which are perhaps not yet identified, exercise a pyogenic function without inducing evidences of fever.

These organisms may have escaped through the intestine or through the appendix. I think it most likely that they passed through the appendix and that the abscess was just about to burst into the bowel when I performed the first operation. That the appendix was not directly in contact with the sinus does not prove that this view is erroneous, for seven months passed between the evacuation of the abscess and the removal of the growth, and most appendix abscesses are completely healed six weeks after they are opened. The fistula in this case could not heal, and it naturally followed the straightest course from the cæcum to the skin. The appendix, with the rest of the cæcum, was almost completely shut in by adhesions.

The latest account (October, 1910) of this patient is that he is quite well, his weight varies very little, being 11 stones 1 pound. Before the first operation it was 9 stones, and between the second and third it was 7 stones. In 1906, when he suffered much from indigestion and was unable to take exercise, he weighed 13 stones 12 pounds. Now he is very active and recently walked from Brighton to Mortlake in one day.

Portman-street, W.

[1] Harrison Cripps: Brit. Med. Jour., 1909, vol. i., p. 1286.

TREATMENT OF A UTERINE FIBROID BY X RAYS.

BY AGNES F. SAVILL, M.A. ST. AND., M.D. GLASG., M.R.C.P. IREL.,
PHYSICIAN TO ST. JOHN'S HOSPITAL FOR SKIN DISEASES.

LAST year I published some preliminary notes on the treatment of a large uterine fibroid by Roentgen rays.[1] I shall now briefly recall these notes and describe the results of further treatment.

The patient, a single woman, aged 43 years, had been under the care of the late Dr. T. D. Savill for many years on and off for various nasal, gastric, and neurasthenic troubles. She had always suffered from vaso-motor symptoms of a peculiar nature, the pulse was always rapid (about 100), and she had frequent attacks of giddiness, flushing, abdominal swelling, and great prostration consequent on any gastric upset. In 1900 she had profuse hæmorrhage at the monthly periods, a symptom which led to the discovery that she had developed a fibroid tumour of the uterus. Between 1903 and 1905 the tumour grew very rapidly; between 1905 and 1908 she suffered from anæmia and various pressure symptoms, such as sciatica, and on one occasion she was laid up for some months with thrombosis of one leg. In 1903 the tumour could be felt extending up as far as three and a half inches above the symphysis pubis, with greater development on the left than on the right side. In 1903 the measurement at the level of the umbilicus was 30 inches, in 1905 it was 33 inches, and in 1908 it was 36 inches. Hæmorrhage continued to be severe; the patient was anæmic, and had to lead a very quiet life. She steadily refused operative treatment, and the mere suggestion that she should visit a surgeon caused her extreme distress. With a view to steady the nervous system galvanism was administered externally—a descending current to the spine, and also from the spine to the abdomen. She had several courses of this treatment, each course consisting of about 12 to 15 sittings, in the spring and autumn of 1906 to 1909. During and immediately after each course there was much pain at the menstrual period, and more flooding than was usual, but for several months afterwards there was no doubt in the patient's mind that she had less pain and flooding at the periods, and enjoyed better health. Thus, although she felt depressed during the time of treatment, she always returned to request another electrical course.

In May, 1909, the tumour was as high as the umbilicus, with a prolongation of about the size of a large fist extending upwards on the left side. The abdomen then measured 35 inches at the level of the umbilicus. As the patient still refused to see a surgeon I decided to commence treatment with the Roentgen rays, and tried first the method described

[1] Archives of the Röntgen Ray, August, 1909.

by Dr. Albers Schönberg.[2] During May and June, 1909, six exposures were given to each ovarian region. The tube was held at a distance of 38 centimetres from the surface of the body, and a filter was employed consisting of three layers of leather with two intervening sheets of tinfoil, in order to protect the skin by cutting off the soft rays. Altogether three Sabouraud pastille doses, measured 30 centimetres *above* the filter, were administered in 12 sittings. The menstrual period at the end of May was of customary amount, but in June it was very painful, and was preceded by intense discomfort and swelling of the abdomen, and there was more hæmorrhage than usual. The patient stated that the effect of the rays had been similar to that produced at the end of a course of galvanism, but much more severe. In July she had six more exposures. The tube was placed 15 centimetres from the body, and on an average ¾ of a Sabouraud dose (measured above the filter) was given at each exposure. At the end of July the period was accompanied by much pain and swelling of the abdomen, and the hæmorrhage was excessive. It appeared that up to that time the treatment had excited the ovarian function and upset the vaso-motor equilibrium. The patient felt so much mental depression that she refused to have any further treatment for a time. In August the menstrual period was again unusually profuse and painful, but in September the catamenia were slight and almost painless.

In October treatment was resumed, and Bordier's method was employed. In this method the pastille is placed on the skin, beneath the filter, and thus a truer estimate is obtained of the dose which, after passing through the filter, reaches the body than by those methods which measure the dose before the rays reach the filter. Three exposures are given each week by Bordier and each exposure is continued until the pastille acquires Bordier's Tint O. I followed his method as described in the *Archives of the Röntgen Ray* for December, 1909. I gave three exposures a week for three weeks, allowed a week or so to elapse, and then commenced again. I used as a filter a sheet of aluminium ½ millimetre thick. The patient would rarely allow me to give the correct dosage, and the dose at each exposure was therefore less than that prescribed by Bordier. During the sitting she complained of obscure, indescribable sensations, and as my tube worked slowly, taking over half an hour to turn the pastille, she frequently begged me to stop the treatment when only a half or three-quarter dose had been given. There is no doubt that in certain subjects the vaso-motor system is peculiarly sensitive to the static electricity surrounding an excited hard tube, sensitive in a manner never observed with the average individual. In this particular patient, on the afternoon or evening of the day of the sitting, there would often arise symptoms such as headache, mental depression, exhaustion, rapid pulse, and gnawing pain in the neck and ovarian regions.

With the above-mentioned limitations the Bordier method of treatment was administered 16 times between Oct. 5th and Dec. 4th, 1909. The effect of treatment is of interest. For two days preceding the October catamenia the abdomen was much distended, and on palpation I found the tumour was soft and enlarged. The upper part of the abdomen was also distended, but I was uncertain whether this was due to relaxation of the intestinal involuntary muscles or merely to the mechanical displacement upwards of the intestines by the enlarged tumour mass; the constipation present favoured a diagnosis of the former. There was certainly relaxation of the involuntary muscle fibre of the vascular system, the pulse being soft and rapid, as well as a generalised sensation of exhaustion and mental depression. The patient also stated that on some evenings she had swelling of one cheek, lasting several hours on each occasion; but this sign was never present when I saw her in the morning. During these attacks of abdominal swelling the only relief to the gnawing pain and general distress was obtained by a mixture of valerian, ammonia, and spirits of ether. After a slight oozing for a few days all the symptoms disappeared, the swelling decreased, and the tumour felt very hard to the touch, like the pregnant uterus during a "pain." A week later the swelling and general distress returned; the tumour was again large and soft to the touch. After four days the tumour contracted, and the patient felt well and bright for three weeks, except for occasional gnawing pain in the ovarian regions. Then the same symptoms returned with great severity, with nausea and intense mental depression. Slight oozing continued for a fortnight, a sign described by Bordier as having occurred in most of his successful cases after a few months' treatment.

Treatment was discontinued in the early part of December, and she had a profuse period at the end of that month. From the end of December to March 17th she had no hæmorrhage, but the abdomen began to swell towards the middle of February, and continued to do so until a protracted oozing began on March 17th. At the same time she suffered from intense mental depression—a symptom she had never known in her previous life. Mental and physical relief followed the flow at the end of March. When she was again seen by me, early in April, 1910, the measurements of the abdomen were as large as in May and June, 1909. Treatment was resumed on April 8th, 1910. The exposures were given with longer intervening intervals than in Bordier's method, sometimes as much as a week was allowed to elapse, sometimes only four or five days. When the patient complained of vaso-motor symptoms, headache, or abdominal swelling treatment was discontinued until she was better. Between April 8th and July 30th, 1910, she had in all 16 exposures, six over each ovarian region and four over the middle of the tumour. At each sitting the dose varied from ½ to 1 Tint O (Bordier). The history of the patient's condition was similar to that of the previous summer. The flow was absent or slight, with swollen abdomen and general malaise for a few days, followed by relief and contraction of the tumour after the flow ceased. In May and early July the flow was protracted, lasting for over a fortnight; on some days profuse, on most days merely an oozing. There was, however, no mental depression, and the patient felt more braced up than at any time during the previous year. She considered that her general health had improved and that she was less anæmic than of old. The attacks of abdominal swelling were not so marked; the tumour remained longer contracted, and in consequence the abdominal measurements were smaller in the intervals between the swellings than they had ever been in the previous summer.

Remarks.—Forty-four sittings have been administered to this fibroid during one year, but only on three occasions has a full dose been given. Bordier describes cases in which a tumour as high as the level of the umbilicus was reduced so greatly that it could be felt only by a vaginal examination, after a course of treatment extending over a year or a little longer. His cases had interstitial fibroids. During the time of treatment his patients exhibited flushing and other symptoms of the menopause, but in none does he mention such extremely severe subjective symptoms as occurred in my patient. It is to be noted that in my case the full dose was so rarely given that it may be reasonably considered that she only received about 20 doses in the 44 sittings. With so small an amount of X rays and with so large a tumour it could not be expected that as good results could be obtained as in the cases recorded by Bordier. Moreover, the prolongation on the upper left side of the tumour in my case points to the presence of more than interstitial fibroid growth. Considering the various drawbacks which made it impossible to carry out the treatment in its entirety, therefore, this case is more successful than it would at first sight appear. The patient is rid of the torture of a monthly or fortnightly flooding, even though the size of the tumour is but little reduced. As she is desirous of resuming treatment later, the final result may be successful.

I have thought it well to publish this at first sight somewhat unsatisfactory case for several reasons. So much interest has been aroused by the remarkable series of cases recorded by Bordier that I have received several letters of inquiry as to the further progress of this patient, the preliminary notes of which were published by request in the *Archives of the Röntgen Ray* last year. Most cases which have been published in full are successful cases; we do not have the records of the technique and signs of the cases which have been failures or only partial successes. There must be many who are working at this subject, and I trust that by writing this paper other British workers may be induced to describe their failures and successes, together with the technique of the treatment adopted in each case. Only thus can we find where our errors lie, which cases are likely to do well with X rays, which to do better with surgical operation. Undoubtedly there is danger in irradiating certain cases. The first effect of the rays is to excite further

[2] Ibid., May, 1909.

hæmorrhage, with consequent risk of life, and death has been reported to have followed in at least one case. Some time ago extirpation of the ovaries was a favourite method of treatment of uterine fibroid, and if we can work hand in hand with the gynæcological surgeon we shall know which cases should be dealt with by operation and which by irradiation of the ovaries.

Harley-street, W.

A CASE OF URÆMIA WITH FACIAL PARALYSIS AND INTESTINAL ULCERATION.

BY G. PARKER, M.A., M.D. CANTAB.,
PHYSICIAN TO THE GENERAL HOSPITAL, BRISTOL.

I DO not propose to discuss here the numerous complications of uræmia, but I shall confine myself to those met with in a single patient. The combination in one case of two such unlike things as facial paralysis and severe hæmorrhage from the bowel, and these almost the first symptoms brought to one's notice, well illustrates the difficulties we sometimes find in the diagnosis of kidney disease. The history of the present patient's illness is as follows.

A particularly vigorous, active nurse, aged 37 years, complained to me on Feb. 2nd, 1909, of facial neuralgia which had worried her for a fortnight. She was not anæmic and looked as usual in complete health. Menstruation commenced the same day and was normal. On the 3rd left facial paralysis came on and one eye could not be closed, but she went on with her duties as before. There was no ear trouble or history of sitting in a draught to account for it. However, the next morning she was attacked with slight vomiting and then passed from the bowel two or three pints of bright blood mingled with fæcal matter. It was difficult to see any connexion between the paralysis and the bleeding. There was no sign of purpura and the paralysis was of the ordinary peripheral type. The eye, by the way, could not be closed for a month afterwards. On the 7th menstruation ceased, but after a rectal injection profuse bleeding from the bowel again came on. I could find no polypus, piles, or other source of the hæmorrhage. Another severe attack took place next day, the 8th, after a vaginal and rectal examination by a gynæcologist, who could, however, find nothing amiss except a tender spot in the rectum some three inches from the anus. On the 10th the bleeding finally ceased under the use of adrenalin and other styptics. Vomiting was troublesome during the next week and a pyrexial condition for several days, with some convulsions, came on, but after that she made steady progress towards recovery.

I had noticed that the urine showed a cloud of albumin, but no casts, and it was of 1014 specific gravity. The heart was little if at all enlarged, but her previous history turned out to be important. As a child of 11 she had scarlet fever and diphtheria, and there had been some question of albuminuria afterwards. She had suffered from frequent headaches and nausea, though she was always active and able to work. When 25 she had a good deal of neuralgia and two years later gastric ulceration occurred and lasted on and off for five years. In August, 1908, severe headaches came on, but quieted down after a holiday. In November persistent vomiting in the early morning began and troubled her for some time, but did not interfere with her general health and activity.

A month after her extraordinary attack of facial paralysis and hæmorrhage violent headache and vomiting returned and lasted for some days. The blood pressure rose from 160 millimetres to 180 millimetres, the quantity of urine varied from normal to 100 ounces, and the cloud of albumin continued. No casts were ever found on repeated examinations, and no retinal changes were seen at any time. The anæmia following the hæmorrhage gradually passed away. In May another pyrexial attack appeared, with vomiting and most violent headache, which resisted all the usual treatment for uræmia until we tried venesection to the amount of 20 ounces from the arm, which gave immediate and most welcome relief.

Finally, in August there was a slight return of the bowel hæmorrhage, which was accompanied by considerable griping pain and mucous stools. Boric acid rectal injections increased the pain, but plain hot water ones soon gave relief. She has continued ever since in fair health, but with an increasing blood pressure, which at one time reached 220 millimetres, occasional rises of temperature and frequent headaches, especially if vaso-dilators are given to her.

It seems to me undeniable that we have here a case of contracting kidney which caused neuritic facial paralysis, hæmorrhage from the bowel, and ulceration, as shown by the dysenteric symptoms in August, but the combination of symptoms was most unusual and the activity and recuperative power of the patient are also remarkable.

Now peripheral facial paralysis generally follows a local chill or an ear trouble, and is rarely connected with any systemic disease except diphtheria or small-pox. It does, however, sometimes occur in uræmia, and besides the patient whose history I have given I have recently seen another young woman with chronic albuminuria and high tension pulse in whom this condition appeared for a time. Simpson long ago recorded instances in puerperal albuminuria. Uræmic cases are also mentioned by French writers, and Dr. J. Rose Bradford tells me that he has himself seen an instance without any obvious gross lesion post mortem. There are indeed in uræmic patients so many nervous affections commonly met with that it is curious that this particular form is not more frequently seen. It is difficult to say what is the pathology of this facial paralysis in uræmia, whether it is a toxic neuritis or due to a hæmorrhage or œdema in the sheath of the nerve. In the absence of direct observations we can only suppose that it is produced in the same ways as the ordinary form.

Intestinal hæmorrhage and ulceration have long been recognised as complications of Bright's disease, but well-marked instances are not very common. Of course, hæmorrhages occur commonly enough in kidney disease from other organs than the kidney. Too often they are cerebral, but ocular, nasal, and pulmonary ones are of daily occurrence. The cases of serious rectal hæmorrhage in uræmia which I can recall in my own practice have been in aged persons with probably degenerate vessels. Ulceration of the bowels is found post mortem more often perhaps than the text-books would lead us to suppose. Bright in his paper[1] noticed that among his 100 cases of albuminuria there were 19 in which ulceration of the intestine had taken place, and in 7 of these the large intestine was affected. Still he granted that some of them might be due to tuberculosis. Again, in 1859, Treitz described ulcers of the bowel in nephritis, due, as he thought, to the irritation from carbonate of ammonia excreted through the walls. Stengel favours the theory of the excretion of irritants as a factor at least in their production, since some enteritis is associated with them, but refers to three other explanations: (1) capillary thrombosis; (2) arterio-sclerosis of the local vessels; and (3) submucous hæmorrhages. He remarks, too, that several may coalesce, forming a large ulcerated surface.

Recent writers have confirmed the view that round ulcers of the stomach and duodenum are occasionally due to this uræmic condition. Dickinson[2] collected 22 cases of ulceration, of which 11 were in the small intestine only, 5 in the large bowel, and 2 in the stomach. He also recorded 8 cases of hæmorrhage without ulceration. In 9 of his 22 cases retinal changes were observed. Granular kidney was present in 14 cases, and a large white one in 2. He pointed out that the symptoms include griping pain, irritation of the bowels, and dysenteric diarrhœa, with the discharge of mucus in some cases, but there may be constipation and occasionally no bowel symptoms at all. Vomiting and hiccough too may be troublesome. The ulcers are commonly of regular outline, circular, and punched out, without any thickened edges. Perforation is common, and there are frequently hæmorrhages and ecchymoses in the neighbourhood. He took the view that the submucous hæmorrhage is the first step in the process of ulceration.

Matthieu and Roux found ulcers most often in young persons from the age of 18 to 25 years. A good account of a fatal case is given by L. G. J. Mackey of Birmingham.[3] The patient was a woman, aged 27 years, with profuse hæmorrhage from the bowel. There was a cloud of albumin in the urine and granular casts. Perforation took place a

[1] Guy's Hospital Reports, 1836, p. 385.
[2] Transactions of the Royal Medical and Chirurgical Society, vol. lxxvii.
[3] Brit. Med. Jour., April 24th, 1909.

week after admission. More than 100 small ulcers were found in the lower part of the small intestine and the cæcum, three of which had perforated. There were numerous submucous hæmorrhages in addition. He considers that the ulcers were due to the invasion of the hæmorrhagic areas by micro-organisms from the bowels. In another case which he mentions a leadworker, aged 28 years, died from cerebral hæmorrhage, but in the intestinal walls were numerous small hæmorrhages with commencing ulceration.

It is important to distinguish these cases from those of the so-called ulcerative colitis, to which Hawkins and others have lately drawn so much attention. In the latter there will be few, if any, signs of kidney disease, and there may be recurrent attacks for many years. Still, it is sometimes a difficult matter to decide which condition we have to deal with.

To conclude, ulceration of the bowel and hæmorrhage from it are important complications of Bright's disease and may lead to a fatal result. When a bowel hæmorrhage takes the place of a cerebral one the patient may have a better chance of recovery if he survives the immediate risks, but if it is due to extensive ulceration the condition is a very serious one.

Clifton, Bristol.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

HERNIA OF THE STOMACH INTO THE THORAX.

BY W. A. E. WALLER, M.R.C.S. ENG., L.R.C.P. LOND.,
HONORARY CONSULTING MEDICAL OFFICER TO THE ST. CROSS HOSPITAL, RUGBY

ON April 16th, 1910, I was summoned to see a young man, aged 20 years, one and a half miles from Rugby. On my arrival I found him dead. I was given the following history. On April 14th he was well and was spreading manure on a field. He ate a very hearty dinner (his father said he was usually a large feeder), including currant-roll pudding. In the afternoon he drove into Rugby with his father, but began to feel ill and vomited, but he walked part of the way home, carrying some fowls. He vomited several times during the evening and the night, and though he felt better on the morning of the 15th he lay about all day and took only milk and broth. He had an action of the bowels after taking salts. He slept well during the night of the 15th as far as his father (who slept in the next room) knew. At 8 A.M. on the 16th he had some hot milk, and later some coffee and brandy. At 9 A.M. the father went up to him and found him rather cold. At about 10 A.M. he died. On my arrival the only noticeable thing was the dark fluid (of the colour of bismuth stools) running from the nostrils.

On April 17th I made a post-mortem examination. More of the same coloured fluid was running from the nostrils. On opening the body there was apparently nothing wrong with any of the abdominal organs. On removing the chest-piece the right lung was found to be very voluminous, and the left cavity of the thorax was equally fully filled with something which was evidently not lung. Further investigation found the left lung to be of about the size of an average spleen quite compressed at the upper and inner side. The heart was firmly contracted and rather more towards the middle of the chest than usual. I then found that the whole of the stomach, except just the pyloric end, had passed through the œsophageal opening in the diaphragm into the left cavity of the thorax. There seemed to be no constriction, as the opening admitted three fingers easily. It contained a large quantity of the same blackish fluid mentioned as running from the nostrils, with the currants floating about, and other semi-digested food. The mucous membrane was deeply congested. The small intestines were mostly rather contracted, containing practically no fluid and only a little solid.

The parents did not send for help earlier because the son had a sick attack at Christmas which passed off in 24 hours. He had had no illness that I could hear of, but five years ago a heavy but empty farm cart passed over his left chest which necessitated a five weeks' stay in our hospital. I cannot hear that any definite lesion was discovered, but for several days he had an evening temperature of 101° F., and for several more only a degree less.

The patient was passed into a Foresters' Lodge a year or so after his accident, which I think could not have happened had the state of his chest been as I found it after death.

Rugby.

A CASE OF RICHTER'S HERNIA STRANGULATED IN THE OBTURATOR CANAL.

BY H. LEWIS BARKER, M.B., B.S. LOND., M.R.C.S. ENG., L.R.C.P. LOND.,
LATE HOUSE SURGEON, ST. MARY'S HOSPITAL.

THE patient, a man aged 61 years, was sent up to St. Mary's Hospital on the night of Jan. 10th as a case of intestinal obstruction. He gave the following history. On the afternoon of Jan. 7th—that is, three days before admission—he was seized with sharp pain in the pit of the stomach. The pain was very sudden in its onset, but passed off to some extent so as to allow him to continue his business. He was not sick at the time. On the following day the pain was still present, but was of a gnawing character, and he had to discontinue his work. On the next day, the 9th, he was sick several times, and the vomited matter became brown in colour and offensive. His pain got easier towards night. On the morning of the 10th, before admission to hospital, he was given a rectal injection, but in spite of this his bowels were not open. He was sick about six times, and later his pain got much better. He said that he had always enjoyed good health previously to the present illness and that he was not constipated as a rule.

On admission his condition was as follows. He complained of slight gnawing pain in the abdomen. His countenance, however, was composed and cheerful. The temperature was 98° F. and the pulse was 88. The tongue was furred. The patient's abdomen was not appreciably distended and moved well on respiration. It was quite soft and there was no tenderness on palpation. The most prominent feature was the presence of visible peristalsis in the epigastrium from left to right. The patient being a thin man, this peristalsis was very obvious and striking. A rectal examination showed nothing abnormal to be felt in the pelvis. On the next day the abdomen was more distended, and besides the epigastric peristalsis there was also plainly seen peristalsis due to the small intestine, which made the abdomen assume a characteristic "grid-iron" appearance. There was no fulness in either flank. The patient was sick three or four times, the vomited matter still being brown in colour but not exceedingly offensive. An enema was given at night with a fairly good result. Until this time the bowels had not been open for six days. An analysis of the stomach contents showed that there was no free mineral acid. The total acidity was 0·07 per cent. There was no lactic acid and the ferment activity was low.

On Jan. 13th a laparotomy was performed by Mr. Clayton-Greene. An incision was made along the right linea semilunaris, commencing above the umbilicus. The pyloric region of the stomach was first explored and found to be normal; the rest of the stomach was also found to be normal. The cæcum was not distended. The small intestine, however, bulged into the wound and was distended and appreciably hypertrophied. The distended portion of small intestine was followed out and led to the left iliac fossa, when it was seen that a portion of the circumference of the gut was herniated into the left obturator foramen, and anchored there by recent adhesions. The hernia was reduced and the bowel washed with hot saline solution, when the intestine immediately showed signs of recovery. The peritoneal sac was drawn out of the foramen, but it was not possible to attempt a radical cure through the existing incision. In fact, during the operation the incision had to be enlarged till it was 8 inches in length, and even then it was difficult to manipulate the hernia, though a good view was obtained by turning up all the coils of intestine from the pelvis. The left obturator foramen was much larger than the right and admitted the tip of the finger. The efferent portion of small intestine was shrunk and perfectly empty. The incision was closed without drainage and healed perfectly.

The patient made an uneventful recovery and was discharged from the hospital on Feb. 10th. It is interesting t

record that he was again in hospital in April for a femoral hernia on the left side, for which a radical operation was performed, and he left the hospital cured at the end of the month. At the present time (October) the man is perfectly well and is able to take an active part in his business, which is that of a printer. I have to thank Mr. W. H. Clayton-Greene for permission to publish this case.

Remarks by Mr. CLAYTON-GREENE.—The special features in this case were: 1. The appearance presented by the patient of chronic obstruction in the small intestine. 2. Marked peristalsis of the stomach, suggesting a pyloric stenosis in addition to the blockage of the small gut. I was surprised to see gastric peristalsis so marked when the obstruction was so far from the pylorus. 3. The variety of the condition. Obturator hernia is so much commoner in women, in the proportion of 63 to 4 (Macready). Richter's variety of strangulated hernia is itself uncommon and the association of the two must be very unusual.

So far nothing has been done to prevent recurrence beyond reducing the sac by traction from the peritoneal cavity. The obturator opening on the left side easily admits the tip of the index finger, and it is reasonable to expect a recurrence of the condition. It seems feasible by making an incision parallel with and above Poupart's ligament to dissect down extraperitoneally to the obturator foramen and to block the opening with a flap of the obturator internus muscle.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Metal Drains in Chronic Abscess of Bone.

A MEETING of this society was held on Oct. 10th, Mr. CHARTERS J. SYMONDS, the President, being in the chair.

Mr. SYMONDS delivered the presidential address on the Treatment of Chronic Abscess of Bone by means of Metal Drains. Before commencing his address he referred in sympathetic terms to the loss sustained by the society through the death of the late treasurer, Mr. J. Langton. The President then proceeded with his address and said that his object was to exhibit the results of treating the effect of central osteitis by metal drains. In some cases there had been a typical chronic abscess, in others the patients had shown a sinus leading into the centre of the bone. That sinus in some instances was the result of an acute or subacute osteitis occurring in early life, in others in adult life. Incidentally, it appeared that a greater number of the cases were the result of septic infection than was supposed to be the case. There was little or nothing in medical literature as to the after-treatment of these cases. The evacuation of an abscess by means of the trephine or gouge, or the enlarging of a bone sinus and the cleaning out of a central cavity were simple enough procedures and need not detain them. His concern was with the after-treatment, for in his own hands up to the employment of metal drains that stage was prolonged, unsatisfactory, and sometimes disastrous as regards the neighbouring joint. The wall of a chronic abscess of long standing was hard and smooth; there was, in other words, a barrier of dense bone. Unless that was removed by operation—an unwise proceeding—it took some time to undergo rarefaction by osteitis, during which time effective drainage was required to prevent decomposition. The difficulty in maintaining drainage was due to the closure of the orifice by periosteal growth. A metal drain prevented that and at the same time did not itself lead to irritation as did a rubber drain or a gauze packing. Those latter methods, especially in hospital patients, were notoriously difficult to maintain, and local septic infection almost always occurred. That led to a chronic osteitis, to the retention of pus from time to time with general septic infection, and almost always to secondary changes in the neighbouring joint. Again, for the process of recovery and for the closure of the cavity it was necessary that the enlarged bone be remodelled and restored to its normal size, a process taking under the most favourable conditions some months, and in others one or two years. The question he raised was what was the best method of dealing with a chronic bone abscess after the pus had been evacuated, or again of dealing with a case of acute or subacute central osteitis either immediately or if encountered some months or years after evacuation of the pus? With regard to chronic abscess, where the infective activity had long ceased and the pus acted more as a foreign body, the ideal method no doubt was to close the cavity after rendering it aseptic. The compact layer of bone that limited these old cavities had suggested to more than one worker the possibility of applying the method of dentistry, employing, however, an absorbable filling. Blood, bismuth, bone, and later a preparation containing iodoform in spermaceti had been employed. The difficulty of securing perfect asepsis was obvious. In the infective varieties where pus formed quickly—i.e., in a few days, or as in one instance three weeks—it was unlikely that an aseptic condition could be brought about. Nor would it be possible to remove all the septic products in those long-standing cases of sinuses with thickened bones. His own experience of attempts to close chronic abscess and of inserting periosteal flaps had not been successful, but he hoped that others might contribute some better experience of those methods of treatment. He must be content in putting before them a short summary of a method of drainage not much in vogue, though he thought by no means new, which had in his hands proved of the greatest value. Acting on the belief that there must be a discharge of pus until the enlarged bone had been restored by slow absorption and reconstruction to the normal size, a metal drain had been retained until that had taken place. It would be shown that a patient could carry on his work with a large drain in the femur or in the lower end of the tibia and that he could attend to the cleaning and management of the tube. Full use of the limb rather promoted than retarded recovery; the silver or aluminium gave rise to no irritation of the skin, and effectually prevented the retention and decomposition of pus and so the spread of osteitis and the slow general septic absorption which led to such depression of general health. The tubes had been made of silver, German silver, and aluminium. In the case of the last-named metal the flange must be riveted to the cannula. It would last a long time and was somewhat cheaper than silver, but was not quite so nice a material for the purpose. Lead in default of anything else would answer. The size should bear some proportion to the cavity. Theoretically it should equal the diameter, but that was unnecessary. In a large cavity a diameter of half an inch was sufficient. In the smaller cavities it was well that the diameter should be of a larger ratio to the cavity. After a year the tube could be reduced in size, the reduction depending upon the extent to which the bone had moulded down. Finally, a rod of metal having a flat nail head was worn for some time, or for cheapness a length of silver wire with the end turned over. The duration of drainage was also influenced by the localisation and the nature of the case. The duration of the drainage was, however, of less moment if the patient could go about his work and if the wound be kept free from septic changes. The age of the patient was also an important factor. From the pathological standpoint it would be noticed that nearly all the cases of Mr. Symonds were due to some form of acute or subacute infection. There were the cases of acute necrosis of early life, limited in some to one bone; in others several bones or other parts were involved; there were two cases of subacute infection, in both of which the lower third of the femur was the part affected, and in both there was a history of very slight injury. As to the cause of such cases one could in the absence of bacteriological evidence only speculate. Probably a staphylococcal infection might explain such cases or the bacteria of pneumonia or influenza. Those were interesting cases of multiple lesions in the same bone suggesting a widespread but attenuated infection, so mild that it might lie almost dormant for years, and give rise at intervals to local abscess over a period of 20 years or more. There were cases of long-standing sinuses with enlargement of the bone from a chronic septic osteitis and periosteitis associated in some with secondary joint changes, and all examples of acute disease in early life. In those perhaps one saw the most striking results from the metal drains. In regard to tuberculous cases Mr. Symonds had had several cases sent into hospital for tuberculosis appearing on a superficial examination to be of that nature, but which proved to be due to other causes. He thought in all probability a good many such conditions had

been set down to tubercle without sufficient evidence. The error was due, he thought, to the need of some other and reasonable explanation for the recurrence of abscesses and necrosis throughout a period of 10 or 20 years. Mr. Symonds suggested that those foci were all deposited during the initial attack of acute osteitis in early life and had remained more or less dormant. Those foci were never really quiescent, for a slow, painless osteitis associated with organisation was constantly going on. Some day the surface was reached and then there was pain. The protective layer of dense bone forming the wall of those old abscesses was the best evidence of chronicity.

Sir W. WATSON CHEYNE said that in dealing with septic cavities one method was to try to render the cavities aseptic, but his experience was that that was a very difficult thing to do. Another method which he recommended was to cut away as much bone as possible, so as to let the soft parts lie on the bottom of the cavity. If this procedure were not possible then recourse must be had to drainage, but there was a chance of the drain becoming plugged up and of further trouble ensuing. He was much impressed with Mr. Symonds's metal tubes, as the troubles with other methods of drainage were very great. Indiarubber drainage-tubes were of no use, as it was not possible to keep them in place, and if holes were made in them granulation tissue formed and blocked the orifices. If he (Sir Watson Cheyne) could not cut away and level down the bone as he had described, then he would certainly try the method shown them by Mr. Symonds.

Mr. A. E. BARKER said that they would be encouraged to persevere in the use of bismuth paste, which could reach the furthest ramifications in a bone cavity. The material appeared to act as a germicide and as a kind of framework for the growth of granulation tissue until the whole cavity became organised.

Mr. A. PEARCE GOULD said that the ideal treatment was by means of very patient and laborious operation to eradicate the whole of the affected area and flatten down if possible the dense wall of the abscess so as to secure a sound healing from the bottom, but if long drainage was required in any case then it appeared to him that the metal tubes used by Mr. Symonds would be most useful. He (Mr. Pearce Gould), however, hoped that the impression would not get abroad that in these cases it was sufficient treatment to drain by means of a metal tube for an indefinite time, because the great desideratum was eradication of the disease by a primary operation.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.

Presidential Address.—Exhibition of Cases and Specimens.

A MEETING of this society was held on Oct. 6th, Dr. F. HINDS of Worthing, the President, being in the chair.

The PRESIDENT delivered an address on Exophthalmic Goitre. He drew attention to the recent dictum of Professor Kocher, who stated that it was the duty of all practitioners to submit cases of this disease to operation at an early stage. The speaker contended that in order to make this a reasonable course of action it was necessary to regard Graves's disease as progressive, going on to the death or disablement of the subject of it. But was this the usual course of the disease? He believed not, and in support of this he drew attention to the after-history of 17 cases which he had watched for several years. Two were dead; both were women in whom the illness commenced about the menopause. In one valvular incompetence came on, followed by dropsy and death. The other died from acute mania. Of the others, one, an acute case in a young boy, was lost sight of, but a year after he was last seen he was said to be much improved. Another, still under observation, had mental symptoms from time to time, and insanity was feared. There were five young cases, all of whom had so far recovered as to be able to earn their living. Of the older cases, one, a man, completely recovered in about a year; the females were all well so far as heart symptoms went, and able to take their place in ordinary family life. One of them had an attack of mania, was in an asylum for about 18 months, but now showed no sign of Graves's disease. So far as these examples went he was entitled to say that they showed that a large majority of the cases of this disease got well spontaneously or as the result of medical treatment. He had never seen a necropsy on a patient dead from exophthalmic goitre, except as the result of an operation; with the exception of the patient mentioned, who died from heart disease, he had never signed a death certificate from this cause. As there was a considerable risk attaching to the operation, and as resulting improvement was by no means certain, were they justified in accepting Professor Kocher's ruling and submitting all cases to early operation?—In the discussion which followed all the members agreed with the view held by the President, and deprecated an early resort to surgery in the treatment of exophthalmic goitre.

The following cases and specimens were shown:—

Dr. W. WILLIAMS demonstrated the beneficial results of Mercurial Inunctions in a man with Localised Scleroderma. The patches were much softer after a course of these inunctions.

Dr. WALTER BROADBENT showed a case of Internal Hydrocephalus caused by cerebral tumour; trephining had been performed by Mr. H. H. Taylor, but no tumour found. For the last three months a needle had been inserted into the lateral ventricle through the trephine wound and two drachms of fluid let out every other day. Great improvement of the symptoms had resulted.

Dr. L. A. PARRY and Mr. W. B. PROWSE showed skiagrams of a child with Congenital Deformities of the Bones. There was shortening of the leg, due to want of development of the femur, with an absence of the upper two-thirds of the fibula. The latter, unlike the majority of these cases, had caused no club-foot.

Mr. PROWSE exhibited skiagrams of a patient with Congenital Lateral Deviation of the Fingers, with lax joints and webbing of the fingers.

Mr. GEORGE MORGAN showed a baby with Hernia of the Ovary. He had had six similar cases, and believed the organ was always cystic, and therefore should be removed at the time of operation. He also showed a Fibrous Nodule removed from the soft tissues of the thumb, which had caused very great pain. An X-ray photograph seemed to point to periosteum as the origin of the nodule. It was suggested that it might be a neuroma.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Oct. 7th, at which Dr. Leonard Williams, the new President, delivered an address on Some Further Aspects of Obesity. He said that recent investigations have served to throw a good deal of much-needed light on some of the intricacies of this rather difficult but ever-present question. Obesity has been defined as a "vice of metabolism," a definition which has the merit of being altogether indefinite and the disadvantage of committing the definer to nothing upon which he may be impaled. In ordinary obesity the vice is not in the metabolism, but in the metaboliser, who eats too much, drinks too much, excretes too little, takes no exercise, and wears flannel next his skin. When we come to the class which includes hereditary obesity, congenital obesity, asexual obesity, and the like, we are brought face to face with physiological problems of absorbing interest which, until they are solved, must always constitute corpulence one of the reproaches of the therapeutic art. The condition first described by Jonathan Hutchinson as lipomatosis universalis asexualis is clearly due to the absence or withdrawal from the economy of the internal secretions of the ovaries and testes. Both these extracts are believed on good experimental grounds to be anabolic—that is, to reduce or retard metabolism—and yet their complete withdrawal produces in either case so high a degree of anabolism as to be rightly regarded as pathological. The only two animal extracts which we know to be capable in certain circumstances of reducing corpulence are thyroid extract and pituitary extract. But in the case of the thyroid, while admitting to the full its katabolic power of stimulating certain forms of metabolism, it is certainly not imbued with that special hatred for fatty tissue with which it has been credited. Many patients who have been benefited by thyroid extract have really been suffering from myxœdema due to a minor degree of thyroid inadequacy. Pituitary insufficiency may give rise to a state of pseudo-obesity resembling that arising out of inadequacy of the thyroid. Obesity is often associated with chlorosis, and this form is related to, though it is probably not identical with, the type of obesity which is so liable in the female sex to occur at puberty, in connexion with marriage, and after maternity, and is consequently due to some internal secretory cause. In the case of maternity the cause may be the internal secretion

of the mammæ, which is believed by some to be very active. In connexion with marriage Mr. Arbuthnot Lane holds the view that the prostatic fluid of man is essential to the full normal physiological development of woman, to point to an explanation of post-marital obesity, which is by no means unlikely to be correct.

NEWCASTLE-ON-TYNE CLINICAL SOCIETY.—This society commenced the work of the winter session on Oct. 6th, meeting in the Geographical Institute. The business of the meeting was the installation in the chair of the President-elect, Dr. E. Napier Burnett, by the retiring President, Mr. J. W. Leech, who in well-chosen sentences formally introduced Dr. Burnett to the society. Dr. Burnett then took the chair and delivered the Presidential address on "Obstetrics in Relation to Some of the Allied Sciences." The lecturer gave some introductory remarks, pointing out the various ranges of normality in analyses of the urine from the standpoint of the nitrogen excreted in relation to the food intake in healthy individuals. He then proceeded to discuss quantitative and qualitative changes in the nitrogenous excretion of pregnancy. He pointed out that there were few cases in which the urine remained normal in this particular, and outlined the symptoms shown by patients of various types through a slight qualitative change, and through what he described as a pre-eclamptic change, up to extreme cases of eclampsia. He urged the necessity of medical men making something more than a mere cursory examination of the urine at odd times in pregnancy, and being content if there were no albumin present. He pointed to the need for eliminative treatment in the pre-eclamptic phases, and sketched a parallel between such cases and acetonæmias and subacute degenerations of the liver. The address was full of suggestive ideas and was received with enthusiasm.

Reviews and Notices of Books.

A System of Medicine, by Eminent Authorities in Great Britain, the United States, and the Continent. Edited by WILLIAM OSLER, M.D. Oxon., F.R.S., Regius Professor of Medicine in the University of Oxford; assisted by THOMAS MCCRAE, M.D., F.R.C.P. Lond., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University, Baltimore. Vol. VII.: Diseases of the Nervous System. The Oxford Medical Publications. London: Henry Frowde and Hodder and Stoughton. 1910. Pp. 969. Price 30*s.* net per volume, or 24*s.* net per volume to subscribers.

WITH this, the seventh, volume the System of Medicine of Professor Osler and Dr. McCrae is completed, and the editors are to be congratulated on rounding off their arduous task with so excellent a production. The specialty of neurology has now become so large that it is no easy matter to compress into less than a thousand pages a series of authoritative articles by American and English experts on the multitudinous diseases to which the nervous system is subject. The contributors have, without exception, exercised a most praiseworthy self-denial in their determination to attain conciseness, for, as all who are familiar with neurology are aware, there are so many affections in regard to whose nature and pathology finality has not been reached that it is difficult to give an adequate account of them without alluding to various opinions in detail, and this inevitably lengthens the descriptions. The general impression we get from a perusal of this seventh volume is that it supplies an admirable account, alike in compactness and completeness, of present-day knowledge of nervous disease. Where all is so good it is perhaps invidious to single out any contributions in particular, but we should like to refer especially to the scholarly chapter on apoplexy from the pen of Dr. Henry M. Thomas, and to Dr. Smith Ely Jelliffe's critical study of hysteria.

The classification that has been adopted is on somewhat original lines. An attempt has been made to include as much as possible in such comprehensive subdivisions as "diseases of the motor tracts," "scleroses of the brain," "diseases of the meninges," "diffuse and focal diseases of the spinal cord," "combined system diseases of the spinal cord," "diseases of the peripheral nerves," and so on, but while the method has much to commend it, it may give rise to an erroneous conception of the degree to which systematisation of neurological knowledge has progressed. Thus, under the first of these, diseases of the motor tracts, we find described peroneal muscular atrophy, in which condition the posterior columns, not to mention other non-motor structures, are constantly affected, and, more curious still, the progressive hypertrophic interstitial neuritis of Dejerine and Sottas, in which disease the lesions of the cord are similar to those of tabes, while the changes in the nerves are just as marked in sensory as in motor fibres. It is unfortunately the case that the nature of not a few nervous affections is still undetermined, and therefore premature systematisation is to be deprecated.

The most recent advances in neurological science—we may mention, for instance, those in connexion with the subjects of acute poliomyelitis and serous meningitis—have all been incorporated, and throughout there is a refreshing novelty in the way in which the matter is presented to the reader. This effect may in particular be produced upon the English reader and be due to the *personnel* of the contributors, 13 out of the 16 whose names appear at the head of articles belonging to the United States and Canada; in any case the value of this treatise, to the comprehensiveness of which allusion has already been made, is increased by the bright and interesting manner in which the subjects are handled. The paragraphs devoted to a historical summary of the various diseases dealt with are often very instructive. An excellent index is given at the end of the book, as well as a general index to the whole seven volumes.

We have no hesitation in saying that the seventh volume of the "System" is a credit to English and American neurology, and anyone who desires a succinct yet detailed account of nervous disease will find it here, together with adequate appreciation of, and reference to, the work of other authorities.

Medical Examination of Schools and Scholars. Edited by T. N. KELYNACK, M.D. Vict. London: P. S. King and Son. 1910. Pp. 434. Price 10*s.* 6*d.* net.

THIS book is made up of a series of chapters by different authorities on almost all aspects of school medical work. Not the elementary schools alone, but the secondary and public schools are touched upon, and there are chapters also upon medical examination in the schools of Australia, Canada, and New Zealand, America, France, Germany, Switzerland, and Scandinavia.

An even cursory reading of this volume should enable anyone to see at once the weak and the strong points of the present system; while for those who wish to get a grip of practical methods for working purposes some of the articles are admirable. For this latter purpose the second chapter on the Organisation and Administration of the Medical Examination of Schools, by Dr. George Reid and Mr. J. Priestley, and the third chapter on the Organisation and Administration of the Medical Examination of Scholars, by Dr. W. J. Howarth, are both good and useful, and should give anyone coming new to the work a sound knowledge of what is expected and what is desirable. On this subject, however, Dr. Clive Riviere's article on the General Routine Medical Examination of School Children is particularly excellent and will be recognised by anyone with any experience in such examinations as embodying just those principles which assure smooth working and efficiency. Dr. Clive Riviere's observations on the heart of the school child will be most valuable to school medical officers as the conditions found are apt to be very perplexing, and his

hint as to the avoidance of strain is suggestive. We think it, however, possible that a good many of the heart conditions found in elementary school children may be themselves signs of some degree of chronic malnutrition, which affects a considerable proportion of children in the poorer quarters of large towns. Finally come the statements that "a pleasant relationship to child, teacher, and parent is essential to the success of the school doctor. He is placed in the school not only to collect facts, not solely to learn, but also to teach and advise" the teacher, the parent, and the child, the former "in the application of the laws of health," and the latter "in the value of personal hygiene"; and these might well form part of the preliminary instructions sent to every school medical officer on first beginning work.

The weak points of the system of medical inspection are made clear in several chapters. The first, which deals with the Correlation of the School Medical Service and the Public Health Service, by Dr. Edward W. Hope, does little more than make this weak point obvious, as the author does not suggest anything except the desirability of coöperation, and brings forward no definite suggestion as to how this coöperation is to be attained. In Chapter IV. Dr. Clement Dukes draws attention to one of the anomalies of our educational system, the fact that masters in public schools have very usually no training in teaching and no knowledge of hygiene. It is curious to think that our free elementary schools will soon be better equipped in these ways than our most expensive public schools.

Among other weak places in our system are the schools for mental defectives, who are given an elaborate and expensive education up to the age of 16 and then turned adrift on the world for whose struggle they are unfitted. As Mr. A. F. Tredgold says, this course of conduct can only be regarded as "the height of folly." Another serious defect in the general system is revealed in the case of Poor-law, orphanage, and reformatory schools. These institutions seem to be quite inadequately inspected—a very serious condition that should be promptly remedied. One chapter is missing that we should have liked to see—that on the school treatment of epileptics. This particular class at present, it seems, is left to take its chance without any special institution to help it. Other useful articles in the book are that by Mr. George Foggin on the Eye and Eyesight of School Children, that by Dr. Lewis Williams on School Clinics, and that by Dr. J. Lambert on Feeding the School Child. The examination of ears and hearing proposed by Mr. Arthur H. Cheatle seems to us over-elaborate if proposed to be done in the schools, although excellent if proposed to be done at some special centre by the expert, after the school medical officer has done the usual routine examination.

The establishment of school clinics as outlined by Dr. Williams would, among other desirable things, provide us with a centre at which all kinds of special and detailed examinations could be carried out. School clinics have been already established at Bradford, Bow, Brighton, Cambridge (teeth only), Sheffield, and Southampton. We are not told much about the clinics except in the case of Bradford, which treats ringworm, impetigo, scabies, ear discharge, dirty and sore heads, defective vision, and sore eyes. Probably all clinics will have to treat a good deal of this kind of ailment, and it is certainly not a field in which there will be, for the poor class of children treated, much possibility of interference with the work of the general practitioner. Nevertheless, the treatment of these conditions in school clinics should make a great difference in the level of school health, and the same may be said for another department of the work, the use of the clinic for purposes of diagnosis in doubtful cases and the certifying of children recovered from zymotic diseases as free or otherwise from infection. Dr. Williams makes an interesting suggestion of the possibility of "flying clinics" visiting country districts.

Altogether the "Medical Examination of Schools and Scholars" will be found full of suggestion and of interest.

Tropical Medicine and Hygiene. By C. W. DANIELS, M.B. Cantab., M.R.C.P. Lond. With a chapter on Snakes, by A. ALCOCK, C.I.E., M.B. Aberd., F.R.S., Lieutenant-Colonel, I.M.S. In three parts, with coloured and other illustrations. Part II.: Diseases due to the Metazoa. London: John Bale, Sons, and Danielsson, Limited. 1910. Pp. 233. Price 7*s.* 6*d.* net.

WE had the pleasure of reviewing the first part of this treatise, which deals with the protozoa in connexion with tropical diseases, in THE LANCET of June 25th, 1910, p. 1762. The present volume deals with those due to the metazoa. Lieutenant Colonel Alcock has added a chapter dealing with snakes. Major E. Wilkinson, I.M.S., who was responsible for part of the subjects contained in the first volume, has been precluded from any share in the work under review owing to his absence from the country.

In this, as in the former volume, we find a concise description of the diseases due to various kinds of parasites, of the manner in which they spread, and the rationale of the preventive measures advocated. After an introduction, in which the etiological relation of the metazoa to disease is briefly indicated, the platyhelminths are first considered. This class comprises the turbellaria, the trematoda or flukes, and the cestoda or tape worms. Their anatomy, illustrated by some excellent plates, is succinctly given. In the remarks on bilharziosis we note that as regards treatment the author has not found any benefit from the administration of methylene blue, a drug recommended by Lieutenant P. S. Lelean, R.A.M.C., in 1902. Dr. Daniels not only considers it useless, but harmful, as it may cause renal trouble. With respect to the question as to whether or not there are two species of parasite included under the description of the worm responsible for the disease, the author holds that the balance of opinion is in favour of a second species. The chapter on tapeworms is excellent; we note especially the excellent plates with which it is illustrated.

The nemathelminths are next considered; these include the nematodes, nematamorpha, and the acanthocephala. The diseases for which the nematodes are responsible include the various forms of filariasis; here the student will find all the main facts relating to chyluria and elephantiasis; the treatment advocated is quite up to date. The author considers the method of lymphatic drainage by strands of silk, so as to establish passages in the subcutaneous tissues, connecting one lymphatic system with another, of some promise. Castellani's practice of combining the removal of longitudinal wedges of skin with the use of fibrolysin is held not to admit of any definite opinion as to its value, owing to the want of sufficient experience. An excellent table is given of the differential characteristics of the various forms of filaria. In the treatment of guinea worm the author considers the methods of dropping cold water on to the part affected, of extraction by gradually withdrawing the worm on a piece of wood, and the method of injecting perchloride of mercury. A modification of this has very recently been advocated by Lieutenant H. W. Acton, I.M.S., who has employed the subcutaneous injection of chinosol with success in 18 cases out of 19, the disadvantage of the perchloride being the formation of an insoluble mercury albuminate on contact with the tissues. In the etiology of guinea worm Leiper's researches are noted. Trichinosis is duly considered; in the prophylaxis of the disease due stress is laid on the importance of thorough inspection of pork

before it is issued for consumption. In this connexion the admirable practice in vogue in Berlin occurs to the mind, where, when the pigs are killed and the bodies scalded, sections are at once made and examined microscopically at a large central institute. The subject of ankylostomiasis follows. Its symptoms, the characteristics of the ova, the prognosis, morbid anatomy, and the treatment are fully shown, and the cautions with reference to the use of thymol are not forgotten. The researches of Looss as to the mode of entry of the worm into the human organisms are related, whilst due stress is laid on the necessity of prophylaxis.

After the ascaridæ have been considered the author gives some useful diagnostic criteria of the various entozoal infections, with a plate illustrative of the different ova, the respected measurements of which are tabulated for comparison. A *résumé* of the prophylactic methods necessary against the various parasites that have been described next appears, and it is pointed out that in considering prevention of parasitic infections we have to take into account the following incidents in their life-histories: (1) how the parasites, eggs, embryos, or larvæ leave their host (man); (2) what happens to them afterwards; and (3) how they re-enter their host (man). This chapter is one of the most valuable in the book. Dr. Daniels concludes his work with an account of the morbid effects due to leeches, arthropods, and diptera, whilst myiasis, nasal, intestinal, and dermal, is fully discussed.

We then come upon a feature that has hitherto been wanting in treatises on tropical medicine. This has been supplied by Lieutenant-Colonel Alcock in the chapter on snakes and snake venom. In this he describes the general zoological characters and classification of snakes; the venom apparatus and venom of the thanatophidia; the treatment of snake-bite in theory and practice; and, lastly, the genera and species of venomous snakes and their geographical distribution. A vast amount of useful information is condensed in this chapter, which should be most valuable to medical men in India, contributed, as it is, by an officer of the Indian Medical Service who is so well known for his scientific work. Altogether the present volume fully sustains the reputation of its predecessor in every way.

Die Individualisierende Operation der Inveterirten Scheiden-Damm-Mastdarm-Risse (*The Individualisation of Operations for Tear of the Pelvic Floor.*) Von OTTO KÜSTNER. Mit 7 Tafeln und 10 Abbildungen. Jena: G. Fischer. 1909. Pp. 36. Price 3.50 marks.

THE multiplicity of the operations for the repair of tears of the pelvic floor is well known and is exemplified in some of the more modern American text-books, in which not uncommonly large numbers of them are described. Every gynæcologist who meets with many of these cases has his favourite method of procedure, and the principles upon which they are based are equally numerous. Nor is this surprising when we remember the great differences of opinion which exist even among anatomists as to the relative value in supporting the pelvic viscera of the different structures forming the pelvic floor. Professor Otto Küstner is no exception to the rule, and in this work lays down very clearly and dogmatically what he conceives to be the best method of dealing with these cases. The book is illustrated by some simple diagrams and a number of stereoscopic photographs, so that the description in the text is easily followed. As is almost invariable, the author condemns most operations but his own, and is very severe upon the time-honoured flap-splitting method of Lawson Tait—an operation which we must confess we favour, and from which we have seen very excellent results ensue.

Professor Küstner points out the well-recognised fact that practically every tear of the perineum takes place to one or other side of the middle line, and he further points out that as the tear heals with the formation of scar tissue the two halves often become markedly displaced and the anatomical relations distorted by the shrinking of the scar tissue. Since the amount of tearing and distortion of the two sides is very unequal, all the ordinary methods of suture, according to the author, fail, as they take no notice of this inequality, and therefore any raw surface if formed symmetrically may result in the removal of too much tissue on the one side and of too little on the other. For this reason he maintains that every injury must be treated on distinct lines of its own, and the first essential is to remove all the scar tissue and to restore the condition of things to that present at the time of the tear, before healing and disfiguration by the formation of scar tissue took place. The original wound in this way having been reproduced perfectly, the corresponding portions of the torn tissues must then be carefully defined, and if necessary isolated—for example, the sphincter ani muscle—and sutured accurately together. In this way alone is it possible to replace the parts in their original anatomical relations and completely to restore their functions.

It is important to bear in mind that after a perineorrhaphy the patient is very likely to bear further children, and the endeavour of the surgeon should be directed to forming a perineum which will stand the test of childbirth without necessarily giving way again. Full details of the special technique employed by the author are given, and by his method he maintains that the worst lacerations can be made to heal without any trouble; at least, so an experience of 20 years has taught him. Undoubtedly, the method has given good results in Professor Küstner's own hands, and the perusal of this clearly written and excellent little monograph should allow others to practise this procedure with a good measure of success.

Operations upon the Uterus, Perineum, and Round Ligaments. By W. J. STEWART MCKAY, M.B., M.Ch., B.Sc. Syd., Senior Surgeon, Lewisham Hospital for Women and Children, Sydney. With 148 plates. London: Baillière, Tindall, and Cox. 1909. Pp. xvii.–454. Price 21*s.* net

THE author has written this book with the object of pointing out how the obstetrician should deal with immediate lesions of the vagina and perineum, and, in the next place, to describe how these lesions when neglected may be dealt with later by the operator, whether he is a general practitioner or specialist. He thinks that the old idea that the perineum is a keystone and the supporting structure of the vagina and uterus is still firmly rooted in the minds of a great many members of the profession. We hardly think the present-day practitioners, at any rate those who are in the habit of performing gynæcological operations, are so ignorant as the author imagines, but it is with this idea in his mind that he has written this work of some 454 pages, mainly on operations for lesions of the perineum and for the various conditions, such as cystocele and rectocele, commonly associated with prolapse. It is true that 110 pages are given up to a consideration of the operation of curettage, which no doubt is somewhat abused at the present day, but the practical abuse of this simple and undoubtedly useful operation is certainly more than equalled by the author's abuse of his reader's patience. We are glad to remember that the majority of writers on gynæcology can discuss curettage fairly fully in less than 110 pages.

The author in his excellent account of the anatomy of the pelvic floor and genitalia describes the levator ani muscle as arising from the white line, and the fourchette as often formed by the posterior extremities of the labia majora. We believe that in neither of these descriptions is he correct, and he is certainly in disagreement with the majority of good

anatomists. The various operations which can be performed upon the pelvic floor are described well and in great detail, and the illustrations, of which there are a very large number, are extremely good. The account given of the action of the various portions of the pelvic floor is also good. The author strongly condemns the operation of ventrofixation in patients likely to become pregnant, and maintains that it is almost a surgical axiom that this operation should never be performed upon a patient in such conditions. We are of opinion that the manner in which the operation is performed is an important factor in these cases, but the contention of the author is a sound one. Dr. Stewart McKay's methods do not err for want of thoroughness; thus we note that in cases of well-marked prolapse he curettes the uterus, amputates the cervix, performs an anterior and posterior colporrhaphy, removes piles, and finishes the operation by performing ventrofixation. Certainly any surgeon who desires information on the various methods of treating displacements of the uterus by operation might do worse than read this book, and although in our opinion the article on curettage is of inordinate length and quite out of relation to the importance of the operation, yet it certainly does contain a great deal of useful information and will prove helpful to anyone who can afford the time to read it. If we may judge from the last chapter—on dysmenorrhœa—which appears to be interpolated for the purpose of describing Dudley's operation of incising the posterior lip of the cervix, the author in young women who suffer from dysmenorrhœa performs Alexander's operation when "between the times of the periods they suffer from constant backache." We cannot imagine a more unnecessary procedure or a statement more likely to do harm when read by anyone not able to appreciate such treatment at its correct value.

History of Medicine. By Dr. MAX NEUBURGER. Translated by ERNEST PLAYFAIR, M.B. Lond., M.R.C.P. Lond. In two volumes. Vol. I. London: Henry Frowde and Hodder and Stoughton. 1910. Pp. 404.

THE volume of the translation of Dr. Neuburger's "History of Medicine" now before us includes Vol. I. and Part 1 of Vol. II. of the original German edition. Part 2 is in course of publication and will form Vol. II. of the English translation. We have already reviewed the book in its German form[1] and can only express our pleasure that such an excellent work should have been made accessible to readers who have no knowledge of German.

A good history of medicine in English has for long been a desideratum. Freind's work is, of course, a classic, but much both in ancient and modern medicine has been discovered since his day, and Dr. Withington's book, admirable though it is, of necessity treats the subjects in a superficial manner, owing to its small size. All the same, it is of great value to the student of medical history as a bibliography and record of authorities who may be consulted for further information. Dr. Neuburger's work being planned on a larger scale than that of Dr. Withington, has enabled its learned author to treat the subject matter more at length. His style is simple and easy, and Dr. Playfair has succeeded in producing an eminently readable translation. The volume before us contains the history of medicine from the earliest (Neolithic) times down to the thirteenth century, while the influence of Arab medicine on Western Europe is reserved for the next volume. And no one who reads the first volume will fail to look forward with interest and expectation to the appearance of the second.

[1] THE LANCET, June 8th, 1907, p. 1575, and June 25th, 1910.

LIBRARY TABLE.

The Prevention and Treatment of Abortion. By FREDERICK J. TAUSSIG, A.B., M.D., Lecturer in Gynæcology, Medical Department, Washington University. With 59 illustrations. London: George Keener and Co. 1910. Pp. 180. Price 9*s.* net.—The treatment of cases of abortion is undoubtedly a very important part of the work of a medical practitioner. Whether the subject is so important as to merit a book being devoted to it alone is a matter of opinion, but apparently Dr. Taussig considers that it is. He certainly makes out a very strong case for his contention when he tells us that he finds the ratio of abortions to confinements among 600 gynæcological patients as high as 1 to 2·3, a proportion a good deal higher than that usually given by most authors, namely, 1 to 5. Criminal abortions, he states, are also very frequent; thus he found them in no less than 10 per cent. of his own cases, while Treub finds 52 in 218 abortions, or a percentage of 25. Not only are abortions relatively commoner than we usually imagine, but the death-rate is also high, at any rate when septic infection is present. Dr. Taussig quotes Sittnev as recording among 267 uncomplicated cases one death only, but no less than three deaths among 35 septic cases. Maygrier's figures are even more striking, for while the mortality of his spontaneous abortions was 0·57 per cent., that of his criminal abortions was no less than 56·8 per cent.; and it must be remembered that these figures take no account of the excessive morbidity rate attending such cases. The large part which criminal abortion must play in the production of gynæcological affections is shown by the figures quoted by the author, showing that 80,000 criminal abortions occur every year in New York and from 6000 to 10,000 a year in Chicago. There does not seem much hope that this crime will diminish in frequency; rather is there evidence to show that it is becoming more and more prevalent in all the cities of the world. The author trusts that education and legislation may have some effect in diminishing the practice; but although severe penalties are enforced by the laws of nearly all countries, only too often they are a dead letter, and the difficulties of obtaining a conviction in these cases are notorious. We notice in the treatment of cases of retroflexion and pregnancy that the author favours the introduction into the vagina of a colpeurynter filled with mercury. For our part we prefer the method of exerting pressure upon the uterus, a very efficient method, by means of a rubber ring of large size. The treatment of abortion as laid down by Dr. Taussig is eminently sound. He rightly deprecates undue interference in cases of uncomplicated abortions and summarises the operative indications thus: "In the absence of immediate danger await developments, and operate only when complications arise." In describing the method of evacuating the uterus in cases of incomplete abortion the author does not lay enough stress upon the importance, indeed the absolute necessity, for getting the uterus anteflexed and held by the left hand against the back of the symphysis pubis before any attempt is made to introduce the finger into its interior. In this way alone is it possible to carry out properly his advice to push the uterus down on to the finger and not to attempt to push the finger into the uterus. Indeed, except in very early cases of pregnancy unless this manœuvre is carried out there will be the greatest possible difficulty in reaching the fundus uteri. With the principles of treatment as recommended by Dr. Taussig we are in complete agreement, and this monograph he has written is a very good one and will repay perusal even by the specialist.

Hints for the General Practitioner in Rhinology and Laryngology. By Dr. JOHANN FEIN, Privat-docent in the University of Vienna. Translated by J. BOWRING HORGAN. London:

Rebman, Limited. 1910. Pp. 223. Price 5*s.* net.—As an easy mode of access to the subjects with which it deals, this book leaves little to be desired. It is written in a pleasant and readable manner, for which the translator deserves some of the credit, and it exercises little or no strain upon our powers of comprehension. It might be said, indeed, with some truth, that Dr. Fein places the general practitioner's attainments at too low a level, as, for instance, when he includes "ozæna" among "diseases of the nose the recognition and treatment of which is [*sic*] only possible for one who has had some special training." With regard to the suitability of the book as a guide to British practitioners its value is impaired by its having been written for a foreign people whose customs are different from ours. We should not at all satisfy the public in our country, for example, if we were to operate on tonsils and adenoids without an anæsthetic. Dr. Fein's teaching in general runs along familiar lines, but he is singular in recommending that after turbinotomy "the nose should remain plugged for from one to four days." This is advice which, we are sure, nearly all modern rhinologists would deprecate.

Science and Singing. By ERNEST G. WHITE. London: The Vincent Musical Co., Limited. 1909. Pp. 72. Price 4*s.* 6*d.* net, or $1.25 net.—The author of this brochure has discovered that tone is produced in the nasal accessory sinuses, the higher notes in the frontal sinuses, the middle in the ethmoidal cells, and the deeper in the sphenoidal sinuses. The function of the vocal cords is merely to direct the current of air, like water from a hose-pipe, into these various chambers, from which it sweeps out the mucus like a broom in a spring-cleaning. (The metaphors are the author's.) He has also discovered, and a photograph of a dry skull is reproduced to prove it, that the bony palate is filled with "hundreds of air-cells." Armed with his theory, the author marches forth conquering and to conquer—deaf-mutism among other things; "such an individual as a deaf-and-dumb person will not be known throughout the length and breadth of the civilised world." Curiously enough, it has had a different effect upon us. It has rendered us speechless.

INTERNATIONAL HYGIENIC EXHIBITION, BUENOS AIRES, 1910.—A grand prize has been conferred upon Messrs. Burroughs, Wellcome and Co. for their exhibit at the International Hygienic Exhibition now being held in Buenos Aires.

THE GUILD OF BRAVE POOR THINGS.—Princess Louise, Duchess of Argyll, has sent us a letter of appeal on behalf of the Heritage School of Arts and Crafts for Crippled Boys at Chailey, Sussex, which is in connexion with the Guild of Brave Poor Things. The object of this school is to inspire the children with courage to fight against their handicap in the battle of life and to equip them to support themselves by a thorough training in suitable crafts. Hitherto the work has been carried on in a temporary building, but now, when the full value of the teaching given to the children has been recognised by the Board of Education and the school is full to overflowing, with a long waiting list, it has become absolutely necessary to make the buildings suitable for modern requirements. The necessary alterations and extensions will cost about £5000, and towards this sum a few friends have promised or guaranteed £2500 conditionally on a sufficient sum being raised. Princess Louise feels sure that the crisis has only to be made known to bring forward other helpers. The girls' school is a new building the gift of Lord Llangattock. It is of melancholy interest to note that it is proposed to name the new gymnasium for the school after the late Hon. C. S. Rolls, who took a keen interest in this branch of the Guild's work, and on account of whose lamentable death at Bournemouth the speech day of the school which was to have been held on July 23rd was cancelled. The president of these schools is the Bishop of London, and the honorary treasurers Lord Llangattock and Miss Alice Rennie, 36, Westbourne-terrace, Hyde Park, W., who will be happy to receive contributions.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

"TABLOID" BISMUTH GAUZE.

(BURROUGHS, WELLCOME, AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

THIS is a new antiseptic dressing which will be appreciated for several reasons. The antiseptic is a bland bismuth compound which is non-toxic and without odour. The gauze readily responds to the test for bismuth. The gauze can be used in all cases in which iodoform gauze is employed, but it has the demonstrable advantage that when used as an absorbent dressing in the uterine cavity it remains odourless for five days, while in the same situation iodoform gauze becomes offensive in 48 hours. It clearly offers a powerful yet non-irritating antiseptic surface which will be found convenient and effective in gynæcological practice. The gauze is made in widths of 1, 2, and 3 inches, and is carefully sterilised and packed in one-yard rolls which are surrounded by a specially varnished germ-proof cover.

PRESERVED MANGO JUICE.

(THE ORIENTAL CANNERY CO., HONAVAR, INDIA.)

We found that the process of preservation of this juice is free from objection; there were no undesirable preservatives present, the pulp was in good condition and sound, while the inside of the tin was bright and clean. The juice had the peculiar taste of the fresh mango, a fruit which is much esteemed in India and in America. The mango tree is peculiarly sensitive to frost, and therefore its cultivation is confined to warm countries. Some authorities regard the mango as of medicinal value, and there is no doubt it serves as a mild laxative. On analysis of the mango juice we obtained the following results: Moisture, 81·35 per cent.; mineral matter, 0·57 per cent.; albuminous matters, 0·88 per cent.; malic acid, 0·20 per cent.; sugar, trace only; alcoholic extract (chiefly glycerine), 17·0 per cent. The mango possesses, it is interesting to note, anti-scorbutic properties which may be referred to the important quantity of alkaline salts present. The fruit may be consumed without harm by gouty and diabetic patients, since it is practically free from sugar, while the amount of free acid present may be disregarded.

HUXLEY'S PROTEID FOOD.

(THE ANGLO-AMERICAN PHARMACEUTICAL CO., GALEN WORKS, 59, DINGWALL-ROAD, CROYDON.)

We have received two forms of this food, one in which egg is used and one prepared without that addition. Our analyses practically confirm those already published. Food A (prepared without egg) gave the following results: Moisture, 15·70 per cent.; mineral matter, 8·30 per cent.; protein, 47·62 per cent.; fat, 1·0 per cent.; carbohydrate (chiefly cane sugar), 27·38 per cent. The preparation with egg (Food B) gave the following results: Moisture, 11·50 per cent.; mineral matter, 8·50 per cent.; protein, 48·86 per cent.; fat, 6·50 per cent.; carbohydrates (chiefly cane sugar), 24·64 per cent. There were present also sodium glycerophosphates and calcium formate. Finally, both foods are said to contain active lactic ferments, and in experiments upon milk we found this statement justified. Incubation over a period of 24 hours produced a steady increase of lactic acid and a curdling of the milk protein. It is claimed, further, that sodium glycerophosphate is present in a potential form—that is, it becomes available for the promotion of nutrition at the time of ingestion. The foods are of distinct merit and their composition has evidently been carefully worked

out, having regard to special physiological requirements. They are prepared chiefly for the use of sufferers from digestive disorders and those with feeble powers of assimilation.

BOULOU NATURAL MINERAL WATER.

(ST. LEGER, 24, ELSHAM-ROAD, KENSINGTON, W.)

The source of this interesting water is in the Pyrenees and its chief characteristic is the presence of an important amount of alkaline salts, sodium bicarbonate predominating. Further, it effervesces distinctly with carbonic acid gas, but does not contain an excess. The water is peculiarly soft to the palate and leaves an impression of cleanliness in the mouth. From its chemical composition it is clearly entitled to rank among those which are well known to be useful in catarrhs. It is particularly of service, for example, when taken freely and systematically in gastric catarrh and in certain intestinal disorders. It has a marked diuretic action. Our analysis showed that the water contained per litre 3·97 grammes of sodium carbonate, 0·91 gramme of sodium chloride, 0·97 gramme of calcium carbonate, 0·19 gramme of magnesium carbonate, and 0·10 gramme of silicic acid. There were present also salts of other metals, as, for example, manganese, iron, strontium, and potassium, but occurring only in minute quantities.

SOPHOL.

(THE BAYER CO., LIMITED, 19, ST. DUNSTAN'S-HILL, LONDON, E.C.)

Sophol is an interesting organic combination (formonuclein) of silver containing 20 per cent. of the metal. It is a dull-brown powder readily soluble in water. The compound is evidently a stable one, since the ordinary reagents of silver give no results when added to its solution. Sodium sulphide, however, readily separates the metal in the form of black sulphide. Sophol is introduced for use in ophthalmological practice, its merit, compared with other preparations, being that it is non-irritating, while it is an effectual destroyer of the gonococcus. According to experiments made with sophol, it appears to be a decided advance on silver preparations which have, so far, been employed in diseases of the eye.

VIBRONA.

(FLETCHER, FLETCHER, AND CO., HOLLOWAY, LONDON, N.)

The completion of new laboratories on modern hygienic principles for the purpose of preparing this wine on scientific lines is evidence of the manufacturers' determination to produce a standard article. When regard is had to the composition of a good genuine wine it is clear that on the face of it the constituents of cinchona bark must be practically incompatible with it. Perhaps tannin presents the greatest difficulty, since tannin precipitates most alkaloids. By the careful and ingenious processes adopted at the Vibrona laboratories a wine is produced which contains a definite and standard amount of cinchona bark principles in a thoroughly soluble and stable condition. The wine is quite bright and without deposit even after keeping for some time. One of the secrets of producing a permanently clear and bright product is the exposure of the preparation to a low temperature before bottling. Another important point is that the cinchona principles are present as hydrobromates, which are said not to produce the "cinchonism," which occurs in some patients when they take the ordinary cinchona preparations. We have examined a sample of Vibrona wine taken direct from the factory, and a sample purchased independently on the open market, and the results definitely support the claim that the wine is a carefully standardised preparation. In the one case, for example, we found a total alkaloidal content of 0·024 gramme per 100 cubic centimetres of the wine, while in the other the amount found was 0·026. This corresponds practically to the presence of cinchona bark constituents equal to five grains of the bark in two fluid ounces of the wine. While these results agree in regard to the active constituents present, there were unimportant variations in the amounts of alcohol, extractives, and mineral matters present in the two samples. Under medical direction the wine may serve an obviously useful purpose.

LIN AULAGNE.

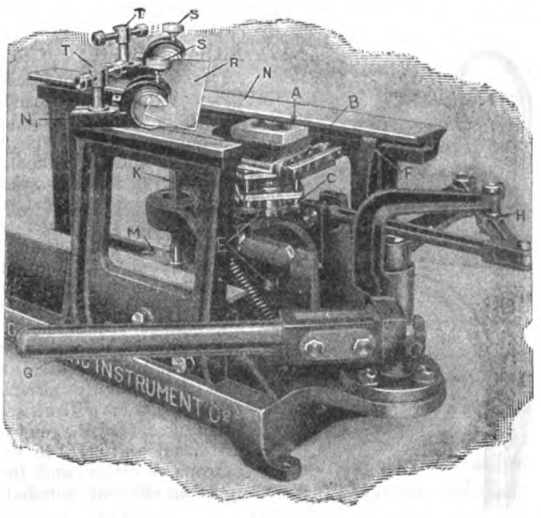
(E. AULAGNE, PARIS. AGENCY, ERNEST A. WHITE, 40, STANHOPE GARDENS, ILFORD, E.)

This linseed-meal poultice is most valuable and convenient in practice. It is very ingeniously constructed, and consists, it is stated, of specially prepared linseed (rendered antiseptic by boric acid), which is finely powdered over several layers of gauze, which are then compressed, sewn together, and made up in rolls from which a piece of any required size and shape can be easily cut off. On dipping the poultice in boiling water for a few minutes the meal absorbs a remarkable amount of water, the whole fabric becoming light and soft. An impermeable tissue is provided for covering the poultice during its application. We learn that the poultice answers admirably for suppurating wounds, whilst it can be readily employed as a mustard cataplasm by sprinkling a little dried mustard over the linseed. We regard the little appliance as an excellent help when a fomentation is needed.

New Inventions.

A LARGE SLIDING MICROTOME.

OUR attention has been drawn to a microtome that has been recently introduced by the Cambridge Scientific Instrument Company which presents some novel features that are worth notice. The instrument has been specially designed to cut sections of unusually large objects, the full size of a paraffin or celloidin block with which it is capable of dealing being 150 × 120 mm. (6 × 4¾ inches). It is built on extremely rigid lines; the two sides (N and N_1) support a large knife (R) which can be firmly held at each end in such



a way that it forms any required angle with the edge of the object to be cut; a new feature is an arrangement by means of which the surface of the knife can be tilted through a measured angle and adjusted to that which experiment has shown to be the one most suitable for the class of material it is desired to cut; for example, paraffin may require a different angle from celloidin, and decalcified bone from

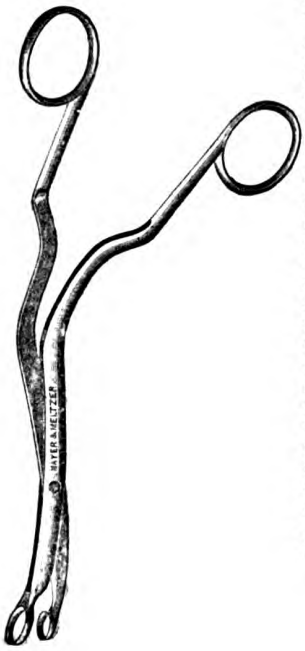
muscle or soft tissues. The block (A) containing the object to be cut is easily fixed to the object-holder, which can be adjusted to any position and is supported on a heavy carriage made to slide backwards and forwards by the movement of the lever (G). The guides of the carriage travel in two oiled chaunels, and it is claimed that all wear is automatically compensated for. The object-holder is fed upwards after each stroke of the lever by means of a ratchet and toothed wheel, while tearing of the material on its return journey past the blade of the knife is impossible owing to the fact that the surface remains low until its return is completed. The different parts of the machine are indicated by letters in the illustration but need not be pointed out in detail. The thickness of the sections can be varied from 0 to 0·06 mm. by adjusting an arm to a scale provided, each division on the scale corresponding to 0·002 mm. The object can be fed through a distance of 21 mm.

In practice the instrument has been found to work satisfactorily and to give no trouble; it is certainly necessary that great care should be exercised in embedding very large preparations, and attention should be given to such details as that of fixing the wood-block with absolute rigidity and of arranging the knife at the angle which is best for the particular material which is to be cut. No difficulty will be found in sharpening the knife on a good hone.

We have been especially impressed with the rigidity of the instrument and the thorough way in which the details of the construction have been carried out. The new features that have been embodied appear to fulfil most satisfactorily the purposes for which they have been designed. The possibility of being able to prepare microscopic sections measuring three or four inches in diameter, is one that will be readily appreciated both by those engaged in research, and perhaps even more by those whose business it is to teach normal and pathological anatomy, for, mounted as lantern slides, these sections project exceedingly well, and the advantage of being able to show what is practically a low power picture of a section on a screen in full view of any number of students will be easily understood. We understand that excellent contact photographic prints have also been obtained from sections cut by this instrument.

We have no hesitation in saying that its use will have wide applications in the future; its purchase should prove an economical investment, inasmuch as it is equally efficient for every class of work, and has all the appearances of being able to stand unlimited hard wear.

NASAL PUNCH FORCEPS.



I HAVE designed the forceps illustrated in the figure more especially for the removal of the anterior ends of the inferior and middle turbinated bones. They are made somewhat on the design of Luc's forceps, but the blades are made to punch or cut a piece cleanly out, and the peculiar jointing of the forceps ensures the accurate approximation of the cutting surfaces. I have used them in a number of cases and find them highly satisfactory, and they will also be found useful for the removal of septum and crest in submucous resection, and they form an efficient punch for removing portions of the tonsil. They are manufactured by Mayer and Meltzer, 71, Great Portland-street, London.

GEORGE W. BADGEROW, F.R.C.S.,
Senior Assistant Surgeon, The Throat Hospital, Golden-square, W.

CONVENTION OF THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

THE Twentieth Annual Convention of this association was held at Saratoga Springs, New York, on Sept. 13th, 14th, and 15th.

The President (Dr. Thomas D. Crothers, Hartford, Conn.) delivered an address on the Physics of Light Therapy.

The following reports of Standing Committees were presented: Dr. G. Betton Massey: On Direct Continuous Current, including Electrolysis, Electro-Chemical Surgery, Ionization, and all apparatus connected therewith. Dr. Frederick de Kraft: On Induced Currents, and apparatus. Dr. T. Harris Cannon: On Static Currents, and apparatus. Dr. S. M. McCollin: On Phototherapy, Radiotherapy, and apparatus. Dr. Fred H. Morse: On Mechanical Vibration Therapy, Exercise Therapy, and apparatus. Dr. Francis H. Munroe: On Hydrotherapy, Thermotherapy, and apparatus. Dr. Byron S. Price: On Dietetics. Dr. Thomas D. Crothers: On Research. Dr. W. Benham Snow: On Standard Therapeutic Measures.

The following papers were read:—Dr. Margaret A. Cleaves (New York): The American Electro-therapeutic Association; the Relation of its Work to Cellular Changes; a Retrospective *Résumé*. Dr. J. W. Torbett (Marlin, Texas): Report of X Ray Treatment of Spleno-Myelogenous and Lymphatic Leukæmia, with Blood Findings of Each. Dr. G. W. Strobell (Ruthland, Vt.): Report of a Case of Splenic Leukæmia Successfully Treated by Modern Methods. Dr. Louise G. Robinovitch (New York): Electric Anæsthesia in Human Surgery; Electric Sleep by Wireless and Unipolar Currents; Displacement Currents. Dr. Herbert McIntosh (Boston, Mass.): Psoriasis. Dr. J. D. Gibson (Denver, Col.): Some Blood Studies in Roentgen Therapy. Dr. William Benham Snow (New York): The Treatment of Inflammation. Dr. Frederick de Kraft (New York): Electricity in the Treatment of Gout. Dr. A. W. Baer (Chicago, Ill.): Treatment in Infantile Paralysis. Dr. Anthony Bassler (New York): Some Laboratory Findings in Diseases of Metabolism, which Question that these are Only of Metabolic Origin; the Rôle of Chronic Intestinal Disorders in the Production of Some of Them. Dr. Herbert F. Pitcher (New York): The Etiology and Treatment of Eczema. Dr. Frank E. Peckham (Providence, R.I.): Osteo-arthritis of the Spine. Dr. F. Howard Humphris (London, England): Lumbago. Dr. G. Betton Massey (Philadelphia, Pa.): The Treatment of Chronic Metritis with Decensus or Displacement. Dr. J. H. Kellogg (Battle Creek, Mich.): Light Baths. Dr. Samuel J. Harris (Boston, Mass.): Treatment of Cataract by Electricity. Dr. William J. Clark (Philadelphia, Pa.): Oscillatory Desiccation in the Treatment of Accessible Malignant Growths and Minor Surgical Conditions: a New Process. Dr. Fred. H. Morse (Boston, Mass.): Reaction Effects of Physical Treatments. Dr. Gustavus Werber (Washington, D.C.): Enforced Compensation. Dr. G. Betton Massey (Philadelphia, Pa.): Remarks on the Electrical Treatment of Interstitial and Hæmorrhagic Fibroids of the Uterus. Dr. J. Willard Travell (New York): A Noteworthy Case of Sciatica. Dr. W. H. Mick (Omaha, Neb.): Untoward Action of the X Ray and its Treatment. Dr. Frederick C. Tice (Roanoke, Va.): The X Ray and Light in the Treatment of Infection. Dr. Arthur W. Yale (Philadelphia, Pa.): Modern Malpractice in Gynæcology.

There was an interesting exhibition of electrical appliances for use in medicine and surgery, including two or three new electrodes for the purpose of administering fulguration, X ray tubes designed to withstand heavy currents, and a new form of static machine (a Baker modification of the Toepler-Holtz) which was capable of passing 7 or 8 milliampères through an X ray tube of medium hardness.

Dr. F. Howard Humphris (London) was elected a vice-president of the association.

ROYAL UNITED HOSPITAL, BATH.—Mrs. C. Baker of Bathampton has given £500 to the funds of the Royal United Hospital to endow a cot in the children's ward in memory of her late husband.

THE LANCET.

LONDON: SATURDAY, OCTOBER 15, 1910.

Medicine and the Church.[1]

SYMPOSIA upon disputed subjects are a literary device well known from classical times downwards by which conveniently to weld various opinions into a more or less harmonious whole; and the papers which are collectively issued under the title "Medicine and the Church" form an admirable epitome of the opinion held by leading clerics and physicians, together with some laymen, upon a matter which has of late years assumed a revived importance. Twelve writers have contributed towards the book in addition to the editor, who supplies an introduction, and the Bishop of WINCHESTER, who has contributed a "foreword." Among them are the Bishop of BLOEMFONTEIN, Sir CLIFFORD ALLBUTT, the Rev. Dr. ROBINSON, Prebendary FAUSSET, Dr. T. B. HYSLOP, Dr. JANE WALKER, Mr. STEPHEN PAGET, and the Hon. SYDNEY HOLLAND, all names which constitute a guarantee of sound thinking, and as a result we have a work of real and practical utility.

The question debated in the book is one which is as old as medicine itself, or, to be more exact, which supplied its own answer in the dawn of our profession. For at that day the priest and the medicine-man were one, as they are still among the few primitive peoples who are left on the globe, and whose ethics are known to us with any certainty. But as time went on, not only did the office and calling of the priest become divorced from that of the medical man, but, to speak generally, the first looked upon the discoveries of science with unbelief or positive antagonism, while the second in his turn took up an attitude of indifference or of enmity towards anything to which he could not apply the tests of reason. For many centuries, too, the science of medicine was upon a very low level, and no proper distinction was made between that class of disease which for want of a better name is called functional and that in which there is really some organic change. Hence arose cures—cures which appeared to be against the course of nature and were miscalled miraculous by those who forgot that great saying of ST. AUGUSTINE, quoted by Prebendary FAUSSET, "Portentum fit non contra naturam, sed contra quam est nota natura." After the Reformation the Church of England seemed, except in her formularies, to forget that her children had bodies as well as souls, while in the Roman Church the office of Unction of the Sick became transmuted into the unction of those who are leaving this life for the next. Nor was the profession of medicine blameless, for there was a tendency to treat the disease rather than the patient, and to consider as matters of no moment affections which, although they did not owe their origin to any gross disturbance of tissue, were nevertheless of very real moment to the patient. In cases of this sort the quack spiritual healer finds his widest opportunity, and owing to his vagaries the true usefulness of "mental healing" has been obscured. It is to throw light upon this obscurity, and to consider the field of function which belongs to both medical man and priest in their dealing with the sick, that the papers in the bock before us have been written. All of them are good and worthy of careful consideration both by medical men and the clergy. If we give special mention to those by Dr. H. W. G. MACKENZIE, Dr. T. B. HYSLOP, Dr. JANE WALKER, the second paper by Prebendary FAUSSET, and the contributions of the Bishop of BLOEMFONTEIN and Dr. ROBINSON, we none the less would not have missed willingly the two short contributions from Mr. STEPHEN PAGET and Mr. SYDNEY HOLLAND respectively, or the admirable little essay by Mr. ELLIS ROBERTS entitled "The Church and Mental Healing," which from the point of view of an educated man, who is presumably neither medical man nor cleric, sums up some difficult points in a very clear manner. Taken as a whole, the various papers set out an opinion much the same as that of the Lambeth Report of the Committee upon "Ministries of Healing"—namely, that there is room for both priest and physician in the sick room, and our own opinion tallies with this. There is no medical man who will deny the power of the mind over the body, no one who will not agree that if a patient desires to, and thinks that he will, get well, he is, *ceteris paribus*, in a much better position for recovery. Prayer, as both Dr. JANE WALKER and Dr. HYSLOP point out, whether as a personal habit or as offered for the sick by another, is of great value in securing mental stability and that quiet mind for which the Prayer Book contains a petition. A tactful and experienced priest may often be of the greatest assistance to a medical man, and no practitioner would, if his patient desired to see such an one, forbid his entry to the sick room. For the medical man knows that the ministrations of the wise priest constitute a very different affair from the folly or irreverence of "Christian Science."

The medical profession cannot be expected to take seriously the healings reported to the credit of Mr. JAMES M. HICKSON of the Society of Emmanuel; and to responsible clergymen who, seduced by the desire to preserve an open mind, may too easily credit such performances we would commend that warning of JEREMIAH, "I have not sent these prophets, yet they ran." The Office for the Visitation of the Sick, imperfect though it be and as the Lambeth Committee considered it to be, together with prayer by the sufferer himself, by his friends, and above all by the collective body of the Church in public worship, are far more efficacious than any ministrations by self-styled "spiritual healers." To quote the Bishop of LONDON, "If I was ill, I would send for the best doctor, and get my parish priest to come and pray by my side, believing that the double work of JESUS CHRIST is shared by two great professions. It would be bad for either to be banished from the sick room." The spirit of that sentence is, on the whole, the spirit of the collected papers contained in "Medicine and the Church," and, in our opinion, it is commendable.

[1] Medicine and the Church: A Series of Studies on the Relationship between the Practice of Medicine and the Church's Ministry to the Sick. Edited by Geoffrey Rhodes. London: Kegan Paul, Trench, Trubner, and Co., Limited. 1910. Pp. 298. Price 6s. net.

Operations and Mortality.

FROM time to time the suggestion is put forward that sufficient care is not taken by surgeons in the selection of cases chosen for operation, and many of our lay critics go further and allege that in the performance of operations there is often an absence of a due sense of responsibility. To ensure that greater care shall be exercised in these matters it has been urged on more than one occasion that an inquiry—an inquest, in fact—should be held on all patients who die after an operation, a situation which was discussed in THE LANCET[1] last week from its medico-legal aspect. The latest enunciation of these ideas is contained in an article in the current number of the *Socialist Review*, where an attack is made on the motives prompting the performance of many operations, on the selection of the cases, and on the modes of operation often adopted. The article in the *Socialist Review* suggests that as an inquiry has to be held when a fatal accident occurs in a mine in order to find out if due precautions have been taken to prevent its occurrence, or if the incompetence or negligence of anyone connected with the mine is responsible for the result, so a similar inquiry should be held whenever an operation is followed by a fatal result. The first categorical accusation against operating surgeons made in support of this proposition is that surgeons do not use adequate thought in diagnosing the case before proceeding to operation, and that consultation with their colleagues is rare as a preliminary measure. In our experience the pains taken with regard to diagnosis are as a whole very great, while certainly an appeal to other members of the staff is the usual custom in most hospitals as well as in private practice. In cases of any doubt a consultation is practically always held, so that the main ground for this attack is cut away.

For these accusations form an attack, and the attack continues with the pronouncement that even if the diagnosis is correct an operation is often performed unnecessarily. If appendicitis, for instance, is present, need an operation always be performed? We are told that the operating surgeon says "Yes," while every medical practitioner knows that many cases of appendicitis recover without operation, that recurrence of the affection occurs only in a small minority of the cases, and that the mortality of the operation is appalling. We find it stated that while some surgeons give a mortality as low as 3 per cent., others give anything up to 20 or 25; but the writer of the article informs us "that every practitioner knows that some surgeons have a mortality of 100 per cent." Such statements exhibit the harm which results from a little knowledge, for we are more inclined to believe the writer ignorant of the subject than that he wilfully misstates the case. It is not possible with any utility to make any general statement as to the mortality of operations for appendicitis. During the interval between two attacks an operation will give a mortality of under 1 per cent. in the hands of all those who have had a real surgical training. On the other hand, when an appendicitic abscess has burst into the general peritoneal cavity, and has set up peritonitis unlimited by the formation of any adhesions, and especially when many hours have elapsed between the perforation and the operation, the death-rate must be indeed high. Without operation death is certain; with an operation suitable for that state and condition of the patient some cases will recover. We do not believe that the practice of any surgeon will show a mortality of 100 per cent. in operations for appendicitis, as the writer asserts. Further, he maintains that a high mortality indicates a lack of judgment in diagnosis or incompetence in the execution of the operation, and he makes this statement without the least regard to the stage or severity of the disease. Somewhat similar statements are made with regard to operations for brain tumours, from which, we are told, not one in a hundred recovers. The purpose of the paper is stated to be the expression of the belief of the need for measures to be taken by the State to ensure that only justifiable and legitimate operations should be performed. The remedy suggested is that the State shall compel all hospitals, public, private, and cottage, to be registered, and to publish a percentage of recoveries for each disease and operation. The names of the physicians are to be given; in the case of a surgical operation followed by death the operating surgeon, whether in hospital or private practice, is to notify the coroner and an inquiry will forthwith be held. We have quoted sufficient from this paper to show the animus of the writer, who prefers to remain anonymous, sheltering himself behind letters representing academic distinctions. We do not admit the accuracy of the statements made by him. His statistics are worthless and the conclusions based on them are naturally untrustworthy, while his ignorance of the factors upon which mortality depends betrays him into crude fallacy.

None but the ignorant would venture to deny the value of modern surgery. As Professor WILLIAM THORBURN in his introductory address at the University of Manchester pointed out last week in our columns, the progress of surgery has resulted in an immense saving of life, limb, and suffering. Within the last 25 years at the Manchester Infirmary the death-rate from all causes after operation has fallen from 10·5 to 8·5 per cent., in spite of the fact that now nearly three-fourths of the patients in the surgical ward are operated on as against one-fourth 25 years ago. While in 1883 20 per cent. of the deaths after operation were due to infective conditions, now only 1 per cent. is due to such causes. There is a natural conservatism in many members of the medical profession, and the resistance to progress which manifests itself in opposing many suggested alterations in practice is by no means small. We would not for a moment imply that every modification of surgical treatment is necessarily an advance, indeed we wrote to the contrary effect quite recently. Yet there will always be found too many ready to cry out that a new procedure is unnecessary or even harmful. When anæsthesia was first introduced there were not a few who urged that anæsthesia was unnecessary for operations, as will be seen by reference to the medical periodicals of the time. It is true that patients have died from anæsthetics since; it is true that patients in the future will die from anæsthetics, however carefully, however judiciously administered; but

[1] THE LANCET, Oct. 8th, 1910, p. 1099.

shall we therefore refuse to avail ourselves of these valuable agents in operation? Let us think of the thousands, of the tens of thousands, who have benefited by this great step in advance in surgery. We regret the deaths; we would modify our procedure in any way which would avoid such a distressing occurrence as death from anæsthesia; and it may be that in the future some safer methods of anæsthesia may be produced. But meanwhile we cannot, we must not, refuse to avail ourselves of the use of anæsthetics during operations. There are ever those who are ready to cry unjustifiable when some new operation is proposed or performed. When ovariotomy was first introduced the unfavourable results led many members of the medical profession to consider that the operation was unjustifiable, and that any operator performing it deserved prosecution for manslaughter. But, in spite of this intense opposition, a few surgeons persisted. In Sir SPENCER WELLS'S first hundred cases there was a death-rate of 34 per cent. With each hundred the mortality diminished, and in his tenth hundred the death-rate was only 11. We may be sure that if any mechanism had existed in those early days of ovariotomy for bringing Sir SPENCER WELLS'S results before a coroner's inquest, in many of the cases a verdict would have been returned that he had performed an unjustifiable operation, and the result of such a verdict would have been the misery and death of thousands upon thousands of women. Ovariotomy has become a comparatively safe operation and the mortality of to-day is much less than it was 30 years ago. In the words of Sir JOHN ERICHSEN, "The procedure, formerly so fatal as to be pronounced unjustifiable, is now the most successful of all great surgical operations."

Much progress has been made, and many operations which were inconceivable a few decades ago are now widely and successfully performed. Nothing would tend to stem the onward progress of surgery so much as to make a surgeon liable to have his work tried before a coroner's jury, for that is what it amounts to. Inquiry would be made as to whether the operation were justifiable; as to whether it were performed with skill and care; and evidence would be taken on these points. The only persons present at the majority of operations, in addition to the surgeons, are the house surgeon, the dressers, and the nurses. Shall these be called upon to accuse or to justify the actions of the surgeon? We can imagine a certain sort of nurse, not necessarily the best sort, giving evidence as to the suitability or the capability of the surgeon, and we have little doubt that the jury would be more inclined to accept her evidence and opinion than those of the surgeon himself. Even a surgeon of equal competence to the operator himself, and present at an operation, is not always capable of judging of the difficulties encountered so well as the surgeon who does the operation. Then we cannot imagine a tribunal less fitted for deciding questions as to the desirability of an operation or the capability of a surgeon than a coroner's jury. The possibility of having to appear for trial before such a body would doubtless deter many surgeons from performing operations where the risk to life was great. And yet every experienced surgeon can tell of numerous lives saved by a timely operation in which the prospect of success was not great. If the patient and his friends know the risk of the operation and the chance of life if no operation be performed, and if they agree to the performance of the operation and the surgeon is willing to do it, who shall say them or him nay? The very life blood of true progress in surgery is the devising and the carrying-out of new operations or the employing methods unknown before; but what would be the result if the performance of a new operation or the use of a hitherto unknown method might subject the surgeon to the ordeal of a public trial? Few men would take the risk of unmerited public obloquy; and many, many patients would perish miserably.

A Historical Martyr.

CIRCUMSTANCES have made the death of MIGUEL BOMBARDA, our respected colleague, into a historical event of the first importance. One of ARISTOTLE'S many political inductions, repeated by subsequent thinkers, as, for instance, by HERODIAN in his sequel to SUETONIUS, that revolutions are often brought about by causes apparently accidental, nay, relatively trivial, has its latest illustration in the sudden change of government in Portugal. True, as ARISTOTLE himself and the chroniclers of Rome's decline and fall knew all too well, the causes in question would have had no effect but for predisposing circumstances which only awaited opportunity to find their inevitable issue. Still, the interesting fact remains that the assassination of a medical man, beloved as a citizen and in great request as a consulting alienist, was the occasion that gave direction and power to a vigorous and perhaps far-reaching explosion, not unexpected, but certainly startling, by which the world awoke at the end of last week to find the Portuguese monarch a fugitive and a Republican government established over the capital city of Lisbon. Dr. BOMBARDA was, by the most authentic account, professionally engaged in his consulting-room when a former patient, a lieutenant in a regiment of the line, who had with a certain measure of success been treated for cerebral derangement, called to report himself. In the course of the interview, in a sudden access of his ailment, he discharged three shots from a loaded revolver at the unfortunate BOMBARDA. One of these had taken deadly effect in the abdomen, but the victim, summoning up his fast-ebbing strength, overpowered his assailant just as his servants rushed into the room in time to hear his dying words: "Don't harm him. He is mad."

The incident is one of the most pathetic in the annals of the medical profession, as surely its sequel was one of the most dramatic. No sooner was the assassination known than the popular indignation, all too apt to "see its own in another's wrong," became possessed with the conviction that the crime was brought about by official instigation, or, at least with official cognisance, opponent as BOMBARDA was of the party in power, nay, representative in the recently elected Parliament of the Republican interest. Not even the authentic words that absolved the wretched assailant from premeditated crime could avail for a moment to stem the rising tide of resentment and revolt. The deed was loudly proclaimed as quite in keeping with the policy and procedure of the Royalist party, and the Liberals were

prompt to describe the incident as but the latest in a series of oppressive and despotic acts. Such was the instantaneous impression and comment of the piazza, and in this way the psychological moment arrived for the revolutionary explosion, the subversion of the old order, and the planting of the new *régime* on its ruins. It is not for us to forecast the political consequences of this movement, or its effects, immediate or remote, on the country itself or on Europe in general. We have but to record our sense of loss at the untimely, the tragic, end of an able and accomplished representative of the healing art in a sister country, whose skill as an alienist and energy as an organiser were appreciated far beyond the city in which he taught and practised, and whose last words, we hope, will prove a bequest to his compatriots to temper justice with mercy, and to use their newly acquired power in the humanitarian spirit in which he lived and died.

Annotations.

"Ne quid nimis."

PHARMACEUTICAL EDUCATION.

IT is highly probable that before many years have gone by the system of pharmaceutical training and education at present in vogue will undergo a fundamental change. The Council of the Pharmaceutical Society recently obtained powers to require candidates for the statutory examination to undergo a defined course of study, and the question of devising an appropriate course is now under consideration. In the meantime there is no compulsory curriculum of study for pharmaceutical candidates, and it is no part of the duty of the Council or the Board of Examiners to inquire of candidates how or where they obtained their knowledge. Some years must necessarily elapse before the projected changes can be put into force, and the pamphlet entitled "How to Become a Pharmacist," edited by Mr. John Humphrey and published by the Pharmaceutical Press (price 1*s.*), provides those who desire to adopt pharmacy as a career with all the information about the necessary qualifications. The first step to be taken is to pass one of the preliminary examinations approved by the Pharmaceutical Society, such, for example, as the matriculation examination or the senior school examination of the University of London. Then follows an apprenticeship of three years, during which period the student should have ample opportunity to make practical acquaintance with the methods of manufacturing galenical preparations and to obtain experience in dispensing physicians' prescriptions; if he is fortunate, the student will also be able, during his apprenticeship, to attend classes at one of the numerous technical schools and so obtain elementary instruction in some of the subjects of the minor examination. When the apprenticeship is completed it is usual, and for the vast majority of students essential, to attend a course of lectures and laboratory instruction at a school of pharmacy. The Pharmaceutical Council recommends that such a course of instruction should occupy a period of not less than six months, and that such period of study should include 60 lectures in chemistry, 45 lectures and demonstrations in botany, and 25 lectures and demonstrations in materia medica. Judging from the high percentage of unsuccessful candidates at the qualifying examination, it seems evident that the council's advice is often neglected. The subjects of the examination are botany, chemistry and physics, practical chemistry, materia medica, pharmacy, practical pharmacy, and dispensing and prescription reading. The examination is of a searching character, and all who pass it should be capable of carrying on the business of pharmacy efficiently. The pamphlet also contains particulars of the "major" examination, which confers the title of "pharmaceutical chemist" on successful candidates. In addition, it includes information concerning various scholarships and prizes.

FALLS FROM GREAT HEIGHTS.

FALLS from great heights, not necessarily fatal in their results, are becoming so frequent in these days of aeroplaning that it may prove of interest to refer back to the classics of the subject, which, however, are not as ample as might be expected. Writing in 1841 of a fall from an immense altitude which did not result in death, a French observer, M. Manzini, declares that he had searched in vain in the annals of science for a similar case. We can well believe it. The victim or patient was a *tapissier*, who had been engaged in putting up decorations, on the occasion of the belated obsequies of Napoleon the Great, in the lofty dome of the Church of the Invalides in Paris. When busy moving a ladder on the top of a high scaffolding he overbalanced himself, and, in obedience to some obscure instinct, jumped clear of the ladder and the platform, crying to his fellow workmen, as only a Frenchman would, "Tiens, me voilà parti!" With these cheerful words on his lips, he fell 82 feet, bounding in one place off the roof of a little dome, which caused him to describe a second parabola in the air, and landing finally, feet first, on the slate roof of a small sacristy. Crashing through the slates, he landed astride a rafter, where he was found sitting, surprised but coherent, for he was able to give his name and address when asked for them. He had no recollection of this, and became unconscious when put to bed shortly afterwards under the care of the great Pasquier. His insensibility lasted a very short time, however, and he made an extraordinarily rapid recovery, having sustained no apparent injuries either external or internal. At the end of a month Pasquier found him quite well. Manzini also records the case of his own fall from a great height when a child, and describes the feeling of blindness that came upon him, due to the rapidity of his descent, also the anguish of recovering his breath after it. Others, however, describe their sensations during a tremendous fall as being far from disagreeable. Thus, some nine years ago Professor Heirn, the geologist of Zürich, described "the flood of thought" that traversed his mind during a typical Alpine fall, which began on an inclined plane. He saw beautiful scenes and visions of his past life as he fell, and reflected rationally on his death or the chance of escape. He felt no pain on striking the ground, but he heard a thud, which was the impact of his own head on a rock. Another Alpine faller thought about his insurance and his family. "Of the losing of my breath, of which people talk, there was no suggestion, and only the heavy fall on the snow-covered ground caused me to lose suddenly and painlessly all consciousness." Both these Alpinists insisted on the absence of anxiety from their minds when falling, while one certainly describes sensations similar to those felt by the drowning. Among classic English falls may be mentioned that of a steeple-jack, who in 1800 fell from the top of the church of St. George in Bolton-le-Moors to the ground, the whole distance traversed being some 120 feet. The man's skull struck some sheet lead upon the earth and left its impact upon it, but though this fall was quite unbroken as in the previous cases by scaffolding, rocks, and so forth, the man was only slightly injured and resumed work in a few days.

Recently a man with his boots on fell from the top of a cliff at Dover, the height of which was afterwards found to be 400 feet. He was picked up floating insensible in some five feet of water, but his boots were off, which proves that he must have retained sufficient consciousness on reaching the water to enable him to draw his boots from his feet. Both these cases are well attested. We wish we could be as sure of the truth of the story told of an *ouvrier*, who fell from a fourth-floor window and who, as he passed a lower one, was heard to remark with great rapidity and clearness, "Ca va bien jusqu'à présent pourvu que ça dure!"

THE ACTION OF ATOXYL ON THE EYE.

THE discovery of the action of atoxyl and other complex organic arsenical compounds upon trypanosomes and spirochætes has caused them to be widely studied and extensively employed in numerous diseases. Unfortunately, atoxyl, in spite of its name and of its undeniable usefulness, has not proved to be entirely harmless, since a considerable number of cases of blindness following upon its use are now on record. These recorded cases are critically studied in an interesting article published in the *Berliner Klinische Wochenschrift* of Oct. 3rd by Dr. Kurt Steindorff of Berlin. He has been able to collect records of as many as 95 cases of disturbance of vision or actual blindness following on the use of atoxyl. It would seem that the onset of the ocular symptoms is often preceded by some evidence of toxic effects—such as general languor, vertigo, headache, vomiting, colicky pains, dysuria or anuria, hypothermia, tinnitus, and deafness. The ocular symptoms comprise a more or less marked diminution of the power of sight, and the field of vision is concentrically diminished, but more on the nasal than on the temporal side. The ophthalmoscopic examination at first gives negative results, save that the retinal arteries may be narrowed, the veins somewhat hyperæmic. After a few weeks the papillæ begin to appear pale, and the condition progresses with uncomfortable rapidity to complete optic atrophy, associated with increasing dimness of vision going on to complete blindness. The prognosis of the ocular symptoms is the more grave from the facts that the immediate stopping of the drug does not, as a rule, suffice to stop the progress of the condition, and that treatment has so far proved unsuccessful. In the majority of cases the blindness must be attributed to the atoxyl and not to the diseases for which it is given, since in most of these optic atrophy is a rare occurrence. It would appear that alcoholism predisposes to the development of atoxyl amblyopia, and that an eye already the subject of latent damage from other poisons, such as arsenic or mercury, is also more likely to be affected. Some cases published by Watermann showing a rapid diminution of vision in cases of tabetic optic atrophy lend some support to this view. A study of the doses and of the intervals of administration of the drug in the recorded cases throw but little light upon the subject. Beck suggests, however, that the most dangerous conditions are those in which small doses are given daily for long periods without intervals, and those where large doses are injected with very short intervals. The method of administration, whether intramuscular, subcutaneous, or subarachnoid, does not appear to exert any special influence upon the incidence of atoxyl amblyopia, nor do questions of sex, age, or severity of the disease for which the drug is given. The pathology of the condition is obscure, but it appears to be a simple progressive atrophy. So far Dr. Steindorff can only find one case recorded—that of Nonne—which has been examined microscopically. Unfortunately, the retina was not examined, but the optic nerve showed symmetrical degeneration by Marchi's method. This extended back to the chiasma. There were no inflammatory manifestations. The question as to whether the arsenic or the anilin constituent of the atoxyl molecule is responsible has been much discussed; both substances do in rare instances lead to ocular disturbance, but this is usually of the nature of an optic neuritis rather than a primary atrophy, as is the case with atoxyl. The general conclusions arrived at by Dr. Steindorff are that the atoxyl exerts its toxic effect directly, or that it is converted in the eye into some more poisonous reduction product. The substance arsacetin, introduced by Ehrlich, although less toxic than atoxyl, is less active therapeutically, and ocular disturbances have even been observed after its use. Dr. Steindorff, while admitting the value of atoxyl and allied substances, counsels the utmost care in their use. His interesting review of the subject has a useful bibliography of the recorded cases attached to it, and affords a valuable study of this important subject.

THE ROYAL VISIT TO SOUTH AFRICA.

ON Oct. 11th the Duke and Duchess of Connaught left London *viâ* Southampton for South Africa, where His Royal Highness will open the first Union Parliament on Nov. 4th. The programme of the Royal tour, which has just been issued, is a long one. The *Balmoral Castle*, in which the Royal party will travel, will on the outward voyage call at St. Helena, where the various visits will include one to the hospital. The programme for South Africa includes the presentation of St. John Ambulance certificates by His Royal Highness and the laying of the foundation-stone of University Hall at Cape Town, a visit to the hospital at Livingstone, a visit to the hospital and schools at Buluwayo, and the laying of the foundation-stone of the new university building at Pietermaritzburg. On Dec. 3rd the Royal party will leave Durban for England.

ANCIENT ANATOMICAL DRAWINGS FROM TIBET.

THE military expedition which reached Lhasa in 1904 has made us acquainted with some remarkable anatomical drawings of a very early date. A set of these drawings, which were found in the "Temple of Medicine" at Lhasa, was deposited in the India Office Library by Lieutenant-Colonel L. A. Waddell, C.B., I.M.S., together with some thousand volumes of rare and also of unknown treatises, including several on medicine. Lieutenant-Colonel Waddell has given a description of the drawings in the *Asiatic Quarterly Review* for October, 1910, and a faithful copy, made by a native artist, was presented some time ago by Major H. J. Walton, I.M.S., to the Museum of the Royal College of Surgeons of England, where it is now shown in the historical cabinet. The anatomical drawings show many points of affinity with those of early Greece. Some centuries before Alexander's invasion of India (325-27 B.C.) Rawalpindi in Northern India was famous as a place of medical learning, so that there may have been an exchange then between the medical centres of the east and west. In Lieutenant-Colonel Waddell's opinion the anatomical charts now found in Tibet were obtained from Northern India in an early Christian century. The main chart shows three figures, the central being described as a "chart for identification of the internal parts of the body." The right-hand figure, a female, is inscribed, "The method of disposition of the five deep veins for ascertaining the cause (of disease), and the superficial middle vein of the mystical circle of the breast." The left-hand figure, a male, bears the legend, "Delineation of the inner vessels (showing) the mode of connexion of the eight great veins of the hidden systems." The position of the blood and bile vessels in the right and left halves of the male body were supposed to be reversed in the female. The drawings cannot be said to show an accurate knowledge of anatomy. The blood and bile vessels are the parts which receive most attention. The Indian Buddhist origin of the chart is shown

by a row of 12 monks bearing Indian names, represented at the top of the drawing. We congratulate Lieutenant-Colonel Waddell on the interesting contribution which he has made to our knowledge of medicine in ancient India.

INTERMISSION OF PERNICIOUS ANÆMIA FOR 17 YEARS.

IN the *American Journal of Medical Sciences* for August Professor Alexander McPhedran of Toronto has recorded a case of pernicious anæmia in which there was complete intermission of the symptoms for the remarkably long period of 17 years. The patient was a physician, aged 49 years, engaged in a large country practice. He had been losing strength and growing anæmic for a year or two. He became so ill that he had to cease work in the spring of 1889. There were recurrent chills, a temperature of 104° F., marked delirium, severe vomiting, and diarrhœa. The skin was very pale with a lemon tint. The blood showed the characteristic changes of pernicious anæmia, the red corpuscles numbering 730,000 per cubic millimetre. There were retinal hæmorrhages in both eyes. Arsenic was given in increasing doses until 45 minims of Fowler's solution were taken daily. Improvement took place, and in a month the red corpuscles numbered 1,700,000, and in another month 3,250,000. Five months later the number of red corpuscles was normal and he appeared to have completely recovered and was able to resume practice. He remained well until the autumn of 1906, when he found himself growing weak and unequal to his work. When examined in March, 1907, he was very weak and of yellowish colour. He suffered from constipation with occasional diarrhœa. The red corpuscles numbered 1,926,000, and were generally large; poikilocytosis was marked, and both normoblasts and megaloblasts were present. The hæmoglobin was 39 per cent. He improved rapidly, and by the end of the month the red corpuscles numbered over 3,000,000 and there were no megaloblasts. In the early summer the corpuscles numbered over 4,000,000 and he felt correspondingly improved. He went to the Canadian North-West as far as the Rocky Mountains. Vomiting and diarrhœa were troublesome and he was much prostrated. Under rest he improved and was fairly well on his return in November. He was not seen again until January, 1908. He looked well, although his strength was failing. The appetite was fair, the tongue was clean, there was no stomatitis, the gums were healthy, the teeth having been removed some years previously. There was some diarrhœa for a day or two every fortnight; the stools were liquid but not offensive. The red corpuscles numbered 3,500,000 and showed only slight variation in size and shape. From this time he became gradually worse, with slight improvement for a few days from time to time. Vomiting frequently occurred. He became semi-conscious and died at the end of a month on May 17th, 1908, at the age of 68 years, over 20 years after the first symptoms appeared. He recovered from these, and remained in good health for 17 years, but during this period there was no opportunity for blood or other examination as he felt quite well and considered such unnecessary. A necropsy was not granted. The duration of the disease and the length of the intermission appear to be the longest recorded in the literature of pernicious anæmia. Indeed, the latter was so long that Professor McPhedran regarded the case as an example of permanent recovery, and had the patient died from pneumonia or other cause the case could with good reason have been so recorded. He suggests that in all the cases of permanent recovery claimed a relapse would have occurred if the patient were not cut off by some intercurrent disease, and he therefore differs from the statement made by Professor W. Osler: "When a patient has been six years free from trouble it seems safe to conclude that no recurrence will occur." The present case is a striking illustration of the uncertainty of the course and duration of pernicious anæmia. In many cases the prostration has been so great that death has been daily expected, and yet recovery has quickly taken place to the extent that the patients could resume work. As to the value of arsenic, Professor McPhedran finds that it is in the more acute cases, if in any, that it is beneficial. In these there are the symptoms of an acute toxæmia—fever, vomiting, diarrhœa, and often delirium. The arsenic is well borne, and as soon as the vomiting and diarrhœa cease improvement is often rapid. In the more chronic cases with progressive symptoms, often without acute irritative attacks but running slowly a downward course, he finds that arsenic is seldom beneficial, and causes stomatitis and gastro-intestinal disturbance. This is illustrated by the present case; in the first acute attack arsenic was well borne and recovery was rapid, not necessarily because of the arsenic; in the second attack even small doses caused stomatitis and epigastric distress.

REST-CURES FOR THE POOR.

A CORRESPONDENT has recently drawn attention in the press to the defect which exists in this country in the provision of accommodation for those of the sick poor whose affections require treatment by rest. That neurasthenia and analogous disorders exist among the class from which hospital out-patients are drawn there can be no sort of doubt, for the out-patient departments of the general hospitals furnish numerous examples, while the similar departments of the special hospitals dealing with nervous disorder overflow with such cases. Without committing ourselves to an opinion that the "work-shy" are invariably of a neurasthenic diathesis, we are sure we are not over-stating the case when we affirm that many such are incapable of work because they present just those symptoms which are characteristic of some of the functional disorders. The effect of being out of work is well known among those who labour for the benefit of the unemployed. No matter how willing a man may be to work, he is, after the privations and anxieties of a period of unemployment, incapable of the quantity or quality of effort which he was wont to exhibit in former times, and it is found to be idle to expect it of him. But it is scarcely for such cases as these that provision for treatment is demanded. There is a very large number of individuals whose daily work is beyond their physical capacity and who, further than this, are harassed by temporary or, worse still, long-continuing worry. Such factors as these are alone sufficient to produce nervous exhaustion, and if they are assisted in their nocuous action by the weakly character of the nervous system of the particular person who is subjected to them, disaster is very likely to ensue. Some small provision is, in fact, made for the treatment of patients of this class. Very occasionally they may be found in the wards of a general hospital, and rather more frequently in the wards of the three hospitals devoted to the treatment of nervous disorder which exist in London. There can be but little doubt that if these particular hospitals, instead of being almost constantly pressed for money, met with more general support far more could be done in the provision of rest-cures for the poor than is now possible. We have from time to time expressed a hope that the day may not be far distant when advantage may be taken of the generous gift made, now some years ago, by Dr. Henry Maudsley for the purpose of building a hospital for mental disorder. Our own aspirations are for an institution which may combine out-patient departments, wards for the treatment of organic nervous disorder, functional nervous disorder, and mental

disorder—if the two latter can in fact be separated legitimately one from the other—a department designed for the reception of those for whose lesions there is no hope of repair, and lastly, teaching and pathological departments. In such an institution there might be hopes of ample accommodation for those requiring rest-cures. Institutions of like character are possible in lesser and poorer cities in other countries, and we see no reason why Dr. Maudsley's gift should not be utilised as a basis upon which to rear in the largest city in the world such a structure as we have outlined.

A SCHOOL STRIKE.

COMPLAINTS are not seldom heard of the difficulty of impressing parents of the working-classes with the necessity for sanitary precautions in the matter of infectious disease. At Booker, near High Wycombe, however, the lesson appears to have been learnt almost too well, for the zeal of the fathers and mothers to protect their children who should be attending the council school has recently reduced the attendance there from 100 to 20 scholars, owing to the fear that they may become infected by contact with the children of the caretaker at the local isolation hospital. It is stated that the parents refuse to be convinced by the school medical officer, and that they not only decline to send their children to the school, but have combined in censuring the sanitary authority for employing as caretaker a man with a young family. The strike, if such it may be called, must have met with willing support on the part of the children, who are probably not otherwise composed of strict sanitarians, and who possibly do not pay as willing attention to measures useful for preserving their health, such as brushing their teeth and observing personal cleanliness, as they do to their parents' desire that they should enjoy a holiday.

THE ACTION OF HUMAN FŒTAL EXTRACTS UPON MALIGNANT TUMOURS IN MAN.

Dr. Fichera, continuing his research work on the biology of implantations of fœtal and neoplastic tissues, contributes to the *Policlinico* an important paper on the Action of the Products of the Autolysis of Human Fœtal Tissues upon Malignant Tumours in Man. Previous experiment on rats had shown the resistance which could be induced in otherwise susceptible rats to implantation of malignant tumours by previous implantation of fœtal tissues, and, further, that injection of the products of autolysis of such tissues could inhibit the growth of implantations of malignant tumours, implantations which in the ordinary course of events would have invariably caused death. The observations upon the human subject were begun in September, 1909. Thirty-six cases have been treated, all past surgical cure; 29 had been previously operated on. In all cases the diagnosis was established histologically, and in all cases during the progress of the case microscopic examinations were made of fragments removed by excision, in some cases as often as eight times. Of the 36 cases, 14 abandoned the treatment almost at the commencement for various reasons; 4 cases, though favourable, were of too recent date to pronounce upon, so that 18 cases remain. Of these, 8 have shown no improvement. Of the other 10, 5 are reported cured and 5 are well on the way to complete cure. The 5 complete cures are composed of 3 cases of carcinoma of the breast with multiple metastases, 1 case of carcinoma of the terminal portion of the rectum, and 1 adeno-carcinoma of the thyroid gland. The injection may be given either at the site of the disease or at a distance. Injections at the site of the disease give rise to areas of hæmorrhage and necrosis, while injections given elsewhere in the body cause mainly cytolysis with a moderate growth of connective tissue to replace the tumour. Metastases are often extremely sensitive to the autolytic action and may disappear without leaving any trace. Large tumours, on the other hand, require a long course of treatment before the malignant growth is wholly replaced by connective tissue, and especially where local injections have been practised there may remain a large tumour of sclerotic connective tissue in place of the original growth. The constitutional effects of the injection are very different, according as to whether they are made into the tumour or at a distance; in the former case there may be a sharp rigor with temperature 102° to 104° F., while the same dose given in some other part of the body will give rise to no disturbance. This initial disturbance Dr. Fichera considers a toxic phenomenon, and explains its production in the case of local injections by the abundance and fragility of the vessels in the tumour, and by the possible entrance into the circulation of the products of the cytolysis of the new growth. The action of the fœtal extract he considers direct and selective, and gives a number of good reasons for this view. From this follows a relation between the dose injected and the size of the tumour. To avoid the use of too big a dose he has recourse to the more energetic action of the injection at the site of the disease; also in the case of large tumours he would advise excision of the tumour in addition to treatment by injection. The extracts used were made from fœtuses of from two to six months of intra-uterine life. The tissues are placed in physiological saline solution with the addition of a certain quantity of thymol or carbolic acid, and sterile olive oil or toluol is placed on the top. The mixture is kept in the thermostat at 37° for about two months. The dose is 2 or 3 cubic centimetres, and this is injected from two to four times a week. The treatment lasts a variable number of months.

ISABEL THORNE.

MEDICAL women have lost a valued friend and supporter by the death of Mrs. Isabel Thorne, who for more than 30 years was honorary secretary to the London School of Medicine for Women. Her early married life was spent in the East, and she soon became aware of the need for medical women in India and China. On her return to England about 1868 she endeavoured herself to obtain a medical qualification, but at that time no medical school would admit women, nor were qualifying examinations open to them in Great Britain. Miss Elizabeth Garrett had obtained the L.S.A. diploma, but this privilege had been denied to other women. In 1869 the Senate of the University of Edinburgh decided to admit women to the study of medicine in separate classes, and Mrs. Thorne, with others, went to Edinburgh. The following unanswerable and eloquent appeal made by Sophia Jex-Blake, a medical student at Edinburgh, and published in THE LANCET of July 9th, 1870, will serve to show the position taken up by women students and the nature of the opposition they had to overcome. "State clearly what attainments you consider necessary for a medical practitioner; fix your standard where you please, but define it plainly; put no obstacles in our way; either afford us access to the ordinary means of medical education, or do not exact that we shall use your special methods; in either case subject us ultimately to exactly the ordinary examinations and tests, and if we fail to acquit ourselves as well as your average students reject us; if, on the contrary, in spite of all difficulties, we reach your standard, and fulfil your requirements, the question of 'mental equality' is practically settled so far as it concerns our case; give us, then, the ordinary medical licence or diploma and leave the question of our ultimate success or failure in practice to be decided by ourselves and the

public." Unfortunately for the adventurous band of lady medical students in Edinburgh the General Council of the University, by a majority of one, rejected the proposal to admit women to the same classes and privileges with men as students of medicine. The next step was to star a school of medicine for women in London, and Mrs. Thorne became its honorary secretary, living to see her life's work crowned with success and rewarded by the knowledge that it had achieved a safe place and recognition among metropolitan medical schools.

AN UNUSUAL CASE OF URÆMIA.

CASES of uræmia present numerous phenomena and combinations of symptoms. The diagnosis is frequently difficult, especially when the nervous system is involved. In another column we publish an interesting case recorded by Dr. G. Parker, in which facial paralysis and intestinal ulceration were almost the first symptoms noted. In the paralytic form of uræmia hemiplegia may occur suddenly without any gross lesion being discovered after death; a monoplegia may also show itself, but peripheral facial paralysis is rare, and, as Dr. Parker remarks, it is difficult to determine its exact pathology. Various attempts have been made to explain the nervous disturbances in uræmia. One theory is that the resulting symptoms are due to the action in the nerve cells of the poisons generated by the disease circulating in the blood-stream. Another theory is that the symptoms are produced by the cerebral œdema or cerebral anæmia causing excitation or paralysis of the nerve structures. Possibly in the case we are considering, Dr. Parker's suggestion that the facial paralysis was due to a hæmorrhage or œdema in the structure of the nerve is the correct one. The severe hæmorrhage from which the patient suffered was probably due to secondary inflammation of the bowel which may occur in chronic renal disease and which may occasionally assume an ulcerative form. The resistance of the tissues to the invasion of microbes is considerably diminished in disease of the kidneys, and hence not only are the mucous membranes likely to be attacked, but the malady frequently assumes a serious form and death often occurs. Dr. Parker gives a good account of his case and his remarks on the pathology of the symptoms noticed are interesting and instructive.

THE EHRLICH-HATA PREPARATION IN THE TREATMENT OF MALARIA.

IT was inevitable that a method of treatment which claims the power of killing pathogenic parasites within the body without damaging the tissues should be applied to the cure of other diseases than syphilis only. H. Werner has used "606" in the treatment of malaria at the Hamburg Institute for Marine and Tropical Diseases in 22 cases, and gives a brief report of his results in the *Deutsche Medizinische Wochenschrift* of Sept. 29th. Eleven of his cases were of the tertian and 11 of the æstivo autumnal type. A most interesting feature of the results was the difference between the reaction of the two types. In the tertian cases injection was followed, in an average period of 24 hours, by disappearance of parasites from the peripheral blood; moreover, so far as observations covering some weeks show, they did not reappear except in three cases in which the dosage had been below the average of 0·6 gramme. In the æstivo-autumnal cases the results were by no means so encouraging. In five instances a single dose sufficed to banish the parasites from the peripheral blood, but this was only temporary, and within a few days they reappeared. In the remaining six cases of the æstivo-autumnal type the treatment had no effect upon the circulating parasites. Various methods were used; at first intra-muscular injection was practised, then the subcutaneous and intravenous methods, and in the last case a combination of the two latter. Apparently no untoward consequences were noted. Werner's opinion is that "606" is a powerful antimalarial remedy, but its use should be restricted to cases resistant to or intolerant of quinine.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND: MUSEUM DEMONSTRATIONS.

THE courses of demonstrations, instituted some years ago by the Council of the Royal College of Surgeons of England in connexion with the Museum, are likely to become permanent additions to the advanced teaching resources of medicine in London. An autumn course is to be given by Dr. A. Keith and Mr. S. G. Shattock, Hunterian Professors of the College. The first demonstration will be given by Dr. Keith in the theatre of the College, Lincoln's Inn Fields, on Friday, Oct. 21st, at 5 P.M., when specimens will be shown which illustrate obstruction of the bowel produced by (1) defects of the diaphragm; (2) by peritoneal pockets; and (3) by imperfect fixation of the mesentery. On Monday, Oct. 24th, at 8 P.M., Mr. Shattock will deal with the specimens which illustrate lesions of syphilis. On subsequent Fridays and Mondays, as will be duly noted in our "Diary of the Week," the following sections of the Museum will be dealt with: specimens illustrating the various forms of imperfect differentiation of sex in man, specimens illustrating the lesions of rickets and cretinism, specimens of acromegaly and of the injuries and diseases of arteries. The demonstrations are open to all medical men and advanced medical students.

WE have learned to our great regret of the death of Professor Ernst von Leyden, the successor of Traube at the Berlin Clinic. His address at the Twelfth International Medical Congress at Moscow in 1897 on "Contemporary Methods in the Treatment of Tuberculosis," in which he advocated the notification of phthisis and maintained that all the various points in a successful scheme of treatment were only obtainable in a properly conducted sanatorium, drew much attention at the time and formed the subject of a leading article in our columns.

THE opening address of the winter session at the Central London Throat and Ear Hospital will be given at 4.30 P.M. on Monday, Oct. 17th, by Dr. Purves Stewart on Certain Intracranial Diseases associated with Nasal, Aural, and Laryngeal Symptoms, illustrated by lantern slides. The annual dinner of the medical staff of the hospital will take place the same evening at the Trocadéro Restaurant, when Mr. W. Stuart-Low will occupy the chair. Past and present students desiring to attend are invited to apply to the secretary.

THE Gresham Lectures, consisting of four lectures on Ancient and Modern Surgery, will be delivered by Dr. F. M Sandwith, Gresham Professor of Physic, on Oct. 25th, 26th, 27th, and 28th, at the City of London School, Victoria Embankment, E.C. The lectures are free to the public and will begin each evening at 6 o'clock.

WE regret to announce the death of Dr. John Anderson, C.I.E., the well-known authority on tropical diseases, which took place on Monday last, Oct. 10th. He had been a complete invalid for many months.

MEDICAL GOLF AT BATH.—A match was played at Bath last week between teams representing the medical men of Bath and Bristol respectively, and resulted in a very easy win for the latter team.

RADIUM AND RADIO-ACTIVITY.

ABSTRACT OF AN ADDRESS BY DR. GUYENOT.

AN interesting lecture directing attention to the therapeutic application of radio-active substances was recently delivered to the Medical Society of Aix-les-Bains by Dr. Guyenot, director of the Physio-Therapeutic Institute of that place. The lecturer, after giving an attractive sketch of the history of the discovery of radium and of the investigations which led to the revelation of its remarkable properties, proceeded to describe its physiological action, the first evidence of which, he said, was on the skin, as M. Becquerel found to his cost on several occasions. The tips of his fingers, which had come into contact with tubes and capsules containing radio-active substances, became hard, white, and very tender. The inflammation lasted about a fortnight and was followed by shedding of the skin. The tenderness, however, persisted for upwards of two months. Becquerel, too, was the victim of another accident which has become famous. In April, 1901, he took up a tube containing very radio-active chloride of barium and put it in his waistcoat pocket. His assistant warned him that it was somewhat risky, but he paid no attention and went off with the tube. It was a sealed tube wrapped in paper and enclosed in a cardboard box. The rays, though weakened by the several layers, were powerful enough to excite phosphorescence through his clothes. M. Becquerel kept the tube in his pocket six hours, and a few days later, without having felt any pain, he noticed a patch of redness on the skin, which gradually grew darker, its outline corresponding to the shape of the tube. The skin was shed on April 24th, leaving a suppurating wound which took 45 days to heal. During this time a second oblong patch made its appearance, corresponding to another corner of the pocket that had held the barium. It having been less exposed to the action, the inflammation did not supervene until 35 days after the contact and was only superficial. This action of radium on the skin has led surgeons to try its effect in the external treatment of certain skin diseases and tumours of various kinds. These burns are similar to those produced by the X rays, with the same period of incubation, running the same course, and ending in the same way.

In regard to the action of radium on bacteria, X rays are not bactericidal, whereas radium is markedly so, especially certain of its rays (the alpha rays). Ashkinas and Strebel found that cultures of B. prodigiosus were attenuated by radium rays. Caspari tried the effects of radio-active injections on tubercle bacilli introduced into the anterior chamber of the eye of a guinea-pig and on the diphtheria organism introduced into the muscles and no infection followed. Pfeiffer and Friedberger placed 25 milligrammes of bromide of radium, with a radio-activity of 50,000, 6 centimetres from a culture of the typhoid bacillus for 24 hours without any result, but at a distance of 1 centimetre the growth was completely arrested. Similar experiments carried out by Hoffmann arrested the development of the staphylococcus and the bacillus anthrax. As regards the action of radium on ferments and toxins, the rays act in different ways on the various ferments. Some lose their efficacy, while others are not affected or are rendered more active. Invertin and emulsin (Victor Henri and André Mayer), hæmolysin (Danysz) and lactic fermentation (Ch. Richet) are attenuated, while, on the contrary, proteolytic ferments, pepsine and pancreatin (Bergell and Braunstein) are rendered more active. According to Tizzoni and Bongiovanni, the rays exert a very marked influence on the virus of hydrophobia. Not only do infected spinal cords that have been exposed to the rays no longer transmit the disease, but they can be utilised for vaccinating purposes. Phisalix tested the influence of radium emanation on the toxicity of venoms and found that while serpent venom lost its toxicity, those of the salamander and toad were not affected thereby.

As to the action of radium on the nervous system, this is seen in the fact that when small animals are exposed thereto we get certain nervous symptoms. When X rays are brought to bear on small animals we often get symptoms of paraplegia, but only when intense radio-dermatitis has been produced, so that we are not in a position to distinguish between a direct and a transmitted nervous lesion. No such difficulty presents itself with regard to radium, the central nervous system being vastly more sensitive to its influence than is the skin. For instance, by the introduction beneath the skin of a mouse a month old of a tube containing about 1 centigramme of radium with a radio-activity of 500,000, placed exactly over the spinal column and part of the skull, within three hours we get symptoms of paralysis. In seven or eight hours the mouse is seized with convulsions, and if the tube be left *in situ* these become more and more frequent and the animal dies in from 12 to 18 hours. Mice a year old do not die for from six to ten days. The lesions appear to vary according to the age of the animals, and according as the nervous system is or is not protected by bony or cartilaginous tissue. Death is rapid in young animals, whereas in adults it is slow, or we may only get atrophic lesions (London). The larvæ of insects placed in glass boxes along with a tube of radium are paralysed in 24 hours and die in two or three days, and here, again, it is the nervous system that seems to suffer most (Danysz). M. Danysz also investigated the action of radium on small animals at a distance, and he found that the effects were much the same but took longer to be produced. Experiments have been carried out to ascertain the action of radium on the peripheral nerves. Beck applied a tube of radium over the trunk of the sciatic nerve of 13 rabbits and five dogs. In eight complete anæsthesia and analgesia were produced. Rehns found that sensation returned in the anæsthetic patches of tabetic patients when radium was applied. Zimmern and Professor Raymond succeeded in attenuating lightning pains and the hyperæsthesia in neuralgia and neuritis. This latter fact had been previously noted by Darier, who relieved the pain in several cases of facial neuralgia by the application of radium. Radium has an action on the retina, on the reproductive glands, on the lymphoid organs, and on the blood.

The physiological action of the emanation and induced radio-activity is well known. Radium produces the emanation persistently without any appreciable loss of weight, so that we have here a practical means of utilising radio-activity in the form of the emanation. Curie and Danysz investigated this action on particular organisms. Caterpillars placed in a tube of the emanation were paralysed much in the same way as by the radium rays. Bouchard, Curie, and Balthazard made similar experiments with guinea-pigs and mice, and the animals died after a stage of loss of heat and torpor. The rapidity with which the fatal result is produced depends on the quantity of emanation contained in the atmosphere in which the animals are placed. London obtained similar results with frogs and mice. The emanation is perhaps more rapidly microbicidal than the direct rays. Danysz killed with it a culture of anthrax bacillus. Dorn, Raumann, and Valentiner found that the emanation in a gaseous form arrested the growth of the typhoid bacillus on gelose and killed it outright in solid media and in culture bouillon through which the gas was allowed to bubble. Mouse typhus, the comma bacillus, and the diphtheria bacillus are similarly affected. The physiological action of the emanation introduced into the organism has been studied more especially in Germany. Madame Anna Laska carried out a series of experiments at the Charity Hospital at Berlin and reports the following results: Rabbits were given by the mouth or by intravenous injection radio-active water—i.e., water that had been rendered radio-active by the radium emanation. The amount of emanation introduced into the blood current was soon eliminated *viâ* the lungs. This result is in accordance with theory, which would lead us to expect the emanation to escape through the lungs. It also proves that the emanation taken by the mouth remains in the organism longer than when injected into the veins, no doubt owing to the fact that in the digestive tract the emanation is only gradually absorbed. Examination of the blood in the course of these experiments yielded the following results. In one case in which the animal had been given 120 centimetres of radio-active water a tangible proportion was found in the blood. In all the other cases the quantity of emanation was so small that it could not be measured. This is explained by the fact that the emanation no sooner gets into the blood than it is got rid of in the breath. Several investigators have discovered traces of the emanation in the urine. Examination of the fæces revealed the fact that a tangible amount of the emanation taken by the mouth is eliminated *viâ* the intestine. The stomach, liver, and cartilages contain insignificant quantities of emanation.

Another author, Dr. Silbergleit, carried out a series of experiments at the Medico-Policlinic at Berlin in order to ascertain the influence of the emanation on organic exchanges. Radiogenic water was administered to three young men free from any rheumatic or gouty taint. No. 1 took his radiogenic water after lunch, composed of bread and meat, followed by complete rest. No effect on the gaseous exchanges was noted. In the two others the radiogenic water was given on an empty stomach in the morning, still with the subject at rest. In both there was a notable increase of the gaseous exchanges.

Uric acid, as we know, circulates in the blood in the form of urate of soda, of which there are two isomeric forms, differing from each other by their respective solubility in the blood plasma. The soluble salt is converted into the insoluble form. In gout and similar states this transformation is so rapid that the normal excretion of the uratic salt is unable to take place. Dr. Gudzent investigated the effects of the emanation and found that the conversion of the soluble into the insoluble salt was notably checked and did not set in again until the emanation had been eliminated. A course of treatment with radiogenic water would consequently seem capable of preventing the deposit of urates in the tissues and so conceivably obviate the recurrence of attacks of gout.

Dr. Nagelschmidt and Dr. Kohlrausch have published the results of their researches bearing on the physiological influence of radium-therapy, and arrived at the following conclusions. The emanation of radium may be regarded as a gas capable of absorption by the lungs, the stomach, and the intestine. The greater part of the emanation is eliminated *viâ* the breath in a comparatively short time, a small part escaping in the fæces, and a still smaller part being stored up in the liver and bile. As long as the emanation remains in the organism it gives off rays that permeate the tissues and produce exactly the same effects as radium rays. Curie and Laborde ascertained the proportion of radium emanation contained in the gases and waters of a number of thermal springs, and various authors have investigated the biological action of mineral waters laden with emanation, and recognise that they exert a stimulating influence on the ferments of the economy. As Laborde remarks, we cannot but be struck by a coincidence that almost amounts to a revelation when we find that the mineral waters so far found to be most radioactive are those with low mineral contents. This seems to justify the assumption that the well-marked effects obtained at various mineral water stations are possibly due to the radio-activity of the waters, since they cannot be due to the small proportion of mineral constituents. This seems the more probable, judging from Löwenthal's experiments, who gave healthy men a certain quantity of water laden with emanation without the production of any tangible effect, whereas in persons suffering from chronic articular rheumatism it determined a febrile attack with pain and swelling of the joints.

There are several ways of employing radium in therapeutics. It is in surgery that it was first turned to account. The extremely violent action of radium on the tissues renders special precautions necessary. First we must apportion the quantity of rays to be brought to bear in each case, then we must protect the healthy tissues against the unnecessary and injurious action thereof. Lastly, the method of application varies according to the individual requirements. It must be borne in mind that the rays emanating from radium are not simple, they comprise several kinds of rays which differ from each other by their mode of action and by the degree of penetration into the living tissues. This has led specialists to devise special instruments and appliances, as complicated as they are ingenious. Radium seems to exert a specific action on cancerous and angiomatous tumours. It has yielded remarkable results in certain forms of cancer, in keloids and vicious scars, in angiomata and pigmented nævi, in cutaneo-mucous tuberculosis, and in certain varieties of chronic, pruriginous, inflammatory dermatosis.

According to Dominici and Gy, radium gives good results in gonorrhœal arthritis, obstinate neuralgia, and neuritis. As to the internal and external use of the emanation, however, we are no longer on sure scientific grounds. In passing, it may be mentioned that radium emanation is contained in a certain number of natural mineral waters, and this cannot surprise us because a sheet of underground water may conceivably come into contact with radiferous earths and so acquire the properties of induced radio-activity. It is, indeed, interesting to note that certain mineral waters which are recognised to be very efficacious are precisely those containing comparatively large quantities of emanation. The radio-activity of mineral waters only exists at the source, for the water soon loses its borrowed properties. Possibly this may explain why there is such a difference between the therapeutical effects of mineral waters "consumed on the premises" and those drunk at home.

Numerous physicians began to try whether water that has been rendered artificially radio-active is capable of exerting a beneficial action in affections in which the naturally radioactive mineral waters display most efficacity, among them being Dautwitz, Lowenthal, Laqueur, Kraus, Jacobs, Bergel, and Bickel. Dr. Lowenthal remarks, and the observation is worthy of note, that waters rendered artificially radio-active provoke a reaction characterised by an increase of the pain and the reappearance of inflammatory symptoms in the originally damaged joints. This reaction corresponds exactly to a phenomenon with which we are familiar in the thermal treatment of rheumatic and gouty affections. Radium cannot very well be utilised as such for internal administration, in consequence of its intense action on living tissues, and this has led physicians to make use of the emanation in internal radium-therapy as well as for certain external applications. The problem has been solved by the construction of emanation apparatus. In these the radium is surrounded by water, to which it communicates uniform qualities of emanation. The quantity of emanation in this water can be measured in units by the electroscope. The emanation apparatus consequently produces a solution of the emanation in stated doses, and such water can be used for baths or taken internally, or it can be utilised to increase the radio-activity of a mineral water, to be employed as directed.

The external application of the emanation may take the form of baths, compresses, or mud poultices. With regard to baths, it is probable that the effects are due to inhalation of the emanation in the water vapour and not to transcutaneous absorption. The prescribed quantity of radioactive water is added to a bath at the ordinary temperature in which the patient is left for about half-an-hour, stirring the water frequently. Compresses are prepared of various sizes. Before being applied they are steeped in boiling water, wrung out and placed round the joint or over the nerve trunk, waterproof being placed outside. To be left *in situ* 12 hours. The compress can only be used once and the process of reinforcing it takes some four days. Radioactive mud is a very convenient mode of application. It is prepared by mixing powdered pitchblende with twice its volume of hot water. This is applied direct to the part to be treated; it is easy to use and can be left on several hours under a piece of waterproof. This mud exerts a sedative effect and is believed to promote the absorption of exudations. It does not excite any irritation of the skin or give rise to inconvenient reaction, its radio-activity is permanent, but when it has been used it must be allowed to dry for a fortnight before using again.

The emanation can be given in two ways—viz., as a drink and by inhalation. The prescribed number of units is obtained by adding a suitable quantity of radiogenous water to a mineral water, which must be drunk forthwith, taking care not to shake it up too much. Patients who are taking large doses must be closely watched and in presence of symptoms of violent reaction the treatment must be modified or suspended. For inhalations a special apparatus is employed, the radiogenous water being heated and the vapour inhaled by the patient. Each sitting lasts three or four minutes.

What, then, are the principal indications for the therapeutical application of radium? On comparing the results obtained in Germany and in France one cannot but be struck by the singular unanimity of views of the observers, all the more so, seeing that this concordance is rather rare in medicine. It is to be noted that the Germans do not quote French investigators, nor the French German authorities; moreover, the researches were carried out at about the same period. The German school lay down the following indications: (1) muscular rheumatism, chronic and subacute articular rheumatism, and all forms of chronic arthritis; (2)

gonorrhœal arthritis and rheumatism; (3) neuralgia, especially sciatica, neuritis, and the lightning pains of locomotor ataxy; (4) catarrhal affections of the respiratory tract, pharynx, and larynx; and (5) affections of the frontal and maxillary sinuses. The French indications have been summed up by Dr. Claude, of the St. Louis Hospital, as follows: (1) rheumatoid arthritis; (2) gonorrhœal rheumatism; (3) various arthropathies; (4) diseases of the nervous system; and (5) certain cutaneous and gynæcological affections. The only difference to be noticed between the French and German authors is in the mode of application. In France the treatment consists mainly of baths and mud poultices, whereas in Germany considerable importance is attached to the ingestion of water laden with emanation.

THE FIFTH INTERNATIONAL CONGRESS OF OBSTETRICS AND GYNÆCOLOGY,[1]

HELD IN ST. PETERSBURG UNDER THE AUGUST PATRONAGE OF HIS IMPERIAL MAJESTY THE CZAR OF ALL THE RUSSIAS.

THE following delegates from Great Britain and Ireland were present at the Congress: Dr. Amand J. Routh (London), representing the Royal College of Physicians of London, the Royal College of Surgeons of England, Charing Cross Hospital Medical School, and the Obstetrical and Gynæcological Section of the Royal Society of Medicine; Dr. Thomas Wilson (Birmingham) and Dr. Jervois Aarons (London), representing the Royal Society of Medicine; Dr. Edward Malins, representing the University of Birmingham; Sir Alexander R. Simpson, representing the Edinburgh Obstetrical Society; and Mr. M. G. McElligott, representing the Royal College of Surgeons in Ireland.

On Sept. 21st in the large Alexander Hall of the Hotel de Ville a reception was held by the municipality. The Mayor, I. I. GLAZOONOFF, who received the guests together with the members of the municipality, welcomed the members of the Congress as individuals who, he said, were fighting for the health of their wives, mothers, sisters and daughters, and who were therefore appreciated by all, because the health of a woman is a care for which every gynæcologist strives.

On Sept. 22nd the Congress was opened with the Russian National Hymn. The president of the committee of organisation, Professor Dm. O. OTT, expressed his satisfaction that the Congress which had been twice delayed could now at last take place, and spoke of the institute, which is a building of the highest technical perfection and which is destined to be the perfection of obstetrics and gynæcology in Russia. Next the honorary curator and administrator of the Imperial Clinical Institute of Gynæcology and Obstetrics, General-Lieutenant ANTCHOOTIN, declared the Congress open, whereupon the Mayor again welcomed the members of the Congress.

The chief secretary of the Congress, Professor P. SADOVSKY, read his report. He mentioned the difficulties in arranging the Congress in the year 1905 because of the revolution in Russia, and in this year because of the cholera. But now, thanks to his Majesty the Emperor and to all the Members of the Government, as well as to the committee of the Congress, it was possible to have a reunion of many eminent members of the gynæcological and obstetrical profession. Professor Sadovsky mentioned with regret the names of several gynæcologists who had died since the last Congress—Kufferath, Pfannenstiel, Budin, Edebohls, Engelman, Etheridge, Porro, Reverdia, Skene, Acconci, Rösthöm, Barnes, and Macan. He proposed in the name of the committee to form a Society of the International Congress of Gynæcology and Obstetrics to assure a regular convocation of congresses, and to prevent such delays as had happened with this Congress.

In order to allow the members of the Congress to make better and more intimate acquaintance with each other one of the *salons* of the Hôtel d'Europe was reserved for their exclusive use.

[1] We are indebted to Dr. Jervois Aarons for furnishing us, through Dr. H. Macnaughton Jones (Honorary President for Great Britain), with a précis of the proceedings of this Congress, from which the following notes are abstracted.

THURSDAY, SEPT. 22ND.

FIRST SESSION.

Presidents of honour: Professor BEUTTNER (Geneva), Dr. BUMM (Berlin), and Dr. DÖDERLEIN (Munich).

Professor LUIGI MANGIAGALLI (Milan) read a paper on

The Therapeutics of Inoperable Cancer of the Uterus.

He said: In cases when surgical intervention is not possible or not to be recommended we possess many means which seem to impede if not to stop completely the progress of a neoplasm, and which give us hope for the future—namely, pharmacotherapy (mercury, arsenic, condurango, chelidonium majus, quinine, charcoal, cholesterin), jequirity, opotherapy (orchidean and thyreoidean), fermentotherapy (trypsin, amylopsin, cholesterin), bacteriotherapy (Coley's fluid, vaccinotherapy, serum of Doyen, streptococcic toxins of Emmerich and Scholl, blastomycetic serum of Wlaeff and Sanfelice, cancroin of Adamkiewicz, nectrianin and antimeristem of Schmidt), röntgenotherapy, radiumtherapy, and fulguration.

Professor A. STICKER and Dr. E. FALKE (Berlin) communicated a paper on

The Treatment of Inoperable Cancer by Ferments combined with Radium.

Inoperable cancer, they said, can be ameliorated and sometimes cured by the use of ferments, whose action is increased by a combination with radium. This new method combines the disintegrating and reabsorbing properties of the digestive ferments (e.g., trypsin) with the action of radium. These actions are not only added to but rather multiplied. The best vehicle is charcoal, because it has the greatest absorptive power for the ferments as well as for the emanation of radium. The preparation used by the authors is a combination of charcoal with trypsin—carbenzym plus barium carbonate of radium. In this practical form the dissolution of the albumins under the action of the ferments is continued and prolonged, while the radioactive substances give the highest tension and duration of emanation.

Dr. R. LOURIE (St. Petersburg) read a paper on the Action of Radium, of X Rays, and of Fulguration on the Tumours of Mice, which was followed by a paper on Experimental Investigations into the Origin of Metastases in Cancer by Professor E. OPITZ (Düsseldorf), and another on Early Intervention in the Treatment of Cancer of the Uterus by Mrs. CL. OOLEZKO-STROGANOVA (St. Petersburg).

Professor OPITZ, in the discussion which followed the reading of these papers, said that he had seen a little amelioration after fulguration according to Keating-Hart, but then new proliferations began. The use of acetone was painful. He recommended the administration internally of potassium iodide and the local use of calomel as a dusting powder after the wound had been curetted. Then locally there could be observed a reaction combination of iodine and mercury.

Dr. SELLHEIM (Tübingen) showed a series of preparations exhibiting the great danger of ordinary curettage and cauterisation of cancerous wounds.

Dr. BARREIRO (Mexico) showed the utility of diathermia, which was applicable where the lancet was not, and spared the tissues which must be saved. The bones were no obstacle to its use; no part was too hidden, and no passage too narrow where an electrode could not be placed. There was no hæmorrhage, the tissues were sterile, no dissemination of germs or cancerous cells, orientation and the localisation were easy, and recurrences were exceptional if the whole tumour had been influenced.

Dr. RIVIÈRE (Paris) stated that 15 years ago he used the treatment by sparks before it was spoken of as electrocoagulation or fulguration; this fact was proclaimed by him in 1900 at the Congress of Electrical and Physical Therapy held in Paris.

Dr. KADER (Cracow), Dr. STRASSMANN (Berlin), and Professor STICKER also took part in the discussions.

The paper of Dr. MACNAUGHTON JONES (London) was not read owing to the absence of the author.

FRIDAY, SEPT. 23RD.

SECOND SESSION.

Presidents of honour: Dr. KADER, Dr. MALINS, and Professor MANGIAGALLI (Milan).

Dr. LE FILLIATRE (Paris) demonstrated a Casque Bavette for Laparotomy and a Dilator for the Suprapubic Operation.

Professor BEUTTNER read a paper and demonstrated a new method of Bilateral Ablation of the Adnexa of the Uterus.

Dr. BUMM read a paper on

The Leading Principles of Cæsarean Section.

He discussed the advantages and disadvantages of the supra-symphysic section over the classical operation on the fundus of the uterus, and expressed the opinion that in aseptic cases the choice of method is not important, and for feverish women with a septic genital canal neither method is secure, for the danger depends on the kind of infection, decomposition of the liquor amnii by ascending putrefactive germs being less dangerous than the presence of streptococci.

Dr. PESTALOZZA (Rome) read a paper on

The Cæsarean Operation.

He was of the opinion that extra- and intra-peritoneal methods of Cæsarean section have each precise indications, the classical operation being always preferable where asepsis is certain. When this is uncertain the extraperitoneal operation should be performed, but in cases of certain infection embryotomy was indicated and no Cæsarean section was safe.

Dr. AMAND ROUTH read a paper on

Cæsarean Section in Great Britain and Ireland.

He showed from statistics of all operations performed in the United Kingdom since 1867 how the lessened risk of Cæsarean section had widened its range of usefulness, and considered it in the circumstances of obstruction to labour, uterine hæmorrhage, and constitutional crises.

Dr. E. P. DAVIS (Philadelphia) read a paper on

Cæsarean Section for Conditions other than Contracted Pelvis.

Six cases were discussed—2 of central placenta prævia, 1 of inactivity of the uterus, 1 of multiple fibromata, and 2 of toxæmia on the basis of insufficiency of the thyroid gland.

Dr. DÖDERLEIN (Munich) followed with a paper on Hebosteotomy with Extraperitoneal Cæsarean Section.

THIRD SESSION.

Presidents of honour: Dr. MARTIN (Berlin), Dr. ROUTH, Dr. ROSNER (Cracow), and Dr. PESTALOZZA (Rome).

Professor OPITZ read a paper on

The Value and Choice of the Different Methods of Cæsarean Section.

He said: In aseptic cases the classical Cæsarean section and the suprapubic are equally advantageous, but the secondary infection of the uterine wound cannot be excluded. If infection is possible, a wound in the depth of the pelvis is less dangerous than a wound situated higher in the abdominal cavity. The danger can be diminished by draining through the posterior vaginal cul-de-sac. The opening of the abdominal cavity and the flowing out of the amniotic liquid are of no great importance. Therefore, in making the suprapubic Cæsarean section it is permissible to open the abdominal cavity and then to go between the bladder and the uterus to make its neck more accessible to the incision. By sewing the wound with the bladder and the peritoneum it is placed extraperitoneally. The method of Latzko is the best for the operation if completely extraperitoneal, but it makes a very large wound in the cellular tissue which may be dangerous. Therefore the method of Latzko-Doederlein is to be adopted only in exceptional cases.

Dr. PANKOW (Freiburg) read a paper on Hebosteotomy *v.* Cæsarean Section.

Dr. SELLHEIM read a paper on

The Modern Methods for the Improvement of the Technic of Cæsarean Section,

of which the following is a summary. For Cæsarean section, as long as no great haste is demanded, the Pfannenstiel transverse incision is preferable to the median incision, for it allows a better shutting off of the free peritoneal cavity during and after the operation, and further pregnancies can progress without disturbance. In evidently infectious cases with a marked abnormal relationship between child and parturient canal, all operative deliveries, with exception of the reduction in the size of the child, are dangerous. But the risk may be minimised through an improved management of labour. From 46 cases of Cæsarean section performed by different methods Professor Sellheim had lost five mothers and six children. In two patients the extraperitoneal Cæsarean section was repeated and no complications were observed. In general the success of the extraperitoneal Cæsarean section is so great as to raise the question in what degree this operation could take the place of the classical Cæsarean section, of hebosteotomy, and of vaginal Cæsarean section.

Dr. KHOLMOGOROFF (Moscow) read a paper on the

Different Methods of Cæsarean Section (Classical, Vaginal, and Extraperitoneal).

The classical method required special precautions and experience; the extraperitoneal method was good for cases where infection was suspected. The vaginal Cæsarean section ought not to be opposed to these operations, but only to operations performed in cases where no delay was possible. This method had all the advantages of the others, which were long, difficult, and more dangerous.

Dr. COVA (Rome) read a paper on Extraperitoneal Cæsarean Section according to the Method of Latzko, which was followed by a paper by Dr. VAN DE VELDE (Haarlem) on

Hebosteotomy v. Cæsarean Section.

For cases of moderate contraction he preferred to use hebosteotomy, in other conditions Cæsarean section. In cases of infection the first operation was less dangerous. After hebosteotomy he had observed 13 following labours, and in seven cases had found that the pelvis remained dilated.

Dr. FRANTZ (Cologne) read a paper on Subcutaneous Hebosteotomy and Suprasymphysic Delivery.

Dr. MORAVSKY (Cracow) read a paper on an

Addition to the Question of the Extraperitoneal Section.

He described nine cases of Cæsarean extraperitoneal section operated on during one year. The great advantage of this operation was that the abdominal cavity remained intact. This method could be used in cases where the classical Cæsarean section could not be undertaken.

SATURDAY, SEPT. 24TH.

The hour from 9 to 10 A.M. on this day was given up to demonstrations.

Dr. CRÉDÉ-HOERDER (Munich): Anatomy of the External Genital Organs of the New-born. He had found the following differences between the adult and the new-born. In the latter the ligamentum suspensorium clitoridis was very large. The configuration of the corpora cavernosa clitoridis and urethræ was quite different. The corpora were larger than in adults. The funiculi spermatici were enormously large. The ligamenta teretia of new-born boys were very feeble. The septum scroti was enormously developed. The testes were very small. The epididymis and the corpuscles of Morgagni were very large. The bulbus urethræ in the new-born was formed as in an animal. The corpora cavernosa urethræ in the new-born girl were convergent, which was not the case in an adult. The microscopic examination showed that the præputium was very developed and it took up two-thirds of the whole length of the penis.

Dr. MARTIN showed 35 pictures illustrating the topographical anatomy of the genital region of the woman and insisted on the importance of knowing this region, especially in cases of prolapsus of the bladder and of the uterus.

FOURTH SESSION.

Presidents of honour: Sir A. R. SIMPSON and Dr. SOOBBOTITCH (Belgrade).

The question which came up for the consideration of the Congress at the session was the Vaginal Route in Obstetrics and Gynæcology.

Dr. MARTIN read a paper on

The Vaginal Route in Gynæcology.

The vaginal peritoneal operation, colpotomy, had been essentially improved by the paravaginal incision and Ott's lighting instruments. It had thereby been freed to a considerable extent from the objection of an insufficient way to the operative field and of want of comfortable eye control. Colpotomy was indicated by special groups of displacement and deformity of the uterus, inflammation of tubes and ovaries and peritoneum, by the earliest stages of ectopic gestation and special forms of neoplasmata of the uterus and ovary. It was less serious than laparotomy and gave favourable immediate and remote results. It was not alternative to laparotomy, but answered special indications. Vaginal operations were indicated for those cases where

plastic surgery was necessary for correction of the position of the uterus and the vagina, modification of the hypertrophy of the uterus which was formerly called chronic uteritis, chronic inflammations of the peritoneum of the pelvis and the organs contained therein, and not very hard nor very large peri-uterine adhesions; in early cases of extra-uterine gestation with a sac which had not burst; and after rupture when the shock was over. Tuberculous states were better attacked from above. In cases of collapse the diagnosis could be only presumptive, therefore it was better to operate by abdominal section. Myomata of the uterus and tumours of the ovaries should be operated upon not according to their size but according to their mobility and their connexion with other organs. Neoplasms, the malignity of which was suspected, must be operated on abdominally.

Professor JUNG (Göttingen) read a paper on

Theses of the Report about Bossi's Method, Metreurysis, and Colpohysterotomy.

The rapid and forced dilation of the cervix uteri with Bossi's instrument during pregnancy or parturition should be rejected when the cervical canal was not dilated and regular and strong labours had not preceded. Primiparæ ought not to be delivered at all with Bossi's dilator. Also placenta prævia was a strict contra-indication against its use. When multiparæ were in question and the cervical portion was already dilated and drawn upwards, Bossi's instrument, handled by a skilful and well experienced obstetrician, might give good results in single cases. The practitioner, however, ought to be strongly advised against the use of the instrument on account of the ever-threatening danger of deep lacerations of the cervix. In all cases in which the confinement was to be accelerated but not to be brought to an end immediately, also in cases of placenta prævia when the fœtus was alive, metreurysis was the best and safest proceeding. The treatment of placenta prævia by colpohysterotomy was only permissible in the clinic, and even there only in the case of placenta prævia totalis. Also for induction of labour the introduction of a metreurynter into the uterine cavity was the most advisable procedure. In those cases in which the pelvis was normal and the woman had to be delivered immediately, colpohysterotomy should be chosen for treatment in the clinic. The practitioner who was single-handed should in such cases apply metreurysis. Contraction of the pelvis reaching the second and third degree and the child being alive required the abdominal Cæsarean section, supposing the patient was not infected. Should infection exist, then the head of even the living fœtus must be perforated; eventually Porro's operation must be performed.

Dr. FRAENKEL (Breslau) read a paper on

The Vaginal Incision.

He proposed to drain the vagina with his instruments and according to his technique, not only in cases of opening abscesses, but also to assist the resorption of inflammatory products in the cellular tissues of the large ligaments. According to his opinion, operative intervention was but rarely indicated for peri uterine inflammations; the vaginal incision was the first and the most efficacious agent in resorptive therapy.

Dr. DUETZMANN (Berlin) read a paper on Vaginal Methods of Operation, which was followed by a paper by Dr. STRASSMANN on the Perfection of the Vaginal Methods of Operation with the Use of the Anterior Flap Incision.

Dr. KOROBKOFF (St. Petersburg) read a paper on

Ovariotomy through the Vaginal Method during Pregnancy.

The vaginal method was valuable for the ablation of tumours of the ovaries complicating pregnancy, as the abdominal wall remained intact, which was of particular importance during pregnancy. When using the speculum of Professor Ott it was possible to operate by the vaginal method even on tumours situated above the superior brim, complicating adhesions being no contra-indications to the vaginal method. Posterior colpotomy was to be preferred to anterior, as the pedicle especially, thanks to the lighting of Professor Ott, could always be tied with security. The vaginal method was especially advantageous in the last months of pregnancy because of the possibility of avoiding any lesion of the abdominal wall.

Dr. G. VERBOFF (St. Petersburg) read a paper on

The Vaginal Route in Cases of Pregnancy Complicated by Cancer of the Uterus.

It was very easy to separate the pregnant uterus from the neighbouring organs, evidently because the tissues were very loose in the pregnant woman. The size of the pregnant uterus was no obstacle to the removal, because through the route of an anterior incision the uterus could be gradually emptied and removed by "morcellement." If it were possible to operate vaginally on the non-pregnant uterus, in cases of complications of pregnancy by cancer it was also easier, and this operation was to be preferred to the method through the abdominal wall, because here it was especially important to prevent the abdominal cavity from being soiled by the secretion of the cancerous tumour. Therefore it could not be understood why certain authors did not accept this route in the complication of pregnancy by cancer, and did not use the less dangerous way of vaginal extirpation.

Dr. JACOBSON (St. Petersburg) read a paper on

The Value of Colpotomy in the Treatment of Extra-uterine Gestation.

The proper treatment of extra-uterine gestation was the removal of the ovum, which led to the cessation of all symptoms. Together with the treatment of abortion the cause must be also treated by conservative and radical operations of the adnexa. The operation of choice was colpotomy, preferably the posterior operation, but under the condition of being acquainted with the technique of lighting. Anterior colpotomy should be used only in tumours situated immoveably in front of the uterus. Colpotomy attained its purpose as well as laparotomy, but with less danger for the patient. The good results of the operation gave the right to operate on every case of extra-uterine gestation. Laparotomy in the early stages of the extra-uterine gestation should be abandoned and preference given to the vaginal methods. Laparotomy was indicated only in cases of later extra-uterine gestation and in some cases of acute hæmorrhage into the abdominal cavity.

Dr. SITZINSKY (St. Petersburg) read a paper on

The Lighting of the Cavity of the Puerperal Uterus.

The lighting of the cavity of the puerperal uterus was most complete with the use of Professor Ott's specula in the inclined position of the uterus. The lighting during the treatment of the infected cavity of the puerperal uterus permitted operation with the same facility as in an infected open wound. If the uterus were ruptured the lighting permitted a decision to be made in every case as to the method to be followed.

Dr. KIPARSKY (St. Petersburg) read a paper on the Vaginal Route in the Treatment of the Neoplasms of the Uterus, in which he stated that its advantage in cases of cancer uteri was proved by a large number of recoveries with a minimum of cases of an immediate death and the maximum of lives saved.

FIFTH SESSION.

Presidents of honour: Dr. SLAVTCHEFF (Sophie) and Dr. WINTER (Königsberg).

Dr. MARKOVSKY (St. Petersburg) read a paper on

The Vaginal Route in the Treatment of Lesions of the Adnexa.

Indications: Proliferation or inflammatory cysts of the ovaries if it were evident that there were no large and solid adhesions with the parietal peritoneum or with the organs situated above the superior brim of the pelvis causing insufficient mobility as a consequence of anatomical and pathological conditions. Colpotomy was the natural operation in the treatment of intraligamentary cysts, and was very easy also in the treatment of the inflammatory lesions of the ovaries and tubes, with serous or purulent contents unilateral or bilateral, with or without adhesions.

Dr. SOBOLEFF (St. Petersburg) read a paper on

Removal of the Appendix in the Course of the Vaginal Interventions.

The method of lighting the abdominal cavity enabled an examination of the vermiform appendix in the course of a colpotomy. The removal of the appendix as an accessory operation in the course of colpotomy was quite possible, and gave good results in cases where the appendix and the neighbouring tissues were not infiltrated and could be pulled into the lower pelvis (operation of Professor Ott, April 26th,

1906). The peritoneal intestinal adhesions could be liberated without great difficulty with the aid of Ott's specula.

Dr. FUETH (Cologne) read a paper on

Vaginal Amputation of the Corpus Uteri.

In cases of hæmorrhage which could not be cured by usual methods, he believed that the best operation was that of Rieck—i.e., the vaginal amputation of the corpus uteri. The advantages were: the rapidity of the operation, the slight loss of blood, and the certainty of securing the vessels. There was no necessity to remove the cervix, the time of the operation was greatly shortened, and the abdominal cavity did not remain open for any length of time.

Dr. BECKMANN (St. Petersburg) read a paper on

Metreurysis and Vaginal Cæsarean Section as a Method of Delivery in Eclampsia.

Last year in the Obookhov Hospital of St. Petersburg he had employed early delivery by means of the vaginal Cæsarean section in cases of eclampsia and had had a mortality of only 12·4 per cent. The operation was performed seven times; it was not dangerous and presented no technical difficulties.

Dr. KROEMER (Greifswald) and Dr. D. OTT (St. Petersburg) communicated a paper on What are the Causes of the Better Results obtained by the Vaginal Method Compared with Abdominal Laparotomy?

A discussion upon the papers followed.

Dr. FALGOWSKI on the basis of 32 unpublished cases believed that the vaginal route was suitable for the treatment of the adnexa. He operated by the vaginal method also in cases of early extra-uterine gestation and even of small intra-ligamentary tumours; the sterilisation with the removal of the tubes was executed easily and was efficacious.

Dr. SELLHEIM preferred Cæsarean section in the majority of adnexal cases, especially if the pelvis was elevated; he used the incision of Pfannenstiel and spinal anæsthesia. To prevent infection, for the provisional isolation of the region of the operation of the abdominal cavity he recommended an aseptic sponge enveloped in a compress and put between two other compresses. If the case was a suspicious one and it was necessary to drain the abdominal cavity, instead of a sponge a bag filled with gauze (like that of Mikulicz) should be employed.

Dr. JAYLE (Paris) was a convinced partisan of laparotomy; he considered that the vaginal route should be reserved only for cases which were not suitable for the high operations as a consequence of some exceptional conditions.

Dr. VAN DE VELDE was against the employment of the instrument of Bossi, the use of which he had discarded. He now used the method of Bonnaire, and if the orifice commenced to tear he preferred colpohysterotomy.

Dr. A. MARTIN believed that such an extended analysis of the question of the vaginal route as had been made by the Congress could not remain without fruitful results.

Dr. MACEIEWSKI (St. Petersburg) was opposed to ventroscopy as a method which might introduce infection, bruise the tissues, and infect the ligatures of the vessels.

Dr. WINTER (Königsberg) read a paper on

Intra-uterine Intervention in the Infected Puerperal Uterus.

On the ground of a bacteriological analysis he had come to the following conclusions. If indifferent germs were present the time of delivery might be shortened, but if the bacteria were harmless delivery should be delayed until easy manipulation was possible. If hæmolytic streptococci were found, the best practice was to abstain from every operative intervention and only to try to shorten the delivery until it would be possible to finish it with proper precautions. He believed it to be more prudent to leave the streptococci in an intact tract than to produce wounds or bruises. He hoped that the time would come when by early diagnosis and by the isolation of infectious cases it would be possible to perform an operation even in cases of placental polypi, in septic abortions, and in septic fever during delivery.

Dr. LE FILLIATRE read a paper upon

The Adhesions of the Epiploon and the Bowels to the Abdominal Wall as a Consequence of Laparotomies for Intervention on the Uterus and its Adnexa.

The epiploic adhesions, pure or accompanied by intestinal adhesions to the scar of the abdominal wall as a consequence of laparotomies, often passed without being recognised, and were the cause of diagnostic errors, as in three cases observed by himself. These adhesions were causes of very different accidents which might necessitate surgical intervention according to their nature. Some of these cases simulated appendicitis and some resembled salpingitis. It was highly important to take into consideration the epiploic adhesions in all the cases where a patient who had been the subject of a laparotomy presented abdominal troubles simulating appendicitis or an affection of the lower pelvis. Consequently to prevent such complications and to avoid the necessity of a second operation on a patient, he recommended excision of the epiploon partially or totally each time when (after having opened the peritoneum) it was met in the field of operation.

Dr. ABADIE (Oran) read a paper on the Advantages of Uterine Hemisection in Hysterotomy for the Removal of Bilateral Affection of the Adnexa (the operation of J. L. Faure), which was followed by a paper on Histological Investigation of the Prophylactic Methods against Gonorrhœa by Dr. CRÉDÉ-HOERDER.

MONDAY, SEPT. 26TH.

As on Saturday, demonstrations were given from 9 to 10 A.M. on this day.

Professor OPITZ showed: (1) A Uterus with a large Cancer of the Cervix, together with Placenta Prævia, Removed through the Suprapubic Cæsarean Section; (2) a Uterus Removed by Laparotomy after Lacerations of the Cervix due to Bossi's Dilator; (3) Kidneys with Pelvis attacked by Lesions which resembled Tuberculosis under the Microscope, but did not contain Bacilli; and (4) two cases of Cancer of the Bladder (during the operation it was necessary to remove a rather large part of the bladder).

Dr. IVANOFF (Moscow) showed Preparations of the Pelvis exhibiting Dislocation of the Muscular Fibres entering into the Musculature of the Uterus.

Dr. ROSNER showed some instruments.

SIXTH SESSION.

Presidents of honour: Dr. JACOBS (Brussels) and Dr. VAN DE VELDE.

The question before the Congress at this session was the Compared Value of Different Methods of Operation in the Treatment of Dislocations and Deviations of the Uterus.

Dr. VAN DE VELDE read a paper on

The Comparative Value of Various Operative Methods in Retroflexion of the Uterus.

He stated that operative correction of retroflexion (version) of the uterus should fulfil as completely as possible the following conditions:—1. Simplicity in performance and reduction of the dangers of the operation to a minimum. In cases where it had been impossible beforehand to ascertain (with certainty) the absence of adhesions or other complications, these disorders might be recognised during the operation and the appropriate treatment applied. 2. Restoration as nearly as possible to the normal position. 3. If the trouble which existed before the operation was not sufficiently alleviated the indications and not the operation itself should be blamed. 4. The generative functions should not be interfered with in any way. In the absence of complications the possibility of conception should not differ from the normal. 5. The improved position of the uterus was only fully manifested when no relapse followed subsequent pregnancy and labour. He classified the operations as follows:—1. Operations on the uterus itself. 2. Operations which fastened the body of the uterus in front (vagino-fixation, ventro-fixation, indirect fixation, ventro-fixation of the round ligaments, vagino-fixation of the round ligaments, inguinal fixation of the round ligaments, subperitoneal shortening of the round ligaments). 3. Operations advised to fasten the cervix backwards. 4. Operations on the adjacent parts only. The attempts to obliterate the pouch of Douglas deserved full recognition, and plastic operations on the perineum and vagina were in many cases supplementary and necessary operations. As the results of present experience he recommended inguinal fixation in cases devoid of complications; indirect ventro-fixation or a combined (indirect and direct) inferior vagino-fixation in women who may become pregnant; and direct vagino-fixation or ventro-fixation for sterile women. The periodical Gynæcological Congress could appropriately organise this work. The Congress held in St. Petersburg might decide to constitute an international commission of five members who should be authorised to distribute the work amongst themselves, adding to their number, if necessary; a task which involved

the observation and publication of all notable cases; collecting and methodically arranging materials; instituting a fruitful discussion and, as soon as sufficient material was collected, making a communication thereof at a session of the next congress.

Dr. ILJIN (St. Petersburg) read a paper on

Section of the Perineum in the Median Line during Labour.

The different contemporaneous methods of protection of the perineum during labour could not prevent rupture. A large number of ruptures even if sewed up did not give a complete recovery because the tissues were lacerated and contused. The only method of escaping such lesions of the muscles was perineotomy. Whilst sewing together the lips of the wound after perineotomy it was necessary to take into consideration the normal anatomical relations of all the tissues, especially of the muscles. Therefore the separated muscles should be united by separate sutures.

Dr. EBERLIN (Moscow) read a paper on

The Value of Alexander's Operation in the Treatment of the Retrodeviations of the Uterus according to 130 Clinical Observations.

Of all the practical methods of treatment of mobile retrodeviations of the uterus the most rational was the operation of Alexander, because it was safe, its results were stable, and the clinical effect was good. *Conditio sine quâ non* of the success of this operation and of its immediate and remote effects was good technique, which consisted especially in isolating the round ligament from the fascia transversa and in shortening it sufficiently. The points against the operation, the difficulty of technique and the possibility of an inguinal hernia following, diminished its value but little.

Dr. SCHAABACK (St. Petersburg) read a paper on

The Immediate and Ultimate Results of the Operative Treatment of the Prolapsus of the Uterus.

The reconstitution of the floor of the pelvis by an extended colpoperineorrhaphy gave the most permanent results in all degrees of prolapsus of the uterus and vagina. It was also the safest operation because it gave a mortality of only 0·2 per cent. compared with a mortality of from 3 to 4 per cent. from other operations, and was free from post-operative complications which so often followed other methods. To prevent a future rupture of the perineum in the next labour (55 per cent.) prophylactic perineotomy according to Professor Ott must be made.

Dr. JACOBSON read a paper on the Restitution of the Pelvic Floor as an Operative Method in the Cure of the Prolapsus Ani, and was followed by Dr. DUETZMANN (Berlin) with a paper on the Treatment of Retroflexio Uteri by Vagino-vesico-fixation and Consecutive Labour.

Dr. ALEXANDROFF (Smolensk) read a paper on

The Shortening of the Basis of the Broad Ligaments as a Method of Operation for Retro-versio-flexion of the Uterus.

The broad ligaments of the uterus with the muscular elements placed in the basis of the ligaments had an important value in retaining the uterus and played an independent part. Whilst shortening and sewing together the cardinal ligaments the uterus was put up to the normal height, and whilst pushing the neck of the uterus backwards in the direction of the sacrum a normal position was given.

A discussion upon the points brought forward in the various papers followed.

Dr. FALGOVSKI insisted on the importance of a systematic study of the operations for prolapsus with special attention to the lesions of the bladder (cystoscopy). The operation of Alexander Adams had no influence on the bladder; it did not produce herniæ, and was therefore preferable to other operations. It could be applied even to adhesions after they had been removed by a vaginal incision.

Dr. SELLHEIM believed that retroflexion of the uterus seldom required a particular treatment; prevention was more important.

Dr. FUETH considered the operation for retroflexion necessary only if there were complaints. Patients should not be told that they had this anomaly as it was likely to produce a false conception of their disease.

Dr. DUETZMANN did not agree with the objections to the vagino-vesico-fixation. He had operated on more than 600 cases and had obtained equally good immediate as well as remote results. In 29 cases after this operation he observed labour without complications.

Dr. MACIEWSKI disagreed with the views of Dr. Iljin.

Professor OPITZ supported the proposition of Dr. Van de Velde to form a commission for the analysis of the question of the treatment of the abnormal position of the uterus, and spoke on the question of prolapsus and its anatomical causes.

Dr. KNORRE, Dr. SCHAABACK, and Dr. VAN DE VELDE also took part in the discussion.

SEVENTH SESSION.

President of honour: Dr. WETHERILL (Denver, Colorado).

Dr. JAWORSKI (Warsaw) read a paper on Metrorrhagia of Syphilitic Origin; Pains in the Uterus. He had observed eight cases of obstinate hæmorrhage which did not yield to any treatment, and he considered the cause to be sclerosis of the vessels of the uterus.

Dr. J. W. BALLANTYNE (Edinburgh) read a paper on Eclampsia and its Management: a Comparison of Methods. The general result of his observations had been to strengthen his belief in the efficacy of medical and minor surgical means of treatment applied as far as possible before the supervention of labour.

Dr. JAYLE (Paris) read a paper on Vulvar Sclerosis and Kraurosis Vulvæ. The most common cause of kraurosis was ovarian castration. In women who had undergone no operation, he believed that the disease was due to some atrophic lesion of the ovaries. Removal of the ovaries was not sufficient in itself to cause kraurosis.

A paper by Dr. RINGLEB (Berlin, Charlottenburg) on the Progress of Cystoscopy, was followed by one by Dr. RADWANSKA (Cracow) on the Treatment of Vaginitis and Endometritis.

Dr. LE FILLIATRE read a paper on the Advantages of Spinal Anæsthesia. He preferred, he said, to make the puncture between the last lumbar and the first sacral vertebræ; he injected 0·01–0·05 of cocaine—i.e., 0·5–2·5 c.c. of the 2 per cent. solution, with the patient in a particular position. He had used the method more than 2000 times in eight years.

Papers followed by Dr. ABADIE, on Rachianæsthesia; Dr. AARONS (London), on the Use of Pituitary Extract in Obstetrics and Gynæcology; Dr. RIVIÈRE, on the Value of Physicotherapy in Gynæcology; Dr. MEIER (Berlin), on Hydatid Cysts; and Mrs. ABADIE (in collaboration with Dr. ABADIE), on the Importance of Wassermann's Reaction in the Diagnosis of Gynæcological Affections.

TUESDAY, SEPT. 27TH.

From 9 to 10 A.M. demonstrations were given.

Dr. KOPTEFF (St. Petersburg) gave a Demonstration of a Metreurynter and of the Method of its Application.

The following instruments, microscopic preparations, &c., were shown:—Dr. VON SCHRENCK (St. Petersburg): A Pessary for the treatment of Prolapsus Uteri. The pessary is introduced bent in two directions. Dr. BONDY (Tübingen): Microscopic Preparations of a case of Actinomycosis. Dr. SITZINSKY: Three Pieces of the Wall of the Uterus in Metritis Desiccans. Dr. KOOZMIN (Saratov): Photographs of Four Cases of Extra-uterine Gestation operated on by him in the gynæcological department of the Zemstvo Hospital of the Saratov province. Dr. GAUSS (Freiburg): An Instrument for the Compression of the Aorta.

EIGHTH SESSION.

President of honour: Dr. ABADIE.

Dr. FRAENKEL (Breslau) described a new series of experiments which confirmed his opinion that the corpus luteum is an organ which regulates the cyclic modifications of the uterus.

Dr. OKINTCHITZ (St. Petersburg) read a paper entitled "Which Elements of the Cellular Tissue of the Ovary can be considered as Glandular Tissue?" The cells of the "cumulus oöphorus" should be regarded as glandular tissue. They fulfilled a complicated chemical function by bringing the nutritive matter to the cell of the ovule and by eliminating the products of metabolism.

A paper by Dr. BELOFF (Kharkoff) on the Rôle of the Secretion of the Yellow Bodies (Corpora Lutea) of the Ovaries was followed by one by Dr. SCHLANK (Cracow) on Clinical and Experimental Investigations on the Care of the Umbilical Cord in the New-born. He had used the method

of Gauss. He cut the cord between two forceps, putting a special pair of pincers quite near the skin, and, severing the umbilical cord, put on an aseptic bandage. The results were excellent.

Dr. NEUGEBAUER (Warsaw) read a paper entitled, "A Contribution to the Study of the Gemellar Isochronic Heterotopic Gestation. This was followed by a paper by Dr. FALGOVSKI (Posen) on Acute Relaxation of the Uterus during Narcosis by Inhalation. In four cases he had seen a sudden relaxation of the non-gravid uterus during profound narcosis. He considered that it was due to the paralysis of the centres which regulated the tension of the muscular tissue of the uterus.

Dr. KAKOOSHKIN (St. Petersburg), in a paper on the Septum Vaginæ from the Anatomical and Clinical Points of View, said that median sagittal septum vaginæ was not a rare complication. The septum was very rich in blood-vessels which had sometimes a cavernous form, and were the cause of hæmatomata and profuse hæmorrhages in pregnancy. The septum should be treated like a neoplasm: it should be totally extirpated.

Dr. IVANOFF (Moscow) read a paper on the Construction of the Muscular Layer of the Broad Ligaments of the Uterus.

In the discussion which followed Dr. STRASSMANN considered that the paralytic state of the uterus, according to Dr. Falgovski, was not proved.

NINTH SESSION.

President of honour: Dr. SELLHEIM.

Dr. DAVIDSON (Kieff) read a paper entitled "A Contribution to the Study of the Operative Treatment of Uterine Myomata." This was followed by a paper by Dr. SNEGIREFF (Moscow) on Electro-cardiographic Studies in Gynæcology.

Dr. KAKOOSHKIN read a paper on Experimental Observations on the Perforability of the Uterine Wall. He had studied the resistance of the uterine wall to perforation by a sound and had found that the force necessary for this purpose was 2088 grammes. In 3 per cent. of the cases where the peritoneum was very strong it was necessary, in order to make a complete perforation, to add a complementary force of 1285 grammes. The perforability of the uterine horns was greater than that of the fundus. The uterus was more easily perforated in nulliparæ than in multiparæ.

Dr. ABADIE read a paper on the Treatment of Congenital Absence of the Vagina by Transplantation of the Bowel. He described a case and analysed the advantages and the features of his method compared with those of Baldwin. Intestinal transplantation gave better results than the method of Thiersch, but was more difficult. The choice depended not only on the physician but also on the patient, to whom the condition should be explained.

A paper by Dr. MODLINSKY (Moscow) on the Sacral Route in Gynæcology and Surgery was followed by the last paper of the Congress by Dr. MONTOYNONT (Madagascar), the subject being Gynæcology in Madagascar.

It was decided that the next International Congress should be held in Berlin in September, 1912, when the question of the Comparative Value of Different Methods in the Treatment of Dislocations and Deviations of the Uterus will be discussed. The Proceedings of the Congress will appear in due course.

THE CHOLERA EPIDEMIC.

(BY THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

DURING the past summer the Russian Empire has been, for the seventh year in succession, the scene of a severe epidemic of cholera, and the disease has spread—no doubt from that country—to Germany, Austria, Hungary, Italy, Roumania, Turkey in Europe, and Asia Minor. The present, indeed, would appear to be the most widely spread epidemic of cholera that has been seen since the years 1892–1895. It will be useful to follow in some details the course the disease has followed during the past few months.

Cholera in Russia.

It will be recalled that (as described in my letter which appeared in THE LANCET of March 26th last, p. 891) cholera had, so far as was known, ceased to be epidemic in all parts of Russia some time during the month of January. The last known case seems to have occurred on Jan. 17th (29th). For nearly three months no cases or deaths from the disease were reported from Russia. In April, however, cholera reappeared in the Ekaterinoslav government (which borders the Sea of Azov), and a little later it was reported from the Vitebsk government (bordering on Polish Russia). In the former 38 cases with 7 deaths occurred between April 4th and 21st. The following are the weekly returns for the whole of Russia, beginning with April 18th (this and all dates subsequently mentioned in connexion with the Russian epidemic are according to the Old Style, unless otherwise stated):—

Week ending	April	24th	...	21	cases,	4	deaths.
,, ,,	May	1st	...	48	,,	17	,,
,, ,,	,,	8th	...	74	,,	42	,,
,, ,,	,,	15th	...	160	,,	65	,,
,, ,,	,,	22nd	...	317	,,	143	,,
,, ,,	,,	29th	...	840	,,	305	,,
,, ,,	June	5th	...	2,304	,,	830	,,
,, ,,	,,	12th	...	4 093	,,	1,436	,,
,, ,,	,,	19th	...	3,322	,,	1,611	,,
,, ,,	,,	26th	...	4 636	,,	1,237	,,
,, ,,	July	3rd	...	9.308	,,	4,211	,,
,, ,,	,,	10th	...	18,316	,,	8,310	,,
,, ,,	,,	17th	...	18,376	,,	8 327	,,
,, ,,	,,	24th	...	26,625	,,	11,541	,,
,, ,,	,,	31st	...	30,610	,,	13,674	,,
,, ,,	Aug.	7th	...	19 688	,,	9,659	,,
,, ,,	,,	14th	...	12,510	,,	6,376	,,

The above figures are the latest "corrected" figures available here. The following are "uncorrected" figures, and will certainly be increased when the exact numbers are later made known:—

Week ending	August	21st	...	9843	cases,	4405	deaths.
,, ,,	,,	28th	...	7559	,,	3557	,,
,, ,,	Sept.	4th	...	4412	,,	2071	,,

The totals for the whole country from the beginning of this year's epidemic down to August 14th (27th) are officially put at 154,445 cases and 74,723 deaths. This is, therefore, as stated above, by far the most severe cholera epidemic that has occurred in Russia since the early "nineties" of last century. It will be of interest to give a brief summary of the behaviour of cholera in Russia and adjoining countries during the past few years.

In 1903 Russia was apparently free from the disease. In 1904 cholera caused a somewhat severe epidemic in the Caucasus, and spread to some extent along the Volga and its branches, as far as Ufa, Nijni Novgorod, and Yaroslavl. In 1905 the disease broke out in the Polish provinces in the autumn and continued to prevail until the early months of 1906. Only 445 cases and 220 deaths were registered. From February, 1906, to July, 1907, there was a cholera-free interval. A widespread but not very severe epidemic then followed, beginning on the Volga and extending to most parts of European and Asiatic Russia; nearly 12,000 cases and 6000 deaths were reported. The disease also crossed the frontiers of Asiatic Turkey and Persia. In 1908 the disease reappeared in the Volga Valley in July, and again spread widely in all parts of the Empire; the infection again invaded Persia, and that year's pilgrimage to the Hedjaz suffered severely from the disease. In 1909, with only a very brief interval, cholera continued to prevail in Russia; during the year over 20,000 cases and over 9000 deaths were recorded. The disease also spread into Holland and East Prussia.

Returning to the present outbreak from this very hurried summary of the past, it will be observed that this year's epidemic reached its highest point in the week ending July 31st (August 13th), when as many as 30,610 cases and 13,674 deaths were registered. Since then there has been a rapid decline, but the infection is still active and still widely spread.

The course of the epidemic seems to have been as follows. In April the disease was present only in the governments of Ekaterinoslav, Vitebsk, and Baku, and an isolated case had occurred in Moscow. For St. Petersburg the published evidence is very conflicting. Suspicious cases occurred there during January and February. From April 11th to 24th as many as 52 suspicious cases were seen and several more in

the following week and throughout May. But the beginning of this year's epidemic there is put down to June 7th. In May cholera had appeared in the south-central governments of Kharkof, Mogilef, Kief, Poltava, Taurida, Tchernigof, Kherson, Voronezh, Tambof, Minsk, and the Don Territory, and in the provinces of the Kuban and the Terek in the Caucasus. The towns of Kertch, Odessa, and Rostof-on-Don were also invaded in that month. In June and July nearly all the remaining European governments were infected; the disease had spread to the northerly governments of Archangel, Vologda, Viatka, and Perm, to the Caucasian governments of Daghestan, Stavropol, Kars, Erivan, Tiflis, Elizavetpol, and Kutais; isolated cases had occurred in Finland and in the ports of Revel and Riga; and in these months or early in August cholera had been reported from the Central Asiatic Provinces of Transcaspia, Syr Daria, Akmolinsk, Uralsk, and Turgai, and from the governments of Tomsk and Tobolsk in Siberia.

The intensity of the epidemic varied, of course, widely in different parts of the country. The provinces from which the highest figures have been received (i.e., the highest absolute figures; I am unable at this moment to give the figures in proportion to the population) have been the following:—

Kuban province	21,849 cases,	14,072 deaths.
Don Territory	19,538 ,,	9,031 ,,
Ekaterinoslav government	15,406 ,,	6,964 ,,
Voronezh ,, ...	7,973 ,,	3,403 ,,
Samara ,, ...	7,330 ,,	3,277 ,,
Kherson ,, ...	7,016 ,,	2,965 ,,
Stavropol ,, ...	5,457 ,,	2,741 ,,
Taurida ,, ...	4,145 ,,	2,055 ,,
Saratof ,, ...	4,049 ,,	1,575 ,,
Kief ,, ...	3,978 ,,	1,474 ,,
Kharkof ,, ...	3,938 ,,	1,709 ,,
Terek province	3,871 ,,	1,643 ,,
Kursk government	3,595 ,,	1,570 ,,
Kostroma ,, ...	3,325 ,,	1,561 ,,
Poltava ,, ...	2,942 ,,	1,168 ,,
Kazan ,, ...	2,888 ,,	1,303 ,,
Tambof ,, ...	2,843 ,,	1,371 ,,
Simbirsk ,, ...	2,464 ,,	1,055 ,,

The figures in the above table represent in each instance the total cases and deaths reported down to the week ending August 14th (27th), the latest "corrected" figures available. It will be seen that the epidemic has been most active in the southern provinces of European Russia, in the valley of the Volga, and in the northern Caucasus. At the other end of the scale, only single cases of cholera have been reported from the northerly governments of Archangel, Olonetz, and Pskof; in Finland but two cases were reported (respectively from Kuopio and Nyslott); in the port of Riga only 2 cases with 1 death occurred, and in that of Revel there was but 1 case of the disease. The figures for Central Asiatic Russia and Siberia may be given separately as follows:—

Transcaspia	84 cases,	52 deaths.
Syr Daria province	46 ,,	25 ,,
Uralsk ,, ...	33 ,,	13 ,,
Turgai ,, ...	85 ,,	43 ,,
Akmolinsk ,, ...	245 ,,	144 ,,
Tobo'sk government	86 ,,	40 ,,
Tomsk ,, ...	32 ,,	6 ,,

Cholera in Germany.

The only appearance of cholera in Germany during the present year seems to have been the occurrence of two cases of the disease in Spandau, near Berlin. One occurred on August 25th, the other on August 27th. The latter died in hospital. Several other suspicious cases were seen, but the bacteriological evidence was always found to be negative. On the other hand, on August 31st and on Sept. 1st, 2nd, and 6th cholera-resembling bacilli were found in the intestinal contents of four of the "contacts" who had been isolated in the hospital at Spandau.

Cholera in Austria.

On June 21st it was reported that a fatal case of suspected cholera had occurred at Podvolokziska, on the frontier of Galicia, in a person who had arrived from Rostof on Don. On the 25th of the month the appearance of cholera on the Galician frontier was officially confirmed from Vienna, without further details. Nothing further was heard of cholera in Austria until August 26th, when 2 suspicious cases were reported from Vienna itself; 1 had been isolated on the 23rd and the other on the 24th; 1 died. In both apparently there was bacteriological evidence that the disease was cholera. The source of the infection was not known. Between August 23rd and Sept. 17th, 7 cases of the disease with 2 deaths occurred in Vienna. The latest bulletin states that between Sept. 18th and 24th there were 2 cases of cholera in Vienna and 1 at Brünn, making a total from the beginning of 9 cases in Vienna and 1 at Brünn, with 3 deaths out of the 10 cases.

Cholera in Hungary.

On Sept. 14th it was officially made known here that the following 5 cases of cholera had occurred in various parts of Hungary. On August 28th a woman had fallen ill on the tug *Regensburg*, on the journey from Vienna to Poszony; she died on the 31st. On August 26th a man had died from cholera at Mohacz. On the 30th a woman died at Voeroesmarton. On Sept. 6th a sailor died at Goenyoe. Finally, on the 7th a man died from the disease at Nagybacs. All these places are situated along the banks of the Danube, and it was officially stated that no connexion could be traced between the different cases. On Sept. 19th it was reported that in addition to the above 5 cases 16 others had occurred in Hungary down to the 17th. Finally, between Sept. 17th and 24th as many as 49 cases with 23 deaths were registered.

Cholera in Italy.

On August 18th news was received here of the appearance of cholera in the Italian province of Bari; the first telegram stated that 30 cases with 20 deaths had already occurred. The next day's telegram stated that 26 fresh cases and 22 deaths had been recorded on the 18th. It was at first believed that the infection had been imported by a batch of Russian passengers who had arrived at Bari on August 1st, after stopping at Trani; Bari itself was not at first infected, but Trani was, as also the ports of Barletta, Bisceglie, and Margherita di Savoia. It has not as yet been made clear whether the above-mentioned Russian passengers were in truth the means of introducing the infection to the country. However introduced it soon spread to the province of Foggia. Down to August 22nd 125 certain cases, 6 suspicious cases, and 58 deaths had been registered in the province of Bari, and 59 certain cases with 32 deaths in that of Foggia. On the 22nd there were 29 cases and 25 deaths in the two provinces; on the 23rd 18 cases and 18 deaths; on the 24th 17 cases with 15 deaths; on the 25th 26 cases and 14 deaths, and on the 26th 29 cases and 18 deaths. The subsequent bulletins have been imperfect and irregularly received. It appears, however, that between August 26th and Sept. 20th there were 93 cases and 66 deaths at Barletta, 60 cases and 22 deaths at Molfetta, 49 cases and 28 deaths at Trinitapoli, 29 cases and 14 deaths at Cerignola, 20 cases and 11 deaths at Andria, 19 cases and 19 deaths at Trani, 21 cases and 18 deaths at Margherita di Savoia, 14 cases and 8 deaths at San Ferdinando, 5 cases and 5 deaths at Spinazzola, 4 cases and 3 deaths at Canosa, 2 cases at Bitanto, 3 cases and 1 death at Ortanova, and 1 case and 1 death at Corato.

All the above places are situated on the south-east shores of Italy. More recently cholera has appeared on the opposite shores—at Naples. The information about the outbreak there is conflicting. As early as August 20th it was reported from Rome that, according to rumour, 4 suspicious cases had occurred in Rome and 1 at Naples, but these rumours were not confirmed. In the middle of September it was persistently reported that the disease was epidemic in Naples, but the existence of the disease was equally persistently denied by the Italian authorities. On Sept. 17th the Italian Ministry for Foreign Affairs issued an official bulletin declaring that no case of cholera had been seen in Naples to that date, that the mortality of the town was below the average, that there were several cases of gastro-enteritis in the town but they were few in number and in no way suspicious, that in some of them only coli bacilli were found, but that in some others a cholera-resembling bacillus had been found, which, however, did not agglutinate in a dilution of 1 in 40 or 1 in 50, and that consequently all suspicion of the existence of cholera could be put aside. In spite of this, however, some Italian papers continued to publish cholera bulletins for Naples, declaring that some 10, 15, or 20 cases were occurring there daily. The

authorities continued to deny that cholera existed, though the Turkish, American, Spanish, and other Consuls were delivering "foul" bills of health. Finally, at the end of September it was officially declared that 2 cases of cholera and 1 death had occurred in Naples.

Cholera in Bulgaria.

Up to the present the only mention of cholera in Bulgaria has been the report of a death on Sept. 8th from what was believed to be the disease on board a Hungarian ship at Samovit, a Bulgarian port on the Danube.

Cholera in Roumania.

As in Hungary and Bulgaria, so in Roumania, cholera seems to have been mainly confined to the valley of the Danube. Only very few cases have occurred. On Sept. 7th there was a (suspicious) death of a woman at Galatz, and on the 17th a suspicious case at Tchernavoda, 64 kilometres from Kustendje; but in both these cases the bacteriological evidence was negative. On the 19th a suspicious case occurred at Corabia; on the 13th and 19th two suspicious cases were seen at Braila, and one of these was confirmed by the results of bacteriological investigations. Finally at Galatz a guard on the landing-stage of the Italian line of steamers died from cholera on Sept. 12th, and here also there was bacteriological confirmation of the nature of the disease.

Cholera in Asiatic Turkey.

With cholera prevalent along the Russian shores of the Black Sea, in the ports of Sevastopol, Odessa, Taganrog, Theodosia, Nikolaiefsk, Kertch, Poti, and Batum, it is not surprising that the infection has spread to the parts of Asia Minor adjoining Russian territory. Since the middle of July several imported cases of the disease have been seen on steamers or sailing ships arriving from Russian ports at Trebizond, Surmené (close to the Turko-Russian frontier), Sinope, Kavak (at the entrance of the Bosphorus), and other ports. In the town of Trebizond the earliest cases were seen on Sept. 16th, when 6 cases with 2 deaths were recorded in four different houses. The disease soon spread here; on the 18th there were 6 cases among the reservists newly called to the colours, and on the 21st there were 12 cases in the local prison. The epidemic has since prevailed in the town, among the reservists, and in the prison, and down to Sept. 25th there had been in all 127 (registered) cases and 64 deaths. Of the cases 40 had occurred in the prison.

The infection appears to have passed the land frontier between Russia and Turkey towards the end of July; on the 20th of that month 2 sudden deaths occurred in a batch of 210 persons crossing the frontier at Keutek. It was not, however, until a month later that the disease spread in the neighbouring *vilayet* of Erzerum. On August 22nd 3 cases and 2 deaths were recorded in the village of Vekil Khan, three days' journey from Erzerum, and 2 suspicious cases in Erzerum itself. In the week ending August 26th 21 cases and 13 deaths had been recorded in the *vilayet;* in the week ending Sept. 2nd there were 18 cases and 26 deaths; in that ending Sept. 9th 13 cases and 6 deaths; in that ending Sept. 16th 48 cases and 30 deaths; and in that ending Sept. 23rd 224 cases and 138 deaths. In the last two bulletins the figures relate to the *vilayets* of Erzerum and Van together. In the last bulletin the names of 23 villages are included in the list; that most severely affected was the village of Nardjan, where 130 cases of cholera with 80 deaths had occurred.

The port of Zunguldak, on the Black Sea—important as being the port for the large coal mines of Eregli (Heraclia)—has recently become infected. Since Sept. 28th 10 cases have occurred there among arrivals from Constantinople and inhabitants of the port.

Mention may also be made of a suspicious death at Basra, near the head of the Persian Gulf, but there is as yet no confirmation of the belief that this was a case of cholera.

Cholera in Constantinople.

Apart from rumours and unconfirmed cases, the first case of undoubted cholera in this city (confirmed bacteriologically) was declared on Sept. 19th; the illness had apparently begun on the 13th and the patient (a woman) died on the 17th. This case occurred in the low-lying and specially insanitary quarter of Haskeui, near the tip of the Golden Horn. Down to Oct. 4th there have been in all 69 cases with 34 deaths. The principal "foyers" of the disease have been at Haskeui, and in the equally low-lying and insanitary quarters of Cassim Pasha and Fundukli. The cases have, however, been very widely scattered through all, or a greater part of, this large city, which, with its suburbs, spreads from the Marmara to the Black Sea, and includes the Asiatic shores of the Bosphorus and (for some distance) of the Marmara. From three to seven cases are still being reported daily, and it may be suspected that slight cases occur which do not come to the knowledge of the authorities. It may be noted, however, that the total mortality in the city during the past few weeks has not shown any marked tendency to rise.

Cholera in Persia.

Early in August cholera appeared in the Russian port of Astara on the Caspian Sea, but it was not till the middle of the month that the Persian port of Astara became infected. At Ardebil the disease broke out in July and continued to prevail through August; the returns from this town have been very imperfect, but between August 1st and 10th there were 66 cases and 29 deaths among its inhabitants, who number about 30,000. In July the governor of Ardebil reported that cholera existed at Hassan Barough, Niase, and Nir, on the Ardebil-Tabriz road; on July 19th it was reported from Dare-Djaz and Kelat-i-Nadiri in the province of Khorassan. On August 15th cholera was present in Sorab, a town of 10,000 inhabitants on the Ardebil-Tabriz road, and for some time from 10 to 15 cases occurred there daily. The disease was also reported from Nedjan and Velazguerd, near Ardebil, and from Djounta, near Sorab. Until later and fuller reports are received it is impossible to know exactly the extent of Persian territory invaded by the disease, or the intensity of the epidemic in different portions of that territory.

Constantinople, Oct. 5th.

THE QUATERCENTENARY OF JOANNES CAIUS.

ON Thursday, Oct. 6th, the quatercentenary of the birth of John Caius was celebrated at Gonville and Caius College, Cambridge, of which College he was the second and most munificent founder. The occasion was made largely a medical one, and the justification for this was abundant. Although the University of Cambridge has always kept before her as her ideal a broad academic training rather than a professional equipment, and although this is distinctly the ideal of those at present in authority over Gonville and Caius, yet the second founder of the college was a great physician and president also of a great medical corporation. John Caius in his day was an embodiment of the widest learning as well as an exponent of professional wisdom; he was a fine scholar and had, indeed, once been a professor of Greek; but it was as a court physician that he made the large fortune which enabled him to re-establish the ancient Gonville Hall on lordly lines, and to incorporate with it his new college of Caius. Caius was, moreover, not only President of the Royal College of Physicians of London, but was at one time physician to St. Bartholomew's Hospital, residing within the precincts of the hospital; it was therefore particularly fitting that to the commemoration of his 400th birthday the Master and authorities of his college should invite to take part in the proceedings the official heads of the medical profession. Science in general, indeed, as well as that of medicine, was well represented at the commemoration, as is sufficiently shown by enumerating some of the distinguished guests who were present at Cambridge on the occasion: Professor Sir Clifford Allbutt, F.R.S. (Regius Professor of Physic in the University of Cambridge), Sir W. Allchin, Sir T. Barlow, F.R.S. (President of the Royal College of Physicians of London), Rev. Dr. Bonney, F.R.S. (President of the British Association), Dr. J. B. Bradbury (Downing Professor of Medicine in the University of Cambridge), Mr. H. T. Butlin (President of the Royal College of Surgeons of England), Sir Francis Champneys (chairman of the Central Midwives Board), Sir William Church, Sir Anderson Critchett, Professor Howard Marsh (Master of Downing College and Professor of Surgery in the University of Cambridge), the Bishop of Ely, Dr. W. Ewart, Dr. J. Kingston Fowler, Sir A. Geikie

(President of the Royal Society), Dr. F. de Havilland Hall, Professor Jackson, O.M., F.B.A. (Regius Professor of Greek in the University of Cambridge), Dr. F. G. Kenyon, F.B.A. (Director of the British Museum), Sir Joseph Larmor (secretary of the Royal Society), Dr. P. W. Latham, Dr. E. Liveing, Dr. Norman Moore (senior physician to St. Bartholomew's Hospital), Dr. J. A. Ormerod, Professor W. Osler, F.R.S. (Regius Professor of Medicine in the University of Oxford), Professor W. Ridgeway, F.B.A. (Disney Professor of Archæology), Dr. Sandys, F.B.A. (Public Orator), and the Vice-Chancellor of Cambridge University (Dr. R. F. Scott, the Master of St. John's College).

The proceedings commenced with a service in the Caius Chapel, at which the Rev. Dr. SWETE, Regius Professor of Divinity in the University of Cambridge and Fellow of the College, delivered an excellent address on the fruitfulness of an alliance between scholarship and medicine as exemplified in the persons of St. Luke and John Caius. Following upon the service came the commemoration banquet, at which 162 persons sat down in hall, under the presidency of the Rev. E. S. Roberts, Master of the College, who was supported by the Bishop of Ely (Dr. F. H. Chase, formerly President of Queens' College), the Vice-Chancellor, the Master of Corpus, the Master of Magdalene, the Master of Sydney-Sussex, the Public Orator of the University, and the Mayor of Cambridge. The rest of those present were mainly past and present members of the College, among whom were a large proportion of Doctors of Medicine in the University. After dinner the grace and anthem composed by Dr. Charles Wood, Mus. Doc., and a Fellow of the College, was rendered by the choir from the new gallery of the dining-hall, to which ladies were admitted to hear the speeches.

The MASTER having proposed the loyal toasts, Dr. J. VENN, the President of the College, delivered an eloquent address to the memory of John Caius. Speaking without notes and seldom pausing for word or phrase, Dr. Venn told the moving story of Caius' career in a manner which must have left its imprint on all those who heard him. He described the boundless generosity of the man, his courage in adversity, his unceasing intention to benefit those who, urged by private feelings or by political and religious motives, rebelled within the walls of the college which he had founded against the rules of the man to whom they owed everything.

The *Carmen Caianum* was then sung by the choir, after which the MASTER proposed the health of "The Guests." He took the toast out of its usual order in signification of the fact that those with whose names he coupled it were present at a commemoration banquet to John Caius in circumstances of particular aptness, for Sir Thomas Barlow was President of the College where Caius had once presided, and Dr. Norman Moore was senior physician to the hospital where Caius had once lived and worked. Sir THOMAS BARLOW, in a brief reply, alluded in terms that were very acceptable to all his hearers to the theory of training which the University of Cambridge had set before herself in her desire to abate none of her industry in respect of the old learning, while resolving also to keep abreast with the new learning. Dr. NORMAN MOORE, in an admirable speech, reminded the audience that Caius was the first of three great founders of homes of learning, all of whom were members of the medical profession, the other two being John Radcliffe, whose devises to Oxford led to the foundation of the Radcliffe Library, the Radcliffe Fellowships, and the Radcliffe Infirmary, and Sir Hans Sloane, whose bequest of his splendid collections to the nation in return for a moderate sum of money was the origin of the British Museum. Sir ARCHIBALD GEIKIE then proposed prosperity to the University of Cambridge, whose services to science he as President of the Royal Society was happy to acknowledge, and this toast was fitly coupled, not only with the name of the Vice-Chancellor of the University, but with that of Professor Henry Jackson, the Regius Professor of Greek. Here, again, the reply was invited from a particularly appropriate person, seeing that the feast was in honour of Caius, for there is no doubt, not only from known historical facts, but also from the evidence of manuscripts that Caius was a very good Greek scholar. The toast of "Prosperity to the College" having been proposed by the Bishop of ELY, was replied to by the MASTER

Good weather, good speaking, and great hospitality combined to make the commemoration a notable event in the medical world.

THE CORONERSHIP FOR THE CENTRAL DISTRICT OF THE METROPOLIS.

IN connexion with the appointment of a successor to Dr. G. Danford Thomas, the late coroner for the Central District of the metropolis, the London County Council on Oct. 11th, at the first meeting after the summer recess, received a report from the Public Control Committee recommending the rearrangement of the coroners' districts in North London. Under the Coroners Act, 1892, a vacancy must be filled within three months of its occurrence, so the new appointment must be made not later than Nov. 5th. In consequence of the large size of the central coroner's district the committee in 1891 decided that the district should be divided into two at a suitable opportunity, division to be made as nearly as possible on the basis of the number of inquests. Owing to the Council being in recess when the present vacancy occurred time would not permit of the necessary steps being taken before Nov. 5th to effect an alteration of the boundaries of the district. The committee proposed, therefore, that a coroner should be appointed to the district as at present constituted but at a salary based upon the work in the portion of the district which would be left to him after the boundaries had been rearranged.

The Council in 1895 passed a series of resolutions directed to improving the conditions under which the duties of coroners were performed. It was then pointed out that in London there were ten coroners whose duties and salaries varied considerably; that it appeared probable that a smaller number would suffice under new arrangements; and that it would be more dignified if the position of coroners approximated more nearly to that of stipendiary magistrates with districts about equal in amount of work, and salaries not dependent on the number of inquests held, and with proper courts, including a clerk and other officials necessary in a court of inquiry. The recent Departmental Committee largely endorsed this view, and a Bill now before the House of Commons put the matter in a definite shape. As to the new appointment, therefore, regard should be had to the possibility of alteration of the law.

The committee had come to the conclusion that the arrangement foreshadowed in 1891 was hardly desirable, and that instead of forming an additional district certain modifications should be made in the coroners' districts north of the Thames. The boroughs of Paddington and St. Marylebone should be transferred from the Central to the Western District, and the portion of Finsbury known as the parish of St. Luke should be transferred from the North-Eastern to the Central District. This rearrangement would divide the work about equally between the four coroners' districts north of the Thames, and the work of each district, the committee thought, would not be beyond the powers of a coroner who devoted his whole time to the duties of his office. The new Western District would comprise Hammersmith, Fulham, Kensington, Chelsea, Paddington, and St. Marylebone, with an aggregate population of 839,024, a total of deaths in 1909 of 11,220, and an average number of inquests during five years of 1035. The new Central District would contain Hampstead, St. Pancras, Islington, Holborn, and Finsbury, with a population of 831,903, a total of deaths of 11,927, and an average number of inquests of 1118.

With regard to remuneration, the committee stated that it had been the practice to calculate a coroner's salary upon the basis of a definite sum per inquest and the average number of inquests held, but the committee proposed that a departure should be made from this practice. Hitherto the basis had been 30*s.* per inquest until the salary reached £1350, but no salary went beyond that amount unless the average number of inquests held on a basis of 21*s.* per inquest would produce a higher salary. The earlier basis of £1 6*s.* 8*d.* per inquest, with an allowance of 9*d.* a mile for travelling expenses, had been reverted to in the case of some of the districts. The committee recommended that the salary of the new coroner for the Central District should be £1250 a year, this amount to be regarded as including £250 to meet the expenses of the office, comprising payment of deputy, provision of office accommodation, clerical help, &c. If the Council made the proposed rearrangement of districts, additional work would fall upon Dr. C. Luxmoore Drew, the coroner for the Western District, whose salary should be raised from £1126 to £1400.

In fixing these salaries the committee had in mind the possibility that an amendment of the law might provide for the pensioning of whole-time coroners without requiring them to contribute by a deduction from their salaries. The adoption of the scheme outlined would effect a saving of nearly £800 a year.

The committee recommended that a petition be presented to the King praying him to order the alterations proposed in the coroners' districts; that notice thereof be given to the coroners, and that they be consulted before the petition is presented; and that an advertisement be issued inviting applications for the appointment to the Central District.

When the report came before the Council a member asked the Chairman whether persons who had written to councillors asking for their votes in connexion with the appointment would be disqualified under the standing orders of the Council.

The Chairman replied that if such letters had been written they were highly improper, but as the vacancy had not been advertised, technically no breach of the standing orders had been committed.

The Council adopted the Public Control Committee's proposals and decided to advertise for applications for the post of coroner for the Central District at a salary of £1250 a year.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

County Borough of Birkenhead.—At midsummer of last year the population of this borough was estimated at 120,955; the birth-rate for the year was 30·9, and the death-rate 15·9 per 1000 in each case. The infantile mortality was 122 per 1000 births. In connexion with this latter rate Dr. R. Sydney Marsden discusses the question of adopting the Notification of Births Act, and he concludes that as such adoption would entail considerable expense, and as voluntary work and advice are now being carried out, it is a question whether the advantages gained would be equivalent to the annual outlay required. In support of his opinion he selects certain towns in the North-West district which have adopted the Act, since in his view only towns in this district can be fairly compared with Birkenhead. These towns are Burnley, Preston, Bolton, Stockport, St. Helens, Liverpool, and Bootle, and of these the last three have much higher birth-rates than the remainder. As regards infantile mortality, Dr. Marsden shows that in nearly every year since 1900 the Birkenhead birth-rate is lower than all the others, except Bolton; and he observes that although the Notification of Births Act has been adopted in all of them, their returns do not show any advantage to have accrued therefrom over Birkenhead—i.e., their rates are still higher than those of Birkenhead. But Dr. Marsden does not tell us the dates at which the Act in question was adopted in the several towns mentioned; and all that it appears can be said is that in the majority of these towns—all, in fact, except St. Helens—there was a substantial decrease in 1909 in the infantile mortality-rate, and in several the actual rate of decrease was greater than that of Birkenhead. The problem really has to be settled by considering the fall in each town in relation to its own rate rather than by any comparison between the several towns. But it is clear that excellent work is being done in Birkenhead by the health visitors.

The States of Guernsey.—Dr. H. Draper Bishop estimates the population of Guernsey at 44,145, the birth-rate for 1909 being 22·94 and the death-rate 11·62 per 1000 in each case. The infantile mortality was 109·6 per 1000 births, a rate which was only beaten in 1896 and 1903, in both of which years there was a wet and comparatively cold autumn. Two cases of human diphtheria are stated to have been contracted from a puppy, the nasal discharge manifesting diphtheria bacilli, while one case is attributed to a sick cat. There were four cases of enteric fever which occurred one after the other in, or in connexion with, the same house and which appear to have been due to personal infection. It seems, however, that they were locally attributed to witchcraft. There was during 1909 a severe outbreak of enteric fever at St. Brieuc in France, and as a result the Royal Court of Guernsey, at the instance of the Board of Health, passed an ordinance forbidding the importation of oysters and other molluscs from France. Dr. Bishop expresses the hope that this ordinance may be made a permanent one. This is a method of dealing with impure shell-fish which might be considered by our own Parliament. Arrangements have now been made by the States for granting compensation to the owners of cattle slaughtered for tuberculosis, and a mutual insurance company has been formed towards the same end. There were 756 Guernsey cattle exported during 1909, of which number 703 were sent to the United States. Of this total only four reacted to the tuberculin test. Nineteen cattle were slaughtered during 1909 owing to their having tuberculosis, and in each instance the remaining animals of the herd were tested by the States veterinary surgeon. Dr. Bishop thinks that bovine tuberculosis should soon become extinct in Guernsey. The most pressing need of the island from a sanitary standpoint is the provision of a satisfactory water-supply.

The City of York.—Dr. Edmund M. Smith reports that an arrangement was made with the registrar of the local cemetery in 1907 to forward weekly returns of the particulars concerning each still-birth sent for burial, and during 1909 there were 107 such notices received. When necessary, further inquiries were made. Of the total number in question 73 were notified for burial by medical practitioners, 32 by registered, and 2 by unregistered midwives. Referring to the subject of cancer, Dr. Smith insists upon the need for the education of the public regarding the earlier symptoms of this disease, and he observes that if women would appreciate the possible gravity of abnormal discharges, and at once seek medical advice, much of the mortality from uterine cancer might be avoided. York is one of the relatively few towns which still obtain their water-supply from a river through the agency of a private water company. In this case the water is taken from the Ouse about a mile above the centre of the city, the water being first screened and submitted to settlement in subsiding reservoirs, then passed through a mechanical filter, and finally through sand filter-beds. It does not appear that any prolonged storage prior to filtration is provided for, but the filtrate is regarded as yielding satisfactory bacteriological results.

Borough of Scarborough.—Dr. John Knight, basing his estimate upon the number of occupied houses, places the population of Scarborough at 41,480, instead of 42 156, as estimated by the Registrar-General. The birth-rate, 18·8 per 1000, showed an increase on the 17·7 for 1908. Scarborough, as regards its births, occupies an unenviable position in the matter of illegitimacy, which is attributed largely to the excessive proportion of single women at conception ages. For the period 1876–1905 the illegitimate births per 1000 births in Scarborough amounted to 84, as compared with 44 for England and Wales, and in the year 1909 the local illegitimate rate was no less than 107 per 1000 births. The infantile mortality rate evinces a very gratifying fall since the commencement of the present century, and the rate for 1909 was only 72 per 1000 births. This rate, as Dr. Knight points out, is the more satisfactory in that it obtains notwithstanding the marked rise in the illegitimate birth-rate referred to above—that is to say, there has been a larger number of illegitimate lives, and, as is well known, it is among such lives that the death-rate usually reaches a very high figure. In these circumstances it is refreshing to find Dr. Knight, while according due credit to the various agencies at work, cordially rendering unto Nature that which is her due, and admitting that the cool wet summer was hostile to the prevalence of epidemic diarrhœa. He rightly points out, however, that similar weather conditions have frequently occurred before since 1876 without any corresponding reduction in the infantile mortality rate. Among the steps taken to reduce the infantile mortality in Scarborough is a voluntary system of notification of births of such thoroughness that it has not been deemed desirable to adopt the Notification of Births Act, 1907. There are also mothers' meetings where the babies are weighed and the results recorded, and a "babies' welcome" club, in which expectant mothers are encouraged to save to meet the expenses of their confinement. It had been decided to set aside part of the accommodation at the isolation hospital for the education of tuberculous patients, but an epidemic of scarlet fever prevents the realisation of the proposal.

City of Cardiff.—Cardiff, which has an estimated population of nearly 200,000, derives its water from upland gathering grounds some 35 miles from the city, and the water as supplied to the inhabitants manifests an excellent degree of purity, B. coli in 40 cubic centimetres being generally absent. All the meat consumed in the city is slaughtered in the municipal slaughter-houses, there being no private slaughter-houses, and in order to improve the standard of meat inspection two new inspectors specially conversant with meat have been appointed to act under the direction of the veterinary surgeon. The Notification of Births Act, 1907, was adopted in 1908, and Dr. Edward Walford reports that it has been very useful as a means of reducing infantile mortality. Two health visitors have been appointed, and six centres have been established in suitable parts of the city to which mothers are invited to bring their babies for weighing and advice. Special attention has also been paid to the milk-supply of the town, and powers have been obtained from Parliament under a local Act towards this end, including what are known as the model milk clauses which, *inter alia*, enable the medical officer of health to take samples of milk either within or without the city. Voluntary notification of pulmonary tuberculosis has been in force in Cardiff since 1901 and the number of notifications received in 1909 was 171. In connexion with this scheme educational measures have been practised and arrangements made for gratuitous bacteriological examination. Dr. Walford evidently favours the establishment of a tuberculosis dispensary, and it looks as if one may shortly be in operation. The question of erecting a municipal crematorium has on several occasions been before the sanitary authority, but no decision has yet been arrived at.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 77 of the largest English towns 7741 births and 4163 deaths were registered during the week ending Oct. 8th. The annual rate of mortality in these towns, which had been equal to 13·0 and 13·3 per 1000 in the two preceding weeks, declined last week to 12·8. During the 13 weeks of last quarter the death-rate in these towns averaged 11·8 per 1000, corresponding with the rate that prevailed in the third or summer quarter of last year. In London the death-rate last quarter, calculated on the probably over-estimated population, did not exceed 11·0 per 1000. The lowest reported annual death-rates in these 77 towns last week were 3·7 in King's Norton, 6·5 in Handsworth, 6·6 in West Bromwich, and 7·1 in Tottenham; the rates in the other towns ranged upwards to 18·9 in Stoke-on-Trent, 19·0 in Rochdale, 20·7 in Sunderland, and 21·8 in Burnley. In London the reported death-rate last week did not exceed 12·3 per 1000. The 4163 deaths registered in the 77 towns last week showed a decline of 168 from the number returned in the previous week, and included 497 which were referred to the principal epidemic diseases, against numbers declining from 720 to 537 in the six preceding weeks; of these 497 deaths, 311 resulted from diarrhœa, 53 from measles, 49 from whooping-cough, 42 from diphtheria, 21 from scarlet fever, and 21 from enteric fever, but not one from small-pox. The mean annual rate of mortality from these diseases in the 77 towns last week was 1·5 per 1000, against rates ranging from 2·2 to 1·6 in the six preceding weeks. No death from any of these epidemic diseases was registered last week in East Ham, Hornsey, Reading, Bournemouth, Handsworth, Hastings, or Great Yarmouth; the annual death-rates therefrom ranged upwards, however, to 3·9 in Burnley and in Huddersfield, 4·2 in Grimsby, and 4·4 in Bury. The deaths attributed to diarrhœa in the 77 towns, which had declined in the five preceding weeks from 527 to 364, further fell last week to 311; in the several towns, however, they caused annual rates ranging upwards to 2·6 in Blackburn and in Preston, 3·4 in Burnley, 3·5 in Bury, and 4·2 in Grimsby. The 53 fatal cases of measles showed an increase of 21 upon the low number in the previous week, and included 18 in London, 11 in Liverpool, 5 in Manchester and Salford, and 3 in Leeds. The 49 deaths from whooping-cough also showed an increase; this disease was most fatal in Rotherham, where the 3 deaths were equal to an annual rate of 2·4 per 1000. The 42 deaths referred to diphtheria showed a further increase upon the numbers in recent weeks, and exceeded the number in any previous week of this year; they included 13 in London and its suburban districts, 4 in Stoke-on-Trent, and 3 in Leeds. The fatal cases of scarlet fever, which had been 27 and 25 in the two previous weeks, further declined last week to 21, including 2 in Bristol and in Sheffield and 3 in Salford. The deaths referred to enteric fever, which had increased in the four preceding weeks from 12 to 38, declined again last week to 21, of which 7 were registered in London and 3 in Hull. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had increased in the seven preceding weeks from 1423 to 1653, had further risen to 1706 on Saturday last; 245 new cases of this disease were admitted to these hospitals during the week, against 201, 210, and 249 in the three preceding weeks. The 1148 deaths from all causes in London last week included 165 which were referred to pneumonia and other diseases of the respiratory system, showing a decline of 13 from the number in the previous week; they were 7 below the corrected average number in the corresponding week of the five years 1905–09. The causes of 33, or 0·8 per cent., of the deaths registered in the 77 towns during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, Nottingham, Leicester, and in 50 other smaller towns; the 33 uncertified causes of death in the 77 towns last week included 7 in Liverpool, 4 in Birmingham, and 2 each in London, St. Helens, Rochdale, Sheffield, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 845 births and 521 deaths were registered during the week ending Oct. 8th. The annual rate of mortality in these towns, which had been equal to 13·0, 13·6, and 13·7 per 1000 in the three preceding weeks, further rose to 14·4 in the week under notice. During the 13 weeks of last quarter the death-rate in these towns averaged 12·9 per 1000, and exceeded by 1·1 the mean rate during the same period in the 77 largest English towns. The annual death-rates in the eight Scotch towns last week ranged from 10·2 and 11·7 in Leith and Paisley to 16·9 in Dundee and 19·6 in Perth. The 521 deaths from all causes in the eight towns last week showed a further increase of 24 upon the numbers in the three preceding weeks, and included 69 which were referred to the principal epidemic diseases, against 78, 72, and 83 in the three preceding weeks; of these 69 deaths, 40 resulted from diarrhœa, 14 from diphtheria, 8 from whooping-cough, 5 from scarlet fever, and 2 from "fever," but not one either from measles or small-pox. The mean annual rate of mortality from these epidemic diseases in the eight towns last week was equal to 1·9 per 1000, the rate from the same diseases in the 77 English towns being only 1·5 per 1000. The deaths attributed to diarrhœa in the Scotch towns, which had been 45, 47, and 51 in the three preceding weeks, declined last week to 40, but included 23 in Glasgow, 4 in Dundee and in Paisley, and 3 in Aberdeen and in Leith. The 14 deaths from diphtheria corresponded with the number in the previous week; 8 occurred in Glasgow and 4 in Edinburgh. The 8 fatal cases of whooping-cough also corresponded with the number in the previous week, including 4 in Glasgow and 3 in Greenock. Three of the 5 deaths from scarlet fever occurred in Glasgow, as did both the deaths referred to "fever"; of the latter, 1 was certified as enteric and 1 as cerebro-spinal meningitis. The deaths referred to diseases of the respiratory system in the eight towns, which had been 64 and 61 in the two preceding weeks, increased to 72 in the week under notice, and exceeded by 13 the number in the corresponding week of last year. The causes of 12, or 2·3 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, the mean annual rate of mortality during the 13 weeks of last quarter averaged 16·3 per 1000; the mean rate during the same period did not exceed 11·8 in the 77 largest English towns and 12·9

in the eight principal Scotch towns. The annual death-rate in Dublin during the week ending Oct. 8th was equal to 19·5 per 1000, against 18·8, 21·4, and 20·2 in the three preceding weeks; this rate, however, exceeded by 7·2 per 1000 that which prevailed last week in London. The 151 deaths from all causes in Dublin last week showed, however, a further decline of 5 upon the numbers in the two preceding weeks, and included 20 which were referred to the principal epidemic diseases, against 29 and 30 in the two previous weeks; these 20 deaths were equal to an annual rate of 2·6 per 1000, the rate from the same diseases last week in London being only 1·1. The 20 deaths from these epidemic diseases in Dublin included 12 from diarrhœa, 2 each from diphtheria, enteric fever, and whooping-cough, and 1 each from measles and scarlet fever. The fatal cases of diarrhœa in Dublin, which had been 21 and 27 in the two previous weeks, declined to 12 last week. The causes of 3, or 2·0 per cent., of the deaths registered last week in Dublin were not certified, corresponding with the number in each of the two preceding weeks. In Belfast during last week 200 births and 94 deaths were registered. The deaths showed a further decline from the numbers returned in recent weeks and were fewer than in any previous week of this year. The annual rate of mortality in the town, which had been equal to 16·3 and 14·0 per 1000 in the two preceding weeks, further declined last week to 12·5. The 94 deaths from all causes in Belfast last week included 9 which were referred to the principal epidemic diseases, against 18, 17, and 12 in the three preceding weeks, and were equal to an annual rate of 1·2 per 1000; of these 9 deaths, 7 resulted from diarrhœa, and 1 each from measles and whooping-cough. The fatal cases of diarrhœa in Belfast, which in the six preceding weeks had declined from 29 to 7, were again 7 last week. The causes of all but one of the 94 deaths registered in the town last week were duly certified either by a registered medical practitioner or by a coroner.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff-Surgeons: A. R. H. Skey to the *Inflexible*, on recommissioning; and M. P. Jones to the *Hogue*. Surgeons: C. G. Sprague to the *Inflexible*, on recommissioning; G. A. S. Hamilton to the *Jupiter*, additional, for disposal in the Portsmouth Subdivision of the Home Fleet; and J. P. Berry to the *Orontes*.

ROYAL ARMY MEDICAL CORPS.

Major John J. C. Watson, C.I.E., retires on retired pay (dated Oct. 8th, 1910).

Lieutenant-Colonel John Battersby is placed temporarily on the half-pay list on account of ill-health (dated Oct. 2nd, 1910).

Captain Denis J. F. O'Donoghue retires receiving a gratuity (dated Oct. 12th, 1910).

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant George F. Randall is seconded for service under the Colonial Office (dated August 13th, 1910).

DEATHS IN THE SERVICES.

Brigade-Surgeon-Lieutenant-Colonel Robert Nasmyth MacPherson (A.M.S. retired), recently at Weymouth, in his seventy-third year. Shortly after qualifying in 1864 he entered the army as assistant-surgeon, being first attached to the Royal Field Artillery and afterwards the Army Medical Staff. He had a considerable amount of foreign service and served 15 years in India. He was at one time medical officer in charge of the military hospital at Portsmouth.

ROYAL NAVAL HOSPITAL, HASLAR.

The prizes to the newly-entered surgeons who have been under instruction at the Royal Naval Hospital, Haslar, were distributed on Oct. 7th by Admiral Sir John Durnford, president of the Royal Naval College, Greenwich. Among those present was the Director-General of the Medical Department of the Royal Navy, Sir James Porter, K.C.B. After Inspector-General T. D. Gimlette had read a very satisfactory report the prizes were distributed. Surgeon W. H. King won the gold medal, Surgeon H. E. R. Stephens the silver medal and prize for analysis, Surgeon C. F. O. Sankey the prize for hygiene, and Surgeon J. S. Ward the prize for tropical medicine. Admiral Sir John Durnford, in addressing those present, said the provision and organisation of the services in peace and war was of considerable importance to the nation and of deep interest to the naval medical and nursing services. The question as to whether any steps were necessary to render the national forces more efficient had been considered by a committee with which he had been connected and certain recommendations had been unanimously agreed upon. Those recommendations had not yet been made public, but he hoped that effect would soon be given to them.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The first place in the October issue of this journal is given to an article by Major C. E. Pollock on Florence Nightingale in regard to her work in connexion with the military hospitals in the East in 1854–55. By reason of her sex and the nature of the work to which she dedicated her life she is associated in the public mind with a very large amount of sentiment which is apt to obscure the real woman, and Major Pollock has done a useful work in making clear the wonderful organising capacity of her brain. The article, which will be read with great interest, contains the rules which Miss Nightingale laid down for her nurses, as well as letters written from Scutari and Balaklava, and, as Major Pollock points out, show what a complete grasp Miss Nightingale had obtained of the whole subject of military nursing by females after little more than six months' experience. The article concludes:—

> More fortunate than many other great public benefactors, Florence Nightingale was permitted to see the fruits of her teaching in the establishment of numerous training schools for nurses, and the elevation of nursing from an occupation followed by elderly women of no education into a scientific profession under the patronage of the highest ladies in the land. It may not be generally known that the red uniform cape worn by the ladies of the Queen Alexandra's Imperial Military Nursing Service is modelled on that originally introduced by Florence Nightingale for the nurses whom she took with her to Scutari. This cape may therefore be regarded as a memorial to the great founder of military nursing.

BRITISH RED CROSS AND TERRITORIAL NURSING NOTES.

On Oct. 5th Lord Basing presided at a meeting of the Hampshire branch of the British Red Cross Society, which was held at Odiham, when it was decided to form a voluntary aid detachment.

Voluntary aid detachments are about to be formed in Carlisle.

The Mayoress of Westminster and Lord Cheylesmore have issued on behalf of the Red Cross Society an appeal to large employers of labour for assistance in raising in Westminster voluntary aid detachments to afford supplementary aid to the Territorial Medical Service in national emergency.

Deputy-Inspector-General Thomas Edward Henry Williams, R.N. (retired), has been appointed Resident Examining Officer for Recruiting Duties at Bristol.

THE BRITISH RED CROSS SOCIETY.—A public meeting was held on Oct. 7th at Exeter in connexion with the Exeter division of the British Red Cross Society. The Mayor presided, and there was a large and influential gathering. Sir Frederick Treves gave an interesting address on the Red Cross Society, and said that he could not imagine any project that appealed more to patriotism than to offer aid to sick and wounded fellow-countrymen in the event of this country being invaded.

THE NORTH DEVON INFIRMARY, BARNSTAPLE.—The annual meeting of the subscribers to the North Devon Infirmary was held on Oct. 4th under the presidency of the Mayor. The medical report stated that during the past year the in-patients numbered 754, against 815 in the previous 12 months. 2614 out-patients were treated, compared with 2904 in the preceding year. The financial statement showed a deficit of £371. The committee stated that through the generosity of the late Mr. W. Allen a complete new dental department had been opened in connexion with the infirmary, and added that through want of funds it had been reluctantly decided to close one of the wards last March.

Correspondence.

"Audi alteram partem."

THE MEANING OF THE AUDIBLE SOUNDS IN MITRAL STENOSIS.

To the Editor of THE LANCET.

SIR,—It may seem presumptuous on my part to criticise Dr. Alexander Morison's learned and closely argued paper contained in your issue of Oct. 8th, yet whilst agreeing in the main with his views, I hesitate to accept some of his conclusions as to the meaning of the second and third sounds which form part of the triple apical rhythm in mitral stenosis. He maintains that the second of these three sounds is produced by a left ventricular extra-systole, and that the third is in reality the second cardiac sound with a "bruit admixture." These are the conclusions which I would venture to discuss, but before doing so some preliminary remarks seem necessary.

In the first place I cannot regard the triple apical rhythm or a presystolic bruit as evidence of mitral stenosis, for although these sounds are commonly heard in children of 5 or 6 years, the "button-hole" mitral valve is practically unknown at this age. I do not doubt that stenosis does take place in many of these young children if they live long enough, but in early life the triple apical rhythm and presystolic bruit are evidence not of stenosis but of roughened and perhaps incompetent mitral valves.

In the second place, I would deprecate the use of the term "reduplicated second sound" to describe the second and third sounds which form part of the apical triple rhythm. For were they indeed due always to asynchrony in the closure of the aortic and pulmonary valves respectively, as the term implies, they should be audibly divided at the base of the heart (at all events in a child) and not audible only "in a limited area—namely, the inner apex or, more precisely, in an area usually extending from the apex to the left edge of the sternum and upwards as far as the fourth rib."

Of course, reduplication of the second sound *may* be audible at the apex, but if it is really due to asynchrony in closure of the aortic and pulmonary valves, it must also be heard at the base, whereas in the cases to which I refer the triple sound is heard only at the apex. A further reason for disputing that the second and third sounds of the triple apical rhythm are reduplicated cardiac second sounds is that they are quite unlike each other in character, whereas the divided sounds produced by asynchrony in closure of the aortic and pulmonary valves respectively are precisely similar in timbre and duration.

The simplest explanation of the triple apical rhythm is that the first of the three sounds is the heart's first sound (often accompanied by a systolic bruit), the second is the ordinary normal cardiac second sound due to sudden tension of the aortic and pulmonary valves, whilst the third is a diastolic bruit produced at the mitral orifice. This diastolic bruit is direct and not regurgitant, for it is never conducted outside the apex of the heart into the axilla. In quality it is never short and sharp like the second of the three sounds, but is always softer and more prolonged than the second sound, and its duration often varies almost from hour to hour.

When the heart is beating forcibly and rapidly this diastolic bruit becomes shorter, but, as Dr. Morison says, "it remains a long sound as compared with the second." When cardiac action is slow and languid the bruit may be prolonged throughout the diastolic period until it becomes a typical rumbling and crescendo presystolic murmur.

Dr. Morison's suggestion is that the second of the triple apical sound is "a left ventricular extra-systole, so closely approximated to the preceding systole as to be *graphically* unregistrable but nevertheless audible." I cannot help thinking that he weakens his suggestion by admitting that this ventricular extra-systole is "graphically unregistrable," for whilst sharing his caution in drawing inferences from graphic records, I should expect that our delicate modern instruments of precision would afford some evidence of a ventricular extra-systole in a cardiogram. Surely a muscular contraction sufficient to produce a sound so audible as this is, would reveal some indication of its presence on a tracing.

Again, were it due to a ventricular extra-systole one might expect it to be accompanied at times by a systolic bruit, considering that the triple rhythm is as a rule associated with mitral disease. But to my ear at all events, the second of the triple sounds is always clear, short, and sharp, and in all respects resembles the normal second cardiac (aortic and pulmonary) sound. I find it difficult, moreover, to believe that close approximation of an ordinary and an extra-systole prevents the latter from being graphically recorded, for in my experience the interval between them is of definite and appreciable duration.

The third sound of the triple apical rhythm Dr. Morison regards as the second cardiac sound with a "bruit admixture." I quite agree as to the bruit, and in the case which forms the text of Dr. Morison's paper no doubt there was a genuine reduplication of the second cardiac sound heard both at base and apex, and obscured at the latter site by a diastolic bruit. But for reasons already mentioned I am disinclined to believe that the third sound of the triple apical rhythm is only a reduplicated second cardiac sound. I regard it as a diastolic bruit which in early stages of mitral disease may become temporarily presystolic, and eventually may become permanently so. In some cases I admit that it may be associated with a reduplicated second sound, but as a rule it is a diastolic mitral bruit and nothing else.

Dr. Morison is, I believe, correct in attributing the bruit to a weak flow of blood from auricle to ventricle through a diseased (but not necessarily stenosed) mitral valve, and when it becomes prolonged and presystolic in character the sound is probably due partly to suction of blood through the diseased mitral valve by the expanding ventricle, and partly to the final impulse given by systole of the auricle to its contents.

The meaning of the triple apical rhythm is not merely of academic or physiological interest. Asynchrony inclosure of the aortic and pulmonary valves is of minor importance as compared with mitral disease. Hence my object in writing is rather to protest against the common teaching that the second and third sounds of the apical triple rhythm are to be regarded merely as reduplicated second cardiac sounds than to take exception to Dr. Morison's views which necessarily bear more weight than my own.

I do not dispute that true reduplication of the second cardiac sounds may be audible at the apex, but such cases need careful discrimination from those in which the third sound of the triple apical rhythm is a mitral diastolic bruit.

I am, Sir, yours faithfully,

LEONARD GUTHRIE.

Upper Berkeley-street, W., Oct. 8th, 1910.

EFFICIENT VENTILATION AT SEA.

To the Editor of THE LANCET.

SIR,—I entirely dissent from the views expressed by the writer of the note in THE LANCET of Oct. 8th. The public are quite right in the use of fans, and no better means could be taken for relieving the discomfort of ship cabins. The chemical purity is not the only need, nor in all cases is it the first need, of ventilation. In warm, moist, stagnant air we suffer from the strain on our heat-regulating mechanism, and the movement of the air relieves this. If the writer would let me put him into my experimental chamber at 80°-85° F. (wet bulb) he would cry out for the fans to be put on, and he would neither sense nor care if the CO_2 rose, not to 0·5 per cent., as in the closest and most crowded living room, but to 4–5 per cent.! In close atmospheres we long for air and for moving air. A close day is a moist, warm day with no wind stirring. We long for wind. The common expressions of everyday life show this. All the text-book teaching is based on an ideal of chemical purity. But all the experimental evidence shows that 1 or 2 per cent. more or less CO_2 or oxygen in the air breathed makes no physiological difference. There is no evidence worth a jot that the traces of organic material found in close air are harmful. As in the case of water, the organic material is only an indicator of the number of bacteria present in the air.

When the evidence is sifted we find the claim for chemical purity (in the absence of dangerous pollutions such as CO) can be based justly on bacteriological grounds alone. We catch colds in spite of all our systems, and the open-air man as a rule does not, in spite of exposure to the same infection. Moving cool air by its cooling effect tones up the skin and nervous system, keeps us active, increases our metabolism,

the oxygen taken in, and the food later; by increasing muscular activity it aids the circulation, for the muscles pump the blood as, or even more, effectively than the heart. After muscular activity the heart is relieved and the arterial pressure kept down.

The immune properties of the blood are brought into action by an active circulation and are probably increased by a greater metabolic turnover. Open-air treatment is not a question of chemical purity of the air, but acts by increasing the metabolism, and so the vigour of the body. The cool moving quality of the air is the active agent, and it is continual exposure to such air and to active muscular exercise that we owe most of the benefit of sea and mountain holidays. The relief given by fans in an air-tight chamber at 85° F. (wet bulb) is complete, when eight men have been shut in it for 30 minutes and the CO_2 has reached 5 per cent. No fresh air is brought in, but the stagnant stale air is whirled and it cools the sweating body.

I am, Sir, yours faithfully,

LEONARD HILL.

London Hospital Medical College, Oct. 11th, 1910.

THE PROPERTY IN PRESCRIPTIONS.

To the Editor of THE LANCET.

SIR,—The views of my friend Mr. H. Wippell Gadd as to the ownership of prescriptions do not seem to me to be conclusive. I hold that a prescription is a confidential message sent to the pharmacist, instructing him how to prepare and label certain remedies, intended to bring about the cure for which the physician is engaged. I submit, therefore, that the document, being a legal warrant to the chemist to supply certain, perhaps poisonous, drugs to the patient, for which the pharmacist might otherwise be punishable by law, should, properly speaking, be retained by him.

Consider the document carefully. It is written in a tongue presumed to be unknown to the patient. It opens with a certain mystic symbol ℞, which is taken to be a contraction for the imperative "recipe," "take thou"; in other words, it is a distinct instruction addressed to a subordinate. It runs, for instance:—

℞ Morphinae acetatis ... ... gr.ss.
Pulveris colchici ... ... gr.iii.
Fiat pilula, quartis horis sumenda.
Mitte vi. folio argenteo involve.

That is, the chemist is directed to take so much morphine and so much colchicum, to make so many pills, to silver them in a certain way, and to put on a certain instruction for the patient.

It seems to be suggested that the physician's contract is to furnish a prescription to cure the malady, that therefore it is the patient's property. I submit not. The pharmacist is not an independent contractor; he acts merely as agent for the doctor. It is not for him to disclose the nature or contents of the prescription or to comment on its suitability. Neither is it for him to dispense morphine to anyone who chooses to ask for it; he must have a medical prescription—and a medical prescription is not any favourite formula of a bygone physician, copied from the books, but a definite order of an actually attendant physician for the specific patient, not for any infant or idiot. Suppose I write an order for the nurse, "Give the patient an enema of soap-and-water," is the prescription his property? Can he produce it as an authorisation at any time to any nurse to give the enema at my instructions? I submit not; and I suggest that the prescription to the chemist is on all fours with this case rather than with those from other professions which Mr. Wippell Gadd cites.

I am, Sir, yours faithfully,

J. C. MCWALTER, M.D. Brux., D.P.H., F.F.P. & S.G.,
Oct. 1st, 1910. Of the King's Inns, Barrister-at-Law.

ON THE FAILURE OF NERVE ANASTOMOSIS IN INFANTILE PALSY.

To the Editor of THE LANCET.

SIR,—We were much interested in Dr. A. Stoffel's criticism of Sept. 10th of our paper in THE LANCET of April 2nd, 1910, on the Failure of Nerve Anastomosis in Infantile Palsy. This criticism is founded chiefly on some valuable work of Dr. Stoffel published in the *Zeitschrift für Orthopädische Chirurgie*, Vol. XXV., 1910. We may therefore be pardoned for not having availed ourselves of his help, since our cases were operated upon from two to five years ago.

Two points may be mentioned in which we fear the absence of a detailed account of our cases may lead to misinterpretation. First, Mr. Murray took care that an actual severance of healthy nerve fibres was always made; we had long been aware of the necessity for this. Secondly, in Case 4, when we wrote, "the extensors of the right foot alone were paralysed," we meant to imply that the sural muscles were unaffected and not that the peroneal group (musculo-cutaneous) was free.

Dr. Stoffel's paper is largely a record of dissection results, and it still remains to be shown how far these results can be applied at the operation table. We think that to some extent this may be done, and the partial success which he has obtained in deltoid and biceps paralysis by a double nerve anastomosis—i.e., circumflex to ulnar and musculo-cutaneous to median—is gratifying. This procedure was in our mind when we stated that in our opinion too much had been attempted when dealing with cases of infantile palsy, and that a less ambitious operation might be more successful. Dr. Stoffel believes that the fibres to individual muscles retain a given position throughout a nerve trunk, and his contribution to this important question is a most careful one. We venture, however, to make three observations on this matter. 1. It is known that at least one-third of a nerve trunk may be cut without any appreciable palsy resulting. 2. That the most satisfactory demonstration of the course of nerve fibres is to be obtained by the partial section of a nerve trunk and a study of the sites of the resulting Marchi degenerations. 3. That the dissection method may, as a nerve fibre is followed up, unravel the twisted skein and so produce a deceptive appearance of the fibres lying in a given sector of the trunk.

We are, Sir, yours faithfully,

R. W. MURRAY.
Liverpool, Oct. 9th, 1910. W. B. WARRINGTON.

THE ST. JOHN AMBULANCE ASSOCIATION AND THE TERRITORIAL FORCE AMBULANCE SERVICE.

To the Editor of THE LANCET.

SIR,—As a member of the Order of St. John of Jerusalem and of its ambulance department I was much attracted and interested by the very ably written article on that Order which appeared in THE LANCET of Sept. 24th. It is but a few weeks ago that I read in the *Hospital* a paragraph in which it was asserted that the sole *raison d'être* of the Order was its ambulance department. Tradition, it may be, weighs little with some persons. To my mind, the Order, of which Sismondi wrote that a nation organised as it was could conquer the world, and Gibbon that though "they had neglected to live they had been prepared to die in the service of Christ," embodies traditions the grandeur of which can hardly be surpassed. Of such traditions, however, up-to-date education knows and recks little.

I gather that the death of Miss Florence Nightingale, who was a Lady of Grace of the Order of St. John, inspired the admirable paper to which I have referred. In the public expression of that strong national feeling to which her death gave rise I also found food for thought. If others have done splendid work in the cause of aid to the sick and wounded, the "Lady of the Lamp" was the one on whose brow in the eyes of the people the halo of heroism rested. It seemed to me that only the irony of fate could have willed that the two organisations, to which the country looks for the provision of the ambulance service of its Territorial Force, should at the moment of her decease be very much at variance. Both sent wreaths for her funeral; both were represented at the memorial service at St. Paul's; but this unanimity was merely conventional. In 1854 Miss Nightingale rescued a Secretary of State for War from the wrath of a nation exasperated by the reports of the sufferings of the sick and wounded in the Crimea. The War Office of 1910 would best repay their great debt of gratitude to Miss Nightingale by promoting peace between the "St. John Ambulance" and the "Red Cross."

Your article mentions many distinguished medical men as being members of the Order of St. John. I would fain have the privilege of selecting two of their number to act as mediators in the deadlock which is paralysing the War Office "Voluntary Aid" scheme. My selections would be

Sir Frederick Treves and Sir Arthur Conan Doyle. The latter wrote from South Africa ten years ago a most touching tribute (possibly in your columns) to the courage and devotion of the St. John Ambulance hospital orderly. The former stated at the banquet given by the Reform Club on April 30th, 1900, in honour of Sir William Mac Cormac and himself, that "there had never been a campaign in which the horrors of war had been so mitigated and the treatment of the wounded so complete" as in South Africa. To this noble work the St. John Ambulance Association contributed 2200 men, of whom about 70 died during the war.

I am, Sir, yours faithfully,

The Athenæum, Oct. 7th, 1910. A. C. YATE.

*** Since our correspondent's letter was received the War Office has entered into an agreement with the St. John Ambulance Association under which the Army Council can register St. John Ambulance Brigade and County Companies, under certain conditions, as Voluntary Aid Detachments. In this way further provision is made for the sick and wounded of the Territorial Force in case of war.—ED. L.

THE ETIOLOGY AND DIAGNOSIS OF GERMAN MEASLES (RUBEOLA).

To the Editor of THE LANCET.

SIR,—Dr. C. Beards and Mr. W. L. Goldie, in their paper on German measles, published in your issue of Oct. 1st, make mention of certain "small yellowish plaques usually on the mucous membrane behind the last molar teeth of the lower jaw," and state that "as they are occasionally present in morbilli and scarlet fever they are of little value in diagnosis." In my experience these plaques or spots are not confined to patients suffering from rubella, morbilli, or scarlet fever, but will occasionally be found in children who are in good health. They usually form a group of which the posterior are much larger than Koplik's spots, though the anterior may closely resemble them. They are of a faint orange-yellow colour.

I think it is a pity that the writers of the paper do not employ the word "rubella" instead of "German measles" or "rubeola." The term "rubella" has suffered less misuse than any other designation; its brevity makes it better than "German measles"; it raises no false idea of origin, and avoids confusion. Further, it has been adopted by the majority of writers on infectious diseases of recent years to signify the disease in question. The term "German measles" is misleading and a little cumbrous. "Rubeola" is also misleading. It has been applied to measles (morbilli), e.g., by Corlett in his "Treatise on the Acute Infectious Erythemata" (1902). This writer agrees with others in the use of the word "rubella."

I am, Sir, yours faithfully,

E. W. GOODALL.

The Eastern Hospital, Homerton, N.E., Oct. 5th, 1910.

THE TREATMENT OF THE MORPHIA HABIT BY "PANTOPON."

To the Editor of THE LANCET.

SIR,—The preparation of opium referred to by Dr. Oscar Jennings in THE LANCET of Oct. 8th as Pantopon is known in Great Britain as "Omnopon," and represents the total alkaloids of opium in the form of hydrochloric salts. The average dose is 1/5th to 1/3rd of a grain three times a day. For internal medication, tablets have been prepared consisting of "Omnopon" 1/10th of a grain triturated with sugar of milk. This form is suitable for the continuous use of "Omnopon" in suitable cases. Ampoules of 1 cubic centimetre of a 2 per cent. sterile solution of "Omnopon" are placed on the market. One cubic centimetre of this sterile solution equals 1/3rd of a grain "Omnopon." In addition to Dr. Oscar Jennings' work on "Morphinisme et Morphinomanie," other references to Pantopon will be found in *Münchener Medizinische Wochenschrift*, No. 25, 1910, (Sahli); "Therapie der Gegenwart," 1910, Book 5 (Hallervorden); *Therapeutische Monatshefte*, January, 1909 (Sahli); and *Münchener Medizinische Wochenschrift*, No. 7, 1910 (Heimann).—We are, Sir, yours faithfully,

THE HOFFMANN-LA ROCHE CHEMICAL WORKS, LTD.

Idol-lane, E.C., Oct. 11th, 1910.

COMPULSORY INSURANCE AGAINST SICKNESS IN GERMANY:

ITS BEARING ON THE MEDICAL PROFESSION.

(FROM A CORRESPONDENT.)

Industrial Conditions Leading to Compulsory Insurance.

THE introduction of steam power gave birth to those vast industries that now form a great part of a nation's assets and the developments of electricity tend to multiply those industries indefinitely. As a result of the conditions under which they work, the thousands of hands employed in manufactories and allied enterprises recently began to form a distinct body of the community at large. These workers are dependent for their livelihood on their daily wage, they have no personal interest in the fruits of their labours, and are not bound by any strong ties to a particular locality, but are free to seek their work according to momentary phases regulating demand and supply. In this they contrast with the tradesman or holder of land, however small the title to independence and ownership may be. Many workers are either not in a position or feel no inclination to save for the proverbial rainy day, and thus, when overtaken by some catastrophe, as sickness or want of employment, not only they but those dependent upon their earnings are cast upon the charity of the remainder of the community. This question marks one of our gravest social problems, all the more difficult to solve as the political element has entered largely into the minds of those actively engaged on the subject.

For some time past various countries have taken steps towards effecting a remedy in this state of affairs, and the granting of old-age pensions was the first step taken by Great Britain towards breaking with the time-honoured custom of leaving the individual subject to work out his own salvation. This may quite soon be extended by the compulsory insurance against sickness. A Government measure of this kind will naturally affect to a certain extent the interests of the medical profession, and it would be well to consider in time the points likely to be raised. As matters are at present, an agreement between a sick club or friendly society and a medical man is to all intents and purposes a purely business question, largely influenced by competition in the struggle for life. When the State, however, decides to introduce some social reform, it would be lacking in its duty towards safeguarding the interests of the whole nation it embodies by conferring benefits on a few to the exclusion of others, and it is here that the medical man's interests must be taken into consideration.

State Insurance against Sickness in Germany.

Among those countries that have already introduced State insurance against sickness, Germany, as the pioneer country, will serve as an apt illustration. The regulations regarding compulsory insurance against sickness, which are to a certain extent distinct from the insurance against accidents and the invalidity and old-age pensions, may be briefly summarised as follows:—

Every male or female person, regardless of age, whether unmarried or married, German subject or foreigner, employed in the country in any form of trade or work, receiving a salary or pay not exceeding £100 per annum, is compelled to be insured against sickness. Legally freed from this obligation are soldiers, officials, and servants of the empire, states, or municipalities, for which other provision has been made, also pharmaceutical assistants and apprentices. All persons whose income is under £100 a year may voluntarily insure themselves. The insured become members of a distinct sick club, of which many kinds are recognised. They may be divided into two classes:—1. Sick clubs composed of members belonging to the same profession or branch of trade in a certain locality. These are called local sick clubs, and each must have at least 100 members. Or the workers in a certain trade may

be insured in a trade sick club embracing all its members throughout the empire; these correspond somewhat to the trade unions. Factories, mines, and other undertakings employing over 50 workpeople may form their own sick club. 2. Municipal sick clubs, to include all those not insured in one of the above kind of clubs.

The various sick clubs are self-governing, but are under control and inspection of the Government authorities. Employers and employees participate in the management, and both parties have to contribute; one-third of the amount levied has to be paid by the employer and the remaining two-thirds are contributed by the insured person. The total contribution may not exceed 4 per cent. of the member's wages. To take a concrete example. A workman employed in a factory with a sick club levying 3¾ per cent. is earning 30*s.* a week. He will have to contribute two-thirds of the total amount levied (1*s.* 1½*d.*)—i.e., 9*d.*, and his employer 4½*d.*, a week. It may be mentioned that every sick club is compelled to possess a reserve fund representing the total annual expenditure based on an average of three years' expenses. This fund is entrusted to the authorities who have to take charge of its administration.

In case of illness of a member, the sick club has to defray all the costs of medical attendance, medicines, trusses, spectacles, &c., or of any special treatment required; for instance, a member may be sent to undergo a course of baths at some well-known resort at the club's expense. These benefits are granted for a period not exceeding 26 weeks, after which time, if the person is still incapacitated for work, the provisions of the invalidity insurance are enforced. During this time the patient may undergo treatment in a hospital, or failing this he receives sick pay from the third day of falling ill, corresponding to half his wages, but not exceeding 3*s.* a day. If the member is compelled to undergo treatment in a hospital, those dependent upon his wages for their maintenance receive half the amount he would be otherwise entitled to as sick pay. In case of death 20 times his average daily wage is paid out. Female members are entitled to full sick pay for six weeks after childbirth. The above represent the minimum that sick clubs are legally compelled to do for their members, but those in a flourishing financial condition are free to extend the scope of the benefits conferred, which usually take the form of granting free medical treatment to the uninsured dependents of the members or increase of sick pay.

The Relations of German Sick Clubs and the Medical Profession.

In order to be in a position to confer these more tangible benefits, other forms of expenditure are as far as possible cut down to the lowest figure, and this is the point upon which the interests of the medical profession and those of the sick clubs diverge. It is, in fact, the predominant question at issue to-day for the German medical man to resist the autocratic desires of the clubs, and in this respect their organisation can point to some notable successes in resisting the many attempts made to render the practitioner subservient to the wishes of the sick clubs. The clubs' aim is to introduce what may be called the "tied doctor" system, whereas the profession, and to a certain extent the members, maintain that the insured should be free to choose their medical attendant from among the whole number of those who agree to the sick clubs' terms.

It cannot be denied that the fact that some millions, who formerly postponed calling in medical attendance until the last moment, are now able to do so without having to consider the question of fees, had a material influence on the position of the medical profession. Soon, however, it became evident that the slight remuneration agreed to, mainly on the ground that it meant an assured source of income to the practitioner, was in no adequate relation to the services rendered, and led to insistance upon a fairer recompense for work and skill. It must be remembered that in most of the German States there exists a legal minimum and maximum scale of fees for professional duties. The Prussian medical tariff enumerates no less than 163 different items covering medical attendance and surgical operations of various degrees. These charges are applicable in the absence of any special agreement; the minimum charges are to be made in the case of members of charitable or State institutions, otherwise the fee is to be reckoned within the limits stated, according to the time or skill required and financial position of the patients.

The following may serve as an example of the rate of remuneration thus established:—

Some Items in the Prussian Medical Tariff.

First visit to a patient	2*s.* to 20*s.*
Every further visit	1*s.* ,, 10*s.*
First consultation at medical man's house	1*s.* ,, 10*s.*
Every further consultation	1*s.* ,, 5*s.*
(These charges include full examination and writing out a prescription.)	
A consultation over the telephone	1*s.* ,, 3*s.*
Consultation of two or more medical men, to each	5*s.* ,, 30*s.*
(Visits or consultations between 9 P.M. and 7 A.M. twice to three times the above rates.)	
Subcutaneous injections, enemata, injections into the urethra	1*s.* ,, 3*s.*
(The first three times full charge, afterwards only half, but not under 1*s.*)	
Opening a superficial abscess	2*s.* ,, 1 *s*
First simple dressing of a small wound	1*s.* ,, 10*s.*
Resection of a rib	20*s.* ,, 150*s.*
Operations on the internal organs of the abdomen	50*s.* ,, 500*s.*
Sight-testing	3*s.* ,, 15*s.*
Removal of foreign bodies from the eye	2*s.* ,, 20*s.*
Assistance at a normal birth	10*s.* ,, 40*s.*
If over two hours, for every half-hour or part	1*s.* 6*d.* ,, 3*s.*
Birth requiring the use of instruments	15*s.* ,, 150*s.*
The last item is: Examination of a wet-nurse	3*s.* ,, 10*s.*

The most usual form of contract between a sick club and a medical man is that the club sets aside a sum ranging from 3*s.* to 6*s.* per member per annum for medical attendance, and this amount is paid in full to the medical man. Sick clubs which extend medical attendance to other members of the family of the insured allow twice to three times this amount. Where several medical men participate, the total amount is divided amongst them in a variety of ways. One is that the whole sum is handed over to the local medical association, which undertakes its division among the sick club medical men, or the services rendered are divided into various classes, each being allotted a certain number of points, and the single medical man receiving his share according to the total number of points he has to his credit. Other sick clubs pay in full the lowest charges of the tariff, or have a contract whereby a 10 to 20 per cent. rebate is deducted from these charges. Another system which is adopted by the sick club of one of Germany's leading chemical works is, that every half year each member of the club is called upon to choose his medical attendant for the ensuing six months from among about a dozen who have placed their services at its disposal. In this case the 3*s.* per unmarried and 12*s.* per married man are paid in full to the practitioner thus chosen. It may be mentioned that it is the aim of the German medical organisation to obtain remuneration for services rendered to sick club patients according to the lowest charges of the tariff, and this resolution forms part of its working programme.

In considering the above conditions it must not be forgotten that dispensing is forbidden to medical men and is a monopoly of the pharmacists. On the other hand, every prescription has to be charged for according to the provisions of the Imperial Medicine Tariff, which sets forth in detail the amount to be levied for each single constituent according to the exact amount prescribed; further, certain charges for the various manipulations in compounding a prescription, and, lastly, the price of the bottles, &c., is also fixed, the total arrived at being the amount charged to the patient. In certain German States the Government requires the pharmacist to grant a rebate (10 to 15 per cent.) on all prescriptions for sick club patients. No prescription may be repeated on a sick club's account unless it bears the medical man's signature and date on each repetition.

In view of the trend of political aspirations to-day, it is interesting to note that the nationalisation of the medical and pharmaceutical service figures on the programme of the German Social Democratic party, which contends that every citizen has a right to free medical attendance at the cost of the State; and this proposal has even been discussed in some of the State Parliaments.

Methods Adopted by the Sick Clubs to Cut Down Medical Expenditure.

It is a regrettable fact, however, that the introduction of so beneficial a measure as compulsory insurance against sickness, backed by the assistance extended to the dependents upon the sick man during his incapacity for work—a high moral

factor for every wage-earner, should have been followed by serious divergences of opinion between the authorities of the organisations and the members of the medical profession. In their endeavour to afford the insured the greatest possible benefits the sick clubs have, so far as the medical man is concerned, consistently closed their consciences to the precept of "live and let live." By every possible means they strive to reduce the expenditure relating to medical attendance. In fact, they go so far as to dictate what the practitioner may and may not prescribe for members. This is effected by means of a list enumerating certain more expensive drugs, wines, mineral waters, &c., which must either be replaced by less costly preparations, or permission to prescribe them must be obtained from the club committee. Again, a collection of formulæ has been elaborated calculated to meet general cases and costing as little as possible. In liniments, for instance, olive oil is replaced by rape-seed oil; instead of vaseline or lanoline, lard is to be used as an ointment base. This mania for saving goes so far as to exclude the use of divided powders. The medical man has to prescribe the full quantity, and the directions read: "Take as much as will go on the point of a knife." In the case of potent drugs the danger of so inaccurate a method of dosage is apparent. Simple solutions of salts are also banned: 10 grammes of potassium iodide are prescribed, and the patient has to dissolve this in a wine bottle full of water. The bottles, ointment-pots, &c., have to be returned to the pharmacy, otherwise they are charged to the member himself. The above instance but a few of the restrictions imposed to obviate "unnecessary" expense to the clubs.

"Forewarned is forearmed," and the British practitioner would do well to consider the experiences of his Continental colleagues so as to be in a position to safeguard his interests on the introduction of social measures nearly affecting his material position in his own country.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

The University of Bristol.

THE winter session opened on Oct. 3rd without any definite ceremony. The graduation ceremony is reserved for Oct. 20th, and the new wing is to be formally opened by Lord Winterstoke on Nov. 15th. This wing, it will be remembered, provides new quarters for the departments of chemistry and physiology. The removal of the latter from its somewhat cramped quarters in the medical building leaves space for other departments, and has made possible a very considerable extension of the students' room by destruction of the wall which separated the original room from the medicine lecture theatre and fusion of the two rooms in one. The old physiology lecture theatre will be available for medicine and surgery, and one of the old physiological laboratories is devoted to dental mechanics. It was hoped that the wing would be ready for use at the beginning of the session; but in spite of strenuous efforts on the part of the builders much remains to be done. Another important addition to the University has to be recorded. The two theological colleges, the Western College and the Baptist College, are to be regarded as an institution in association with the University, arrangements having been made for the recognition of the teaching staff as members of the teaching staff of the University. To this end an advisory committee has been formed with the Vice-Chancellor as convener. The Western College is housed in a very good new building close to the University, and the Baptist College is about to be rebuilt on a site separated only by a road from the new wing of the University. On Oct. 8th a students' reception was held in the large hall of the University, at the invitation of Sir Lambard and Lady Owen. Each faculty had a table decorated in a distinctive colour, and bows of corresponding colours were served out for students to wear. As each student also wore a piece of paper bearing his name a method of automatic and general introduction was secured.

Decrease of Vaccination in the West of England.

Vaccination in the West of England has been falling off very considerably, especially in the urban districts, and the experience of the Cirencester (Gloucestershire) board of guardians is fairly applicable to most of the unions in the West. The returns recently issued by this board show that whilst in the rural districts the number of exemptions had remained practically stationary, in the urban districts the number had now increased to such an extent that they were equivalent to one-half of the total number of births.

Poor-law Treatment of Consumptives.

At a recent meeting of the Bristol board of guardians the hospital committee reported in favour of the establishment of a sanatorium for the treatment of early and advanced cases of phthisis in men, women, and children, and spoke of a property within reach of Bristol, in the Somersetshire hills, which might be acquired for that purpose. Boards of guardians have adopted a similar course in Liverpool, Bradford, Newport, and elsewhere; and the present accommodation in Bristol is unsatisfactory. There is a great deal to be done at Southmead before it can be considered an efficient sanatorium; and the committee feels that as such changes are necessary and must be shortly undertaken it would be better policy to start an altogether new institution where the treatment would be more efficient and where consumptives would be segregated from those whom they might otherwise infect. The committee's calculations show that such a plan would be as economical in the long run as a patching scheme. The whole matter was postponed for fuller discussion and examination.

The Bristol City Infectious Hospitals.

The typhoid carrier who is being kept under observation at the Ham Green Fever Hospital has troubled the minds of certain members of the Bristol health committee, who object to the expenditure of public funds in maintaining a patient for what they consider to be the gratification of scientific curiosity. Fortunately, the medical officer of health, Dr. D. S. Davies, was able to assure them that the investigations were likely to yield results of practical value. At the same meeting it was proposed and decided to spend about £5000 in extending the accommodation for infectious disease by adding buildings to the Novers Hospital. This will bring the number of beds nearer to the Local Government Board standard, of which the present total falls short.

Control of the Tuberculous Poor.

The Plymouth board of guardians has been seeking the support of various boards of guardians in the West of England for approval of a resolution asking the Government to give authority to the guardians to detain in the workhouse infirmary all persons suffering from tubercular phthisis who are in receipt of outdoor relief. The proposal does not seem to have met with much support; the St. Thomas' (Exeter) board allowed the letter "to lie on the table," one of the members remarking that the suggestion would mean a great hardship on the poor.

The Exeter District Nursing Association.

The nurses' home in connexion with the newly-formed District Nursing Association was formally opened on Sept. 29th by the Mayor of Exeter in the presence of a large gathering, which included Mr. H. Duke, K.C., M.P., Colonel Cardew, and Dr. H. Davy. The association employs a head-nurse and two assistant nurses, who commenced their duties on Oct. 3rd. It is estimated that an annual income of about £300 will be required to carry out the working of the undertaking. The cost of furnishing, &c., will be probably £250, making a total of £550. Of this sum £420 have been obtained, leaving £130 still to be raised.

Veterinary Surgeons and Armorial Bearings.

At Barnstaple, on Oct. 6th, a local veterinary surgeon was summoned by the Devon county council for using armorial bearings without a licence. For the defence it was contended that the crest was that of the Royal College of Veterinary Surgeons and that the members of that college had a right to use the college arms on notepaper, billheads, &c., when used for only professional purposes. The bench of magistrates eventually dismissed the case and allowed the defendant costs and also the advocate's fee.

Proposed Medical Officer of Health for Cornwall.

At a meeting of the Contagious Diseases (Animals), Sanitary, Housing and Town Planning Act Committee of the Cornwall county council held at Truro on Oct. 6th, under the presidency of the Hon. John Boscawen, it was unanimously decided to recommend the county council to appoint

a medical officer of health for the county of Cornwall, at a salary of £400 per annum, rising to £500 by yearly increments of £25.

Bristol's Memorial to King Edward VII.

After long deliberation it has been determined by the Lord Mayor and his committee to erect an equestrian statue of King Edward VII. in front of the Victoria Rooms, Clifton, using the opportunity for the acquisition of ground at present surrounded by unsightly railings, and in the future to be used for some kind of open space. This is a much-needed improvement, but some disappointment is felt by those who had hoped that the King's memory would be perpetuated by means of a central hospital fund such as exists in London.

The late Mr. R. G. Worger of Radstock (Somerset).

Two stained-glass windows were dedicated in the chancel of the parish church of Radstock on Oct. 2nd, which have been erected as memorials to the late Mr. Richard George Worger, L.R.C.P. Lond., M.R.C.S. Eng., L.S.A. One window contained a representation of St. Luke, "the beloved physician," and was erected by subscriptions from the inhabitants of Radstock. The other was emblematic of a Red Cross Knight, and was given by the deceased's comrades in the 2nd South-Western Mounted Brigade Field Ambulance, R.A.M.C. (T.F.), in which Mr. Worger held the rank of surgeon-captain. Mr. Worger, of whom an obituary notice appeared in THE LANCET, died on July 10th last. He was extremely popular in Radstock, took a great interest in the social and religious life of the town, and was for several years churchwarden of the parish church.

Oct. 10th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Infantile Mortality.

WHATEVER may be thought of the use of bribery in the form of prizes for the mothers who have succeeded in rearing their children as far as the completion of their first year, there is no doubt of the philanthropic motives that have inspired Mr. Alderman Broadbent of Huddersfield in his crusade against the unnecessary loss of infant life which disgraces many parts of our country. Warrington has had a high infant death-rate, and the public conscience has been roused to do something towards its reduction. A public meeting, held under the auspices of the Warrington Guild of Help, was very successful, 2000 people being present. Alderman Broadbent was the principal speaker. Dr. Joseph, the deputy chairman of the health committee, gave the movement the sanction of the municipal council, saying that the council would welcome the assistance of the Guild of Help. A letter was read from the Bishop of Liverpool, saying that the "infantile mortality was a disgrace to our civilisation and our Christianity, and he was thankful that the question was being discussed by the citizens of Warrington in public." The town council has adopted a report of the health committee submitting a scheme by the medical officer, involving the appointment of two lady inspectors and the acceptance of voluntary assistance, probably of lady members of the "Citizens' Guild of Help." The scheme thus sketched out bears much resemblance to that which has been productive of so much good among the poorer part of the population of Manchester. Help in poverty will, as was said long ago, always be needed, but that the amazing ignorance among the poor, which is one of the chief causes of the high death-rate among infants, should exist in these days, after the long years in which compulsory education has had free play, is of itself eloquent proof of the non-practical character of the teaching which has gone by the name of education. There are some signs of improvement as to this, and perhaps we may hope that those who rule in these matters may allow common-sense a more prominent place in the scheme of education.

"Christian Science."

The striking case of what may almost be called death by "Christian Science" that took place at Urmston, and to which your medico-legal correspondent referred last week, shows how utterly irrational are these fanatics. The facts are probably fairly well known. A man, aged 53, became lame three years ago, and as he gradually became worse he saw Dr. J. Clegg at Urmston, and was advised to see Dr. A. H. Burgess, who advised him to have the leg amputated. In his evidence at the inquest the son said his father had a horror of operations, and was also a Christian Scientist. Dr. Clegg was dismissed, and a Mr. Pitfield, a Christian Scientist practitioner, was called in. Dr. Clegg said that if the leg had been amputated a good recovery might have been looked forward to. Mr. Pitfield, whose only occupation seems to be that of a Christian Science practitioner, said the patient asked him if he would help him with Christian Science, so he prayed with him, read the Scriptures and the Christian Science text-book, "Science and Health," but no treatment was given to the leg. In answer to the coroner as to the failure of his treatment he answered, "I cannot say it was a failure." The coroner did not agree with this, and the jury seemed to wish to return a verdict of manslaughter, but the coroner told them the only verdict they could give was "Death from septic poisoning," and as Mr. Statham had acted on his own responsibility they could not add a rider. The coroner made some strong remarks on the conduct of Mr. Pitfield. A letter has appeared in the *Manchester City News* which illustrates the strange character of what presumably stands for reasoning. He objects to an article in a local paper headed a "Christian Science Victim," and says it is not easy to see why it should not be a "Medical Science Victim." "To be sure, he was offered the chance of an operation, a mere chance of life, as the doctor very fairly admitted. ..... But surgery is not healing, and a grave operation with a chance of success cannot be the true scientific healing," and so on. One Sunday night at a Roman Catholic church in Manchester Father Day delivered a trenchant and scathing attack on the principles of the so-called Christian Science, saying that the text-books read like the ravings of a madman. It seems as if this delusion were spreading, and it might be well for the clergy of all denominations to warn their flocks against the absurd doctrines of Christian Science.

The Salford Guardians and Hope Hospital.

It may be remembered that some time ago the Salford guardians were unfortunate enough to come under the ban of the medical profession as regards an appointment at the Hope Hospital, which is under their control. They are now at cross purposes with the Local Government Board as to the appointment of a medical officer to the hospital. To their surprise, their choice of a local practitioner for the appointment of medical officer was not accepted by the Local Government Board, which intimated, in a letter read at the meeting of the guardians held on Oct. 7th, that it still "did not feel able to assent to the appointment proposed by the guardians." The feathers of the guardians were naturally ruffled somewhat, but a lady guardian moved that they should advertise the position again, and said that if the decision of the Local Government Board had been accepted at first it would have saved the guardians from an embarrassing position. This was seconded by another lady. The chairman of the Hope Hospital committee proposed an amendment which was somewhat militant, "declaring the proposed appointment the best that could be made in the interests of the poor in that institution," and he protested against "the usurpation of the rights of the guardians by any London authority." A valiant stroke for self-government. This was backed up by the chairman, who said "it was a battle between public representatives and the red tape of central officialdom." One reverend gentleman thought the central authority should be respected. However, the amendment was carried against the sweet reasonableness of the ladies, and the guardians remain at "loggerheads," as it is called in Salford, with the Local Government Board as to this very important appointment. At present the duties are carried out by a locum-tenent at a stipend of 6 guineas a week.

"Spotted Fever" in Cheshire.

It was reported from Macclesfield yesterday that a case of spotted fever had occurred there in a boy 11 years old. It is said that he had been in the Macclesfield Infirmary for some days under treatment for meningitis, when it was suspected that he was suffering from spotted fever. On

Friday last a sample of fluid was sent to the Lister Institute, and on Saturday the boy was removed to the isolation hospital, and yesterday the medical officer, Mr. J. H. Marsh, received a provisional diagnosis of spotted fever. It is not known how the boy came by the disease.

Oct. 11th

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

Opening of the Medical Session.

THE classes in the Faculty of Medicine of the University of Leeds were resumed on Oct. 4th, when Professor F. Howard Marsh, the Master of Downing College, Cambridge, and professor of surgery in that university, distributed the prizes and delivered an introductory address (see p. 1119). There was a good attendance of the staff, of the students, and of the general public, and the proceedings were presided over by the Vice-Chancellor. The main part of the address dealt with the vexed and largely discussed question of the curriculum and the amount of time that could be devoted, under the existing arrangements, to actual clinical work. The University of Leeds has recently made certain alterations in the curriculum which have secured, at the expense of some concentration of the time devoted to the earlier subjects but without it is hoped sacrificing their interests, an increase in the length of time devoted to the more purely professional subjects. And as in these the number of systematic lectures has been diminished the time of the students which can be devoted to clinical work will be increased. Professor Marsh's remarks on this score therefore may be regarded as confirming the wisdom of the alterations referred to. A very interesting part of the address was that in which he gave some details of the life and work of William Hey, the founder of the school, whom he deemed worthy to be mentioned along with Cooper, Hunter, and Lister. Following the custom of many years, the annual dinner of the medical profession of Leeds and district was held at the Queen's Hotel on the same day that the session was opened, when Professor Marsh was the chief guest, the chair being taken by Professor R. Lawford Knaggs.

Lyddon Hall: Students' Residential Chambers.

Owing to the death of Mr. G. Herbert Rowe a vacancy has arisen in the wardenship of this residential hall. Professor Jamieson, who has lately been appointed to the chair of Anatomy, has been approached in the matter and has consented to undertake the duties. Lyddon Hall is pleasantly situated within convenient distance of the medical school and the other University buildings, and was at one time the residence of Sir Clifford Allbutt. Professor and Mrs. Jamieson are very cordially wished every success in their undertaking.

Alarming Fire at the General Infirmary.

On the morning of Oct. 7th there was a serious outbreak of fire at the General Infirmary, which was happily confined to the upper wards of one block and was unattended by loss of life or disaster of any kind. The block affected was the most recently built of those occupied by patients, and was opened 18 years ago. It is composed of three storeys with front and back wards in each, connected with one another by a local administrative portion in which there are some small wards with access from a main staircase and occupying mezzanine floors. The three storeys are connected with the rest of the building, on the ground floor by a covered way, on the first floor by a gangway, with the main corridors of the infirmary, and on the top storey by a bridge with the terrace. It is noteworthy that this last connexion was made only a few years ago on the suggestion of the late Mr. W. H. Brown. On this occasion it is true that its non-existence would not have determined a catastrophe, but its presence greatly facilitated the removal of the children who occupied the top storey. The fire was first detected by a passer-by, and on the prompt arrival of the firemen its site was found to be in the false roof. The nurses who were on duty got the first alarm from the firemen, and at once set about removing all the patients. Promptly other nurses, porters, servants, and members of the resident staff were at work, and in a few minutes, without panic or hurry, all the patients were removed to various places of safety, and practically all the furniture of the wards was removed. Though, as the chairman of the board said in his official statement, the complete safety of the inmates was never for a moment in doubt, the rapid removal of some 90 patients was a creditable performance, and it left a clear field for the fire brigade to fight the matter out. The roof of the building was burnt and in great part fell in, but the fire was confined to the top storey, and was got under in about two hours. Kindly offers of assistance were at once forthcoming from several of the neighbouring institutions, but it was not found necessary to accept these. The date of discharge of a good many of the patients in the semi-convalescent hospitals was anticipated, and some of the patients found accommodation there. One of the large wards had just been completely overhauled and was to have been occupied in a week; this was at once got ready and provided space for 28 patients. Some others found accommodation in various parts of the building, and with the exception of the closing of the out-patient department on the afternoon of the fire there was no interruption to the work of the infirmary.

Oct. 10th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Royal Infirmary: The Nurses' Prize-giving.

AT the nurses' prize-giving in the Edinburgh Royal Infirmary on Oct. 7th the prizes were distributed by Lord Ampthill. Lord Provost Brown presided over the gathering, which was held in the nurses' recreation-room in the infirmary. Lord Ampthill, after the presentation of the prizes, addressed the nurses, speaking in terms of high appreciation regarding the work done by the nursing profession. He went on to urge the advantages of a system of registration for nurses, maintaining that for the sake of both the public and the large body of fully trained nurses the sanction and the protection of the law through the method of registration were necessary. Mrs. George Kerr, one of the managers of the infirmary, referred to the resignation of Miss Bell on her appointment as matron in Melbourne, and expressed regret that the infirmary was to lose her services. Mr. Walter B. Blaikie, in moving a vote of thanks to Lord Ampthill, referred to various recent improvements in the conditions under which the nurses worked. A new nurses' home had been added to the institution, the dining-room accommodation had been increased, and an improved pension scheme had been instituted.

Dundee Medical Appointments.

Dr. John Logie, a graduate of the University of Edinburgh, has been appointed resident medical assistant to the Dundee Royal Infirmary. Dr. Logie took honours in most of his classes. The Dundee school board on Oct. 4th appointed Dr. A. B. MacArthur Thomson, Barking, Essex, as assistant medical officer at a salary of £250. Dr. Thomson graduated at the University of Edinburgh eight years ago. He obtained the D.P.H. of London this year.

Hostel for Senior Medical Students at Glasgow.

A residency or hostel is to be opened near the University and Western Infirmary on Monday, Oct. 17th. The hostel is at 9, University-avenue, and is in telephonic communication with the Western Infirmary, so that the students can be communicated with and get the advantage of seeing urgent medical and surgical cases, and in this way add to their practical experience. The charge for residence in the hostel will be £1 1s. per week.

Aberdeen City Poorhouse Medical Officership.

The time for receiving applications for the medical officership at the Aberdeen city poorhouse has expired, but no application for the post has been received. The matter will now come before a meeting of the Aberdeen parish council on Oct. 11th. It will be remembered that when first the post was advertised the salary offered was only £75. The local medical men contended that this was not a fair salary and that at least £150 should be given. The council then offered £105, but, as stated above, no application has been received.

The University of Aberdeen: Changes in the Staff.

The following changes have occurred in the Aberdeen University medical staff: Experimental Physiology: John

Elrick Kesson, M.B., to be lecturer. Forensic Medicine: David Rennet, M.D., D.P.H., to be lecturer. Anatomy: Norman James Calder, M.A., M.B., to be assistant. Materia Medica: Walter James Dilling, M.B., to be assistant. Pathology (Special): James Watt, M.A., M.B., to be assistant. Surgery: G. H. Colt, F.R.C.S., to be assistant.

Aberdeen Branch of the Red Cross Society.

A meeting was held of the Aberdeen Branch of the Red Cross Society on Oct. 4th, following the large one of the previous week. Lady Aberdeen again presided, and a leaflet prepared by her, explaining the methods to be followed in the organisation of the County of Aberdeen Branch and in the formation of classes throughout the county, was carefully gone into. Lady Aberdeen undertook to have copies of the leaflet circulated through the county, and it is hoped that it will be the means of creating interest in the movement. A form of standing orders was also gone over and approved, and the appointments made at the last meeting were confirmed. The movement will be now advanced by the vice-presidents, under the direction of the divisional presidents, having classes and voluntary aid detachments formed in their district. The fee for membership is £1 1*s.*, and for associateship 5*s.*

Gift of Portraits of Emeritus Regius Professor A. Ogston, University of Aberdeen.

At a meeting of the Aberdeen University Court on Oct. 4th, Professor George Adam Smith presiding, a letter from Dr. J. Mackenzie Booth was read, asking on behalf of the committee the court's acceptance of the portrait of Emeritus Professor Ogston to the University of Aberdeen. The portrait to be presented to Professor Ogston himself will be presented at the same time and place—namely, the afternoon of Oct. 14th in the Portrait Gallery of Marischal College, the court having signified its pride and great pleasure in accepting the portrait to be presented to the University. On the occasion Professor Matthew Hay will accept the portrait for the University, owing to the unavoidable absence of the principal. These portraits have been subscribed for by medical graduates throughout the world, and painted by Mr. Fiddes Watt, A.R.S.A.

Oct. 11th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Health of Dublin.

Sir Charles Cameron, medical officer of health of Dublin, has issued his annual report on the health of the city and on the sanitary work performed in 1909. The delay in its appearance is due to a cause that everyone regrets—the recent severe illness of its author. He urges on the corporation the necessity of new enactments which would tend to bring the standard of public health as nearly as possible up to that of English cities. It may reasonably be asked why the corporation does not make full use of the powers it has before asking for more? The dirty condition, even of the principal streets of Dublin, is proverbial.

Health of Waterford.

The public health of the city of Waterford has been for some time so unsatisfactory that the Local Government Board has at length ordered an inquiry into the sanitary conditions of the city to be held by two of the inspectors of the Board. In the letter to the corporation announcing this intention the Local Government Board points out that the death-rate from all causes in the past three years has amounted respectively to 21·7, 21·3, and 19·1 per 1000, while the death-rate from the principal epidemic diseases has for the same period reached the high figures of 2·2, 3·1, and 2·4 per 1000—a record unapproached by any of the important town districts in Ireland. The corporation is very indignant at the inquiry being held.

Presentation to Sir George O'Farrell.

Last week the members of the Irish Lunacy Service presented an address to Sir George Plunkett O'Farrell, who has recently retired from the position of Inspector of Lunatics. The address is to be followed by a portrait. The esteem in which Sir George O'Farrell is held was shown by the fact that nearly all the medical superintendents of Irish asylums attended in Dublin to take part in the presentation.

Sudden Death of Mr. P. J. Fagan.

It was with much surprise and sorrow that his professional friends heard of the death of Mr. P. J. Fagan, surgeon to St. Vincent's Hospital. Mr. Fagan complained of pain in his chest on Sunday night last, but on Monday he went about his usual work. On Monday evening, however, he was seized with angina pectoris and died in a few moments. Besides being surgeon to St. Vincent's Hospital, Mr. Fagan was for many years an active member of the staff of the Catholic University School of Medicine in the departments of physics and anatomy, and since the establishment of University College he has been chief demonstrator of anatomy. He was only 46 years of age, and he leaves a widow and three young children.

Charles Magill, M.D. R.U.I.

It is with sincere regret I announce the death of one of the best-known Ulster practitioners at his residence, Lisburn, which occurred on Oct. 5th, suddenly, from Bright's disease, which assumed a very serious condition on Oct. 4th, when uræmic convulsions set in, followed by heart failure. Dr. Magill belonged to Dundrod, county Antrim, being the son of a well-known clergyman, the Rev. W. Magill, whose congregation was in that district. After a successful career at Queen's College, Belfast, he graduated M.D. and M.Ch. of the Royal University in 1879, and became L.M. R.C.P. Irel. in the same year. For a short time he was house surgeon in the Belfast union hospital; he afterwards practised for a time in Crumlin, but in 1882 he removed to Lisburn, where he rapidly built up a good practice. He was medical officer of the local district of the Great Northern Railway and the Ulster Provincial (Friends') School. A man of an extremely genial disposition, he was much esteemed by his patients as well as by the general public. He leaves a wife and two children—a boy and girl—for whom sincere sympathy is felt. Dr. Magill, who was 52 years of age, was buried in Lisburn.

What Ailed the Pig?

At the Portadown petty sessions on Oct. 10th a farmer was summoned for exposing for sale in the Portadown pork market the carcass of a diseased pig which was alleged to be unwholesome and unfit for food. Mr. J. L. Rowlett, medical officer of health, and Mr. R. W. Thompson, veterinary surgeon, said that the pig was suffering from tuberculosis, and that in their opinion the carcass was not fit for human food. Dr. R. J. Rowlette, lecturer in pathology at Queen's College, Galway, and pathologist to the Steevens and Rotunda hospitals, said that he found tubercle bacilli in the glands of the animal and that the portions of the carcass submitted to him were infected with tuberculous disease. For the defence, Mr. J. McAleer, veterinary surgeon, stated that he examined the pig and formed the opinion that it was fit for the food of man, and he would not have condemned it. Dr. F. McDonald said that the pig was not suffering from tuberculous disease. It was a sound, healthy pig, fit for the food of man, and it was not suffering from any disease. Professor E. J. McWeeney said that he could not find any traces of tuberculous disease in the portions of the carcass submitted to him. He found no tubercle bacilli in the tissues. He was distinctly against all kinds of alarmist rumours that would result in good carcasses of meat being condemned because a small portion of the carcass might bear evidence of disease. He was then asked to explain the following passage from the report of the Royal Commission on Tuberculosis: "In view of the greater tendency of generalisation of tuberculosis in the pig, we consider that the presence of tubercular deposits in any degree should involve seizure of the whole carcass and organs," and in reply Professor McWeeney said that was not exactly infallible, and men who had interested themselves in this question were entitled to their own opinions. He quite accepted Dr. Rowlette's statement that he found tubercle bacilli in the specimen sent him, but he (Professor McWeeney) failed to find them in what he examined. The case was dismissed, but the town council of Portadown, it is said, will appeal.

Oct. 11th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Organic Compounds of Antimony and Arsenic in the Treatment of Trypanosomiasis.

AT a meeting of the Academy of Sciences held on Sept. 26th M. Laveran made a communication on the treatment of trypanosomiasis with organic compounds of antimony and arsenic. He said that M. Yvon, after preparing a mixture of the emetic compound of antimony and aniline with the emetic compound of arsenic and aniline, had by crystallisation obtained from it fine hexahedral crystals of a pale violet colour containing both antimony and arsenic. M. Laveran had made trials of this substance on guinea-pigs infected with Trypanosoma evansi, Trypanosoma gambiense, Trypanosoma dimorphon, and Trypanosoma congolense. It was employed in a watery solution of 2 per cent. strength, which was injected into the muscles of the thigh in the following quantities: For guinea-pigs of 500 grammes, a dose of 0·01 gramme; for guinea-pigs of 600 grammes, a dose of 0·0125 gramme; and for guinea-pigs of 700 grammes, a dose of 0·015 gramme. The treatment was not commenced until the trypanosomata were fairly abundant in the blood of the animals; five injections were given at intervals of four or five days; as a rule they did not produce any ill-effects, but in some instances there was severe inflammation without suppuration. Recovery was considered to have taken place when the blood of the animals remained free from trypanosomata for three months, and this condition was fulfilled by 15 of the guinea-pigs which had been infected with the four species of trypanosoma already mentioned. In 11 of these animals recovery took place after a single course of treatment consisting of five injections; in 4 cases there was a relapse, followed by recovery after a second course of treatment. It was not yet possible to say whether the new preparation would be serviceable in sleeping sickness. There was some reason to fear that injections of it into the muscles of the human subject would prove too irritating, and that intravenous injections might be necessary, which would be a serious objection. It has, however, been found that an injection of it into the muscles of a monkey's thigh did not cause any inflammatory reaction and did not seem to be painful.

Conference on Cancer.

As already mentioned in this column, the International Conference on Cancer met in Paris on Oct. 1st. The inaugural addresses and other preliminary business occupied the forenoon of that day, and in the afternoon there was a discussion on the histology and histological diagnosis of cancer. Professor Czerny of Heidelberg was in the chair. Professor von Hansemann, speaking in German, proposed the appointment of a commission composed of all the foreign delegates for the purpose of drawing up an international nomenclature for use in connexion with cancer, this nomenclature to be submitted to the conference which would be held in three years' time. Professor Delbet drew attention to the inconveniences resulting from the fact that in different countries identical lesions received dissimilar names and the same words were often used in different senses. M. Pierre Nadal said that in the present state of our knowledge it was impossible to make a complete classification of cancers. M. Poziawecki expressed the opinion that the word cancer should be discarded and that its place should be taken by the adjective cancerous, which would be applied to the malignant forms of various tumours. Professor P. Marie spoke in favour of the proposal made by Professor von Hansemann, as well as on the utility of preserving documents for future use; he said that Professor Delbet had, in conjunction with M. Ménétrier and M. Herrenschmidt, compiled a nomenclature which, although it might not be complete, was a useful contribution to pathological terminology. The second subject on the official programme was the histogenesis of cancer. It was introduced by M. Brault and M. Faroy, who said that cancer when considered with reference to its histogenesis appeared to be a deviation from the laws of normal development, and from the principles which governed the maintenance, the renewal, and the repair of the tissues, but it was impossible to say exactly what was the active agent in this metamorphosis. M. Ledoux-Lebard introduced the subject of statistics. He recommended the adoption of uniform and comparable methods, the use of inquiry sheets presenting similar features but with some variations, and the formation of an international commission on the statistics of cancer. Dr. Carl Otto of Copenhagen, in discussing the duration of cancerous diseases of the digestive organs, gave some particulars of 196 cases which had been followed from the commencement of the disease until death, all of them having been examined post mortem. He said that the commencement of the disease and the appearance of the first symptom were in general not simultaneous but the latent stage was disregarded. On Oct. 3rd the meeting took place in the amphitheatre of Professor Delbet in the Hôpital Necker. Professor Kortewez and Professor Delbet spoke on the subject of the surgical treatment of cancer and M. Rovsing on the general treatment of cancer. Professor Marie and M. Clunet discussed the action of the X rays on malignant tumours. Professor Segond presented a report on fulguration in the treatment of cancer, his conclusions being generally unfavourable. M. Vidal of Algiers described various forms of serum treatment which have been proposed for malignant tumours. M. Récamier of Paris dealt with the subject of assistance for cancerous patients. In the subsequent meetings Dr. Weinberg delivered an address on the hæmodiagnosis of cancer, and Professor Winter, speaking on the subjects of post-graduate medical instruction and the education of the public, said that increased knowledge would in the course of time enable operations for cancer to be performed in an early stage of the disease.

Cholera in Marseilles.

A party of emigrants coming from the Piræus in the *Bosphore* recently arrived in Marseilles, where they stayed at a hotel, and two days afterwards several of them fell ill. Three who presented all the symptoms of cholera were isolated, and two of these patients have died. The remainder of the party was then removed to the lazaret at Frioul.

Oct. 11th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Death of Professor Chrobak.

Professor Chrobak, the well-known professor of obstetrics and gynæcology in the University of Vienna, died a few days ago after a prolonged illness. This famous surgeon was really a self-made man who by his great abilities and knowledge obtained the position of the most esteemed and influential director of the clinic in the general hospital. He was born in 1840, and on graduating as M.D. took up the study of diseases of women, in which subject there was at that time hardly any teaching. He soon became *privat-docent* in his specialty, and was appointed professor in 1880. His principal published works are the "Text-book on Diseases of Women"; the gynæcological part of Stricker's "Text-book of Histology"; and the section on "Gynæcology" in Nothnagel's treatise. He did much towards the introduction of gynæcological wards in the smaller hospitals, and the present system of instruction of students in diseases of women is chiefly due to his endeavours, as is also the teaching of midwives. His final exertions were devoted to the construction of the new gynæcological clinics which he knew he would not take over as illness had incapacitated him for active work; the modern up-to-date design of these buildings is chiefly due to his ideas. In 1908 he resigned his post in favour, as he said, of his favourite pupil, Professor von Rosthorn, who died so suddenly only a few months ago. Another of his early pupils is Professor Wertheim, who succeeded Professor von Rosthorn and is well known as the originator of a radical method of operation for cancer of the uterus. Professor Chrobak's kind and thoughtful way of dealing with patients was known everywhere, and his motto, *Primum non nocere*, was not only impressed upon all his pupils, but was visible in every operating theatre and ward of his clinic.

International Congress on Physiology.

The Eighth International Congress of Physiology took place in Vienna from Sept. 27th to Oct. 1st. The president

of the Congress was Professor Exner, and the Government, as well as the municipality of this city, gave a hearty reception to the Congress. After the usual preliminary addresses of welcome delivered by the President and the representatives of the State, the city, and scientific corporations, Professor Richet, speaking in French, delivered the introductory discourse, taking for his subject "Humoral Teaching in Physiology." He explained how the old theory of the "humours" of the animal body had regained its importance by the researches of modern physiology, which showed how the presence of "humours" of special substances in the liquid form were responsible for many conditions of life or death. The meetings took place partly in the University and partly in the physiological laboratory of the Institute for Anatomy and Physiology. Numerous papers were read, some of the more important among them being as follows. Professor Tshikawa of Japan read a paper on the Changes in the Protoplasm of Amœba under the Influence of Narcotics and Asphyxia. He showed that the protoplasm differentiated itself into two parts, a change which, however, did not occur if the toxic substance was removed. A paper which excited much interest on account of the recent development of flying machines was read by von Wendt of Helsingfors on Metabolism at High Altitudes. He found that nitrogen was retained in the tissues and that medium altitudes increased the formation of hæmoglobin and red corpuscles, whilst the higher altitudes increased the muscular development in a greater degree. Professor Hensen of Kiel read a paper on the Methods of Examination of Plankton, the "blood of the ocean," for which purpose he has constructed various ingenious forms of apparatus. The old problem of diabetes was taken up by Dr. Boruttau of Berlin, who has found that the heart of mammals contained glycogen, and that a change of diet caused also a change of the percentage of glycogen. He said that diabetic patients had lost in variable degrees the ability to utilise all ingested carbohydrates and albumin. Dr. Reach's experiments showed that after removing nearly all the pancreas ingestion of raw meat caused sugar to appear in the urine in dogs. Professor Kreidl of Vienna and Professor Kinoshita of Japan have studied the phenomena of the electric discharges which occurred in the Torpedo marmorata when it was placed in water free from salt. Under this condition rapid discharges occurred, until the electric organ was exhausted, which required about 30 minutes. The animals regained their electric potency quickly when returned to the sea, and could be "discharged" several times without harm. Cocaine and chloral-hydrate, even in very small doses, immediately stopped the electric discharge in water free from salt, whilst the administration of strychnine caused electric discharges even in sea-water. Professor W. M. Bayliss of London gave details of his experiments on the osmotic pressure of colloids. Professor Stirling also selected a theme of general physiological interest, whilst the problems connected with thermopenetration were discussed by Dr. Ullmann and Dr. Berndt. Quite a special part of the proceedings was devoted to the electro-cardiogram, and the correctness was shown of the opinion of Zbyszewski that the electro-cardiogram was an indicator of the currents in the cardiac muscles, the preponderence of the left ventricle in this respect being clearly manifested. Dr. Prizbram demonstrated the method adopted by him to ensure a constant or variable climate for his biological experiments at temperatures advancing by successive differences of 5° C. up to 40°; at the same time the animal could be placed under varying conditions of humidity, colour, and light. Dr. Kammerer showed animals which had inherited differences of colour and other bodily qualities from the parents under modified conditions of life. The exact measurement of the resistance of air in the nasal passages was demonstrated by Professor Gärtner. One of the most notable papers was a commemoration by Dr. von Ebner of the centenary of Schwann. The fundamental discovery by that eminent physiologist of the cellular structure of the living animal organism has been the basis on which modern scientific research in medicine has been made possible. With regard to the sight-seeing part of the programme, mention must be made of two events—namely, a visit to the Vienna Biological Experimental Institute, where much work of a most interesting nature is being done in a quiet way, and the unveiling of a statue of Gregor Mendel, the famous priest, who discovered the laws named after him, the Mendelian laws of heredity. He was a native of Brünn, in Austria, where a monument to him has been erected by a number of his followers, and an official deputation from the Congress was present at the unveiling ceremony.

Oct. 10th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

THE plague returns for the week ending Sept. 3rd show 1770 deaths for all India as compared with 1325 in the week preceding. The provincial figures are: Bombay Presidency, 857 deaths; the Central Provinces, 248; the United Provinces, 104; Bengal, 85; and Madras, 73. Hyderabad State returns 141 deaths; Mysore State, 90; and Rajputana and Ajmer Merwara, 133.

Beri-beri in India.

A report by Major A. Hooton, I.M.S., on the first biennial meeting of the Far Eastern Association of Tropical Medicine at Manila has recently been published. The portion of it of most interest to India relates to beri-beri. The discussion on this disease centred on an admirable paper by Dr. H. Fraser and Dr. A. T. Stanton of the Institute for Medical Research of the Federated Malay States, and a communication from Dr. H. C. Highet, the chief medical officer of Siam, which in essentials tended to support the conclusion arrived at in that paper. Following up the suggestion of Dr. J. Braddon that beri-beri is connected with the consumption of over-milled or white, as contrasted with under-milled, rice, a series of experiments was carried out at the institute on fowls, the result of which, stated briefly, was that a large proportion of those fed on over-milled rice alone developed polyneuritis, while all those fed on partially husked *padi*, or under-milled rice, containing a certain amount of the polishing removed in the cleaning process, remained healthy. Practical measures were taken in various outbreaks of beri-beri by both Dr. Fraser and Dr. Highet on the lines suggested by these experiments, and previously by Dr. Braddon, with the best results, and they quoted a large number of cases in which the disease had disappeared almost immediately on the substitution of a less completely polished for a white rice diet. The conclusions arrived at by Dr. Fraser were that beri-beri is a disorder of nutrition and usually associated with a diet in which white rice is the principal constituent, and that the disease, as it appears in the Federated Malay States, can be prevented by substituting for white rice a rice which has been less perfectly polished, or by the addition to a white rice diet of the polishing which has been removed from it, or other articles rich in those substances which have been shown by analysis to be lacking in white rice. The evidence brought forward appears convincing. It was accepted also by the great majority of the members present, and, in fact, the conclusion seems to be justified that whatever the ultimate cause of the disease may prove to be, its prevention, under by far the most common conditions, has now passed beyond the stage of theory.

Native Regimental Hospitals.

A committee, comprising Surgeon-General C. P. Lukis, Director-General of the Indian Medical Service, as president, Lieutenant-Colonel W. A. Morris, R.A.M.C., Lieutenant-Colonel C. M. Moore, I.M.S., and Major Jay Gould, I.M.S., as members, with Major Bruce Seton, I.M.S., as secretary, is at present sitting in Simla to consider the possible conversion of the present regimental hospital system of the Indian Medical Service into a station hospital system, somewhat on the lines of that existing in the case of the British army.

Infant Mortality amongst Natives in the United Provinces.

As a result of the question raised at the Naini Tal Sanitary Conference with regard to the possibility of diminishing infant mortality, special inquiries have lately been set on foot in the United Provinces with a view to establishing the undoubted results to definite causes. About a year ago a systematic investigation was begun at Cawnpore at Government expense into the reasons of extensive mortality among infants under one year of age, and for a period of six months, running into the beginning of the present year, a

lady doctor and two trained *dhais* were appointed to assist in the work. The inquiry has up to the present shown that infant mortality in the United Provinces, as elsewhere in India, is largely due to tetanus or other septic disease already appreciable at childbirth. Tetanus is the most prolific source of infant mortality amongst natives in India, and its prevalence is in very large measure traced to the prejudices of untrained attendants engaged in obstetric work, whose crude and unhygienic methods of treatment afford every opportunity to the tetanus germ. It is found that through this agency infection by the specific bacillus of tetanus is brought about with appalling frequency. In nearly every case this infection proves fatal, and it has now been established to satisfaction that the so-called convulsions which carry off so many infants within a few days of birth are purely manifestations of the disease in question.

Sept. 10th.

Obituary.

CECIL HUNTINGTON LEAF, M.B., B.C. CANTAB., F.R.C.S. ENG.,

SURGEON, CANCER HOSPITAL, BROMPTON; SURGEON, GORDON HOSPITAL FOR DISEASES OF THE RECTUM.

WE regret to announce the death of Mr. Cecil Leaf, which occurred at Eastbourne on Oct. 5th at the early age of 46 and which removes from among us one of the ablest among our younger surgeons and one who perhaps hardly received the recognition due to his attainments.

Cecil Leaf was the son of the late Mr. Frederick Leaf, a member of the well-known commercial firm of Messrs. Leaf and Co., and was born in 1864. He received his early education at Marlborough and Trinity College, Cambridge, at both of which places he excelled at cricket and racquets. On leaving college he became a student at the London Hospital, and in 1890 obtained the double qualification of the English Conjoint Board, graduating also in medicine at his University. At the London Hospital he held all the house appointments, being house surgeon, house physician, ophthalmic assistant, as well as demonstrator of anatomy in the medical school. In 1895 he proceeded to the Fellowship of the Royal College of Surgeons of England, and it was confidently expected by many of his friends that his industry and talent would secure him a place upon the surgical staff of the London Hospital, to which he was deeply attached. He was not, however, so fortunate as to obtain the appointment, and his failure, which he accepted in very good spirit, led to his taking up the work of a special rather than a general surgeon. He became surgeon to the Gordon Hospital for Fistula, where he had already done some clinical work, and to the Cancer Hospital, where his sound anatomical work at the London Hospital stood him in good stead in the line of research that he adopted. This line he soon made clear to his colleagues, for in 1898 he published a work on the "Surgical Anatomy of the Lymphatic Glands," which aimed at giving by a series of well-executed diagrams the position of the chief groups of these structures. With few exceptions, all the diagrams were original, and the book filled a real gap in systematic instruction. The average student when dissecting ignores utterly all lymphatic glands and lymphatics, and examining bodies have largely refrained in anatomy tests from asking questions on the positions of lymphatic glands and vessels, possibly out of sympathy with the certain ignorance of the candidates. But when the student commences his clinical work he finds the lymphatic system of great importance, and, as we said in our review, Leaf's small book supplies just the information that he wants.

Much of his later literary performance was a development of his earliest work. He translated and edited "The Lymphatics," a section of the monumental French *Anatomie Humaine* written in the original by Dr. Gabriel Delamare, Professor P. Poirier, and Professor B. Cunéo, discharging the task with great accuracy. In the same year, that is, in 1904, he published a small book entitled "The Clinical Causes of Cancer of the Breast and its Prevention, with Analyses of 100 Cases," in which he took a wide view of malignant conditions generally, being unwilling to attribute cancer in all parts of the body necessarily to the same cause. He suggested as of principal etiological importance in cancer of the breast errors of lactation, injury, anxiety, and a tuberculous history, coming to the general conclusion that cancer of the breast is almost invariably due to a combination of causes. He made numerous contributions to the literature of malignant disease and disease of the rectum to our columns and those of our contemporaries, among which may be mentioned an article in THE LANCET on the relation of blood-vessels to lymphatic vessels in which the interesting observations added to our knowledge of the connexion between the lymphatic and blood vascular systems. Cases of such connexion have been recorded by Stenson, Meckel, and others, the veins into which the lymphatics directly opened being the venæ cavæ, the portal, renal, axillary, internal iliac, and the azygos veins. Leaf gave further examples of this connexion and showed that a direct communication existed between the small arteries in the thorax and the lymphatic vessels in that region, although the connexion is not so free as between the lymphatics and the veins.

Always methodical and hard-working, he made full use, as will be seen by this brief record, of his opportunities, and we hope that a book on cancer of the breast, which was nearly completed when his last illness laid him aside, will be published by the kind offices of his many friends. Retiring and modest, "John" Leaf, as he was affectionately called by his contemporaries, was transparently honest, upright, and the pattern of a really good man, and his death will come as a shock to his numerous friends, for he was at work as recently as August last. It was due to lymphadenoma for which he had been operated upon in June, 1909. After this he thought himself well until this summer, when a recurrence occurred and the disease progressed extremely rapidly. He leaves a widow and one daughter. The funeral took place last Saturday at Barnes.

WALTER DUNCAN THOMAS, M.B. LOND., M.R.C.S. ENG., L.S.A.

WE regret to learn the sudden death of Dr. Walter Duncan Thomas of Bundaberg, Queensland, and formerly of Llanelly, South Wales. Apparently in his usual health on August 23rd at 11 P.M., he was found by his wife sitting in his chair, dead, at 7 A.M. on the 24th. He was in his fifty-fourth year.

Dr. Thomas was well known as a young man at Llanelly, his native place, where his father, and subsequently his eldest brother, carried on for 50 years the leading practice. Educated at Epsom College, where he became a prefect and was awarded by his schoolfellows the Hodgkin and Wakley prize, he matriculated at the London University, and subsequently became a medical student at St. Bartholomew's Hospital, London. There he took the M.R.C.S. Eng. in 1879 and in 1881 the degree of M.B. at the London University. When a boy at school he had a very severe attack of acute rheumatism which affected his heart. The knowledge of this influenced him in deciding to settle in a warm climate. After making several voyages as surgeon to the Peninsular and Oriental Steam Navigation Company Dr. Thomas started practice in partnership with Dr. May, an old Bartholomew's man, at Bundaberg in 1884. He was very successful in practice and was greatly beloved by all who knew him. In 1885 he married a daughter of the late Mr. Robert Little of Brisbane, one of the leading solicitors of Queensland. Two of his three sons survive him.

The Bundaberg *Daily News*, writing of Dr. Thomas, says: "Possessed of a nature essentially retiring, yet so generously stamped with those virtues which make for true nobility, the kindliest of feeling entwined itself around his fine personality. The last of men to seek for popularity, his nature was none the less so essentially honourable, so emphatically generous, so uniformly courteous and considerate for all around and about him, that a sense of high personal esteem and deep regard represented the only human channel of thought that could adequately convey the sentiment of his friends and acquaintances towards him. The soul of honour himself, he knew no other standard of measurement for those with whom in friendly, social, or professional life he came in contact. Small wonder, therefore, that the news of the death of a citizen so widely and so genuinely esteemed should come as a shock to the community, and the news was rendered additionally distressing because of the suddenness with which it was flashed upon the people."

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Rudolf Chrobak, who was until about

three years ago professor of midwifery and gynæcology and director of the "Second" Obstetric Clinic in the University of Vienna.—Dr. R. Amory, formerly lecturer in physiology in Harvard University.—Dr. Robert A. Jamieson, formerly professor of materia medica in the Detroit College of Medicine.—Dr. André Obrzut, professor of pathological anatomy in the University of Lemberg.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF ENGLAND.—At the Second Professional Examination in Anatomy and Physiology, held on Sept. 29th and 30th, and Oct. 3rd and 4th, 85 candidates presented themselves, of whom 56 per cent. were approved (including one lady—Miss Maysie Alice Marianne Collie, Otago University) and 44 per cent. were rejected. The following are the names of the successful candidates:—

Stephen Grange Askey, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Charles Sydney Atkin, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Claude Hamilton Blair Avarne, London Hospital; Stanley Samuel Beare, Middlesex Hospital; Frank Percy Bennett, St. Mary's Hospital; Edward Albert Brock, St. Bartholomew's Hospital; Percy Patrick Butler, University College; Andrew John Chillingworth, Middlesex and St. Bartholomew's Hospitals; William King Churchouse, Charing Cross Hospital; Frank Collar, Guy's Hospital; Maysie Alice Marianne Collie, Otago University; Sidney Barron Depree, St. Mary's Hospital; Hubert Roy Dive, St. Bartholomew's Hospital; George Cranston Fairchild, B.A. Cantab., Cambridge University; John Reginald Keith Fenning, London Hospital; Arthur Griffith-Williams, Cambridge University and London Hospital; Haji Sulaiman Gulamhussein Haji, L.M.S. Bombay, Grant Medical College, Bombay; Robert John Harley-Mason, Middlesex Hospital; Arthur Ernest Williams Idris, University College; Thomas Herbert Williams Idris, Middlesex Hospital and University College; George Gerald Jack, Middlesex Hospital; David William Jones, Kenneth John Taylor Keer, Reginald Hutchinson Lucas, and William Kellock McKay, Guy's Hospital; Oscar Gladstone Maginness, St. Bartholomew's Hospital; Edward Hillis Marshall, King's College; Reginald Victor Martin, St. Mary's Hospital; Arthur Wellington Matthew, London Hospital; Kavasji Cursetji Mulla-Firoze, L.M.S. Bombay, Grant Medical College, Bombay; Henry Barton Owens, London Hospital; John Hayward Paget, Charing Cross Hospital; William Percivall Penhale, Middlesex Hospital; Claude Hollingworth Philips, London Hospital; William Piper, Westminster Hospital and King's College; Francis Charles Robbs, St. Mary's Hospital; George Marsden Roberts, St. Bartholomew's Hospital; Granville Douglas Robertson, St. Mary's Hospital; Anthony Wellesley Monckton Sawyer, University College; Bernard Edward Patrick Sayers, Middlesex Hospital; Kenneth Vickerman Smith, Charing Cross Hospital; Thomas Victor Somerville, London Hospital; William Collis Spackman, Birmingham University; Mackenzie Thwaites Wills Steedman, B.A. Cantab., Cambridge University; Harman Taylor, Manchester University; Horatio Thomas, B.Sc. Lond., University College, Cardiff; Charles Alexander Weller, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; and Cecil William Wilson, London Hospital.

At the First Professional Examination, held on Sept. 27th, 28th, 29th, and 30th, the following candidates were approved in the undermentioned subjects:—

Chemistry and Physics.—Errington Atkinson, Percival Cheal, and George Stanley Deane, London Hospital; Gloster Tyndall Garraway and George Harris Haines, University College; Brabazon James Hallowes, St. Bartholomew's Hospital; Jagan Nath Puri, London Hospital; Gordon Stuart Terry, Bristol University; and Karl Johan Fredrik Westman, Brighton Technical College.

Chemistry.—Kanshi Ram Batra, University College; Joseph Herbert Bayley, London Hospital; Oliver St. Leger Campion, Dulwich College; Cyril James Gozney Exley, Leeds University; Moustafa Fahmy, London Hospital; Lancelot Horsley, Birkbeck College; Ernest Gwyn Howell, University College, Cardiff; James Stuart Leslie and Alexander Joseph Vincent McDonnell, London Hospital; Arthur Rennie Muir, University College, Cardiff; Mian Mohammad Shaffi, London Hospital; Ramon Romero Sy-Quia, London Hospital and City of London College.

Physics.—John Behesnilian, Charing Cross Hospital; Robert Edmund Barry Denny, London Hospital; Frederick Ernest Feilden, Middlesex Hospital; Luis Hernando Garces, London Hospital; Henry Judson Grimshaw, Liverpool University; and Herbert Henry Silley, King's College.

Biology.—John Andrew, South-Western Polytechnic; Wilfred Angel Easton, Guy's Hospital; Samuel Mallinick, Halle University and London Hospital; (Miss) Lily Fanny Pain, Royal Free Hospital; David John Platts, King's College; Jagan Nath Puri, London Hospital; Bryan Montague Tuke, Middlesex Hospital; and Karl Johan Fredrik Westman, Brighton Technical College.

At the quarterly examination in Practical Pharmacy held on Oct. 6th the following gentlemen were approved:—

Arthur Brodie Hamilton Bridges, St. Thomas's Hospital; Stacey Archer Burn, St. Bartholomew's Hospital; Roderick Ernest Clarke, King's College Hospital; Edward Robert Cecil Cooke, B.A. Cantab., Cambridge and Sheffield Universities; William Lewis Cowardin, St. Mary's Hospital; Edward Percy Drabble, London Hospital; Harry Dudley, University College; Philip Cuthbert Collingwood Fenwick, St. Thomas's Hospital; Alfred George Timbrell Fisher, Bristol University and St. Bartholomew's Hospital; Andrew Alexander Fyffe, Sheffield University; Alfred Linton Gardner, Guy's Hospital; Ernest Richard Gordon Greville, St. Thomas's Hospital; Frank Mainwaring Hughes, London Hospital and private study; Samuel Hutchinson, University College Hospital; Anthony Kennedy, B.A. Cambridge, Cambridge University, and Middlesex Hospital; Claude Jocelyn Delabere May, Bristol University; Douglas Duncan Malpas, Middlesex Hospital; Herbert Henry Powys Morton, King's College Hospital; Henry Maurice Peacock, L.D.S. Eng., private study; Edmund Uniacke Russell, King's College Hospital; Henry Wakeman Scott, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Gerald Nicholson Stathers, Cambridge University and St. Bartholomew's Hospital; William Vere Taylor Styles, Middlesex Hospital; Cedric Norman Vaisey, Bristol University; Percival Dillon Warburton, Sheffield University; James Anderson Watson, Otago University and Middlesex Hospital; Kim Gien Wee, St. Thomas's Hospital; and William Neville Pennant Williams, Liverpool University and private study.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the Preliminary Science Examination for the Licence in Dental Surgery, held on Sept. 27th, 29th, and 30th, the following gentlemen were approved:—

Chemistry and Physics.—Norman Mulliner, Liverpool University; Charles Justin O'Callaghan, Charing Cross Hospital; and John Stanley Palmer, Birkbeck College.

Chemistry.—Philip Blake and Robert Campbell, Charing Cross Hospital; Oliver Nettleton Dadley, Municipal School, Gloucester; and Harold John Stickland, Birkbeck College.

Physics.—Herbert Howard Cooke, Wandsworth Technical Institute; and Walter Alexander Crane, Liverpool University.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Biology and Chemistry.—W. Fox, Charing Cross Hospital.

Materia Medica and Pharmacy.—J. E. S. Sheppard-Jones, St. Thomas's Hospital.

Anatomy.—A. Barry, London Hospital; H. H. Fairfax, Charing Cross Hospital; and G. L. Lawlor and R. V. Martin, St. Mary's Hospital.

Physiology.—A. Barry, London Hospital; J. F. Bourke, Glasgow; and A. E. Bullock, G. L. Lawlor, and R. V. Martin, St. Mary's Hospital.

UNIVERSITY OF GLASGOW.—The following have satisfied the examiners in the fourth (final) professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.):—

Mary Alexander, M.A., Robert Richmond Archibald, M.A., B.Sc., John Atkinson, Robert Blackie Austin, James Alexander Stewart Burges, Thomas Simpson Campbell, B.Sc., Robert Hunter Deans, Louisa Emma Dodge, Peter Drummond, William Deanburn Dunlop, Andrew Scobie Findlay, Thomas Scott Forrest, Alexander Fraser, Nicolas Gebbie, John Gray, Archibald Campbell Haddow, John Reid Haldane, William Hamilton, James Hendry, M.A., B.Sc., James Jack, James Macallan, Donald Christopher Macdonald, Alastair Macintyre, Balfour M'Kean, John Gladstone Mackenzie, Thomas Jones Mackie, Andrew Bruce MacLean, William Alexander MacLennan, Alexander Thomson M'Whirter, Frank Needham Marsh, Campbell Lamont Miller, M.A., Andrew Ross Muir, Clark Nicholson, M.A., John Paterson, Thomas Paterson, Richard Reid Kirkwood Paton, John Penman, James Francis Quigley, Rutherglen, Daniel Wright Ritchie, John Ivison Russell, Margaret Elizabeth Rutherfurd, Florence Elizabeth Sexton, James David Speid Sinclair, Gilbert Innes Strachan, John Norman Macdonald Sutherland, William Oswald Taylor, Stephen Veitch Telfer, and Henry Yellowlees.

The following passed with distinction in the subjects indicated:—

In (*a*) Surgery and Clinical Surgery, (*b*) Practice of Medicine and Clinical Medicine: Thomas Jones Mackie. In Surgery and Clinical Surgery: Robert Hunter Deans and Andrew Ross Muir. In Midwifery: James Hendry, M.A., B.Sc., James Jack, Donald Christopher Macdonald and Balfour M'Kean.

FOREIGN UNIVERSITY INTELLIGENCE.—*Breslau:* Dr. Carl Prausnitz, who has been doing bacteriological work in London, has been appointed Assistant in the University Institute of Hygiene with special charge of the section for the Treatment of Rabies.—*Catania:* Dr. Francesco Francariglia has been promoted to the Professorship of Ophthalmology. Dr. Francesco Caruso has been appointed Extraordinary Professor of Midwifery and Gynæcology.—*Clausenberg:* Dr. F. Veress has been recognised as *privat-docent* of Dermatology.—*Copenhagen:* A new Royal Hospital has recently been opened containing 40 wards. There are also four new university institutes—viz., the Pathological Anatomy Institute under Professor Fibiger, the Pharmacological Institute under Professor Bock, the Pharmaceutical Institute under Professor Pontopidan, and the General Pathology Institute under Professor Salomonsen.—*Erlangen:* Dr. Robert Heinz, *privat-docent* of Pharmacology, has been promoted to an Extraordinary Professorship.—*Florence:* Dr. Cesare Frugone has been recognised as *privat-docent* of Medical Pathology, Dr. Giuseppe Zironi as *privat-docent* of

Surgical Pathology, and Dr. Carlo Francioni as *privat-docent* of Pædiatry.—*Freiburg:* Dr. Karl Hegar, *privat-docent* of Midwifery and Gynæcology, has been granted the title of Extraordinary Professor.—*Genoa:* Dr. Attilio Catterina, Extraordinary Professor of Operative Medicine, has been promoted to the Ordinary Professorship.—*Göttingen:* Dr. W. Heubner, Extraordinary Professor of Pharmacology, has been promoted to the Ordinary Professorship.—*Greifswald:* Dr. Fritz König of Altona has been offered the chair of Surgery vacated by Professor Payr, who is going to Königsberg.—*Innsbruck:* Dr. Fritz Pregl, Extraordinary Professor in the University of Gratz, has been appointed to the chair of Medical Chemistry, in succession to Dr. Löbisch, resigned.—*Königsberg:* Dr. Payr of Greifswald has been appointed to the chair of Surgery in succession to Dr. Lexer, who is going to Jena.—*Marburg:* Dr. P. Ostmann has been promoted to an Honorary Professorship of Otology.—*Modena:* Dr. Carlo Ferrai has been promoted to the chair of Forensic Medicine.—*Munich:* Dr. A. Schmincke of Würzburg has been recognised as *privat-docent* of Anatomy.—*New Orleans* (*Tulane University*): Dr. Robert P. Bean has been appointed Adjunct Professor of Anatomy.—*Padua:* Dr. Arturo Carraro has been recognised as *privat-docent* of General Pathology, Dr. Rodolfo Vigliani as *privat-docent* of External Pathology, and Dr. Enrico Ronzani as *privat-docent* of Hygiene and Sanitation.—*Pisa:* Dr. E. Arman has been recognised as *privat-docent* of Dermatology.—*Prague* (*German University*): Dr. Hans Rubirtius has been recognised as *privat-docent* of Surgery.—*Rome:* Dr. Achille Capogrossi has been recognised as *privat-docent* of Medical Pathology, Dr. Gustavo Modena as *privat-docent* of Neurology and Psychiatry, and Dr. Antonino del Piano as *privat-docent* of Pædiatry.—*Sassari:* Dr. Mario Pelagatti has been promoted to the Ordinary Professorship of Dermatology.—*St. Petersburg* (*Women's Medical Institute*): Dr. Shirshoff, of the Military Medical Academy, has been appointed Professor of Midwifery and Gynæcology.—*Vienna:* Dr. Friedrich Dimmer of Gratz has now accepted the chair of Ophthalmology, which at first he declined.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—The following were the winners of scholarships at this school: University Scholarship: Michael Joseph Petty, Downing College, Cambridge. Preliminary Science Scholarships: 1st, A. L. Blunt, St. Thomas's Hospital Medical School; 2nd, C. O. H. Jones, Technical Institute, Walthamstow. Merchant Taylors' Scholarship: Cyril George Learoyd.

DONATIONS AND BEQUESTS.—In response to the appeal which was made in July last Mr. Otto Beit has promised a gift of £5000 to complete the amount needed for the erection of the Children's Sanatorium (Consumptive Children) at Holt, Norfolk.—Among other large bequests the late Mr. W. Bell of Bootle has left £1000 to each of the following institutions: the Bootle Borough Hospital; the David Lewis Northern Hospital, Liverpool; the Royal Southern Hospital, Liverpool; the Stanley Hospital, Kirkdale, Liverpool; the Liverpool Royal Infirmary; and the Liverpool Blind Asylum. He also left £1000 to the Liverpool University.

THE SALE OF POISONS.—At the Eastbourne county court on Oct. 6th the Pharmaceutical Society was successful in recovering in two distinct cases the penalty of £5 for a breach of the Poisons and Pharmacy Act, 1908. On behalf of the society a purchase was made at a shop at Eastbourne, where the business of a seedsman and florist is carried on, of a bottle of XL All Insecticide. The sale was made by a lady assistant. The proprietor of the shop holds a licence under the local authority, but the assistant did not. In the other case a Hailsham defendent sold a poison used for fumigating purposes in a bottle which did not bear the necessary labels. It was held for the defence that it was an error of an assistant, but Judge Scully, in giving judgment for the Pharmaceutical Society, said "these little mistakes would occur." The Poisons and Pharmacy, 1908, came into force on April 1st, 1909. It provides better safeguards than heretofore existed against the sale of poisons used for medicinal purposes, and extends the facilities for obtaining poisonous compounds used in horticulture and agriculture. In connexion with the latter class of poisons there are, of course, certain regulations which must be complied with as a precautionary measure, so that, in so far as it is possible, deaths from accidental poisoning may be avoided. And the importance of these regulations can be gauged from the fact that in the case of the XL All Insecticide the particular bottle sold at Eastbourne contained sufficient to poison 70 persons, while in the other case the fumigating material contained no fewer than 300 poisonous doses.

DAWLISH COTTAGE HOSPITAL.—Mrs. Nosworthy of Dawlish has given £1000 to the funds of the local cottage hospital. Mrs. Nosworthy gave a similar sum to the institution in 1907.

AT the last meeting of the Buckfastleigh (Devon) urban district council the resignation was accepted with very much regret of Mr. Henry Ubsdell, M.R.C.S. Eng., L.S.A., who has been medical officer of health for the past 35 years.

LONDON HOSPITAL MEDICAL COLLEGE.—The following entrance scholarships have been awarded:—Price Entrance Scholarship in Science (value £120), A. C. Perry. Entrance Science Scholarship (value £60), P. C. Cloake. Entrance Science Scholarship (value £35), S. Batchelor. Epsom Scholarship (value £126), J. N. Deacon. Price Scholarship in Anatomy and Physiology (University Scholarship, value £60), H. H. Mathias (King's College, Cambridge).

UNIVERSITY OF LONDON.—The pass-list of the September matriculation examination of this University shows that 99 students were successful in the first division and 273 in the second division. The results of the June matriculation examination for the colonies show that 12 candidates from Ceylon have passed, 9 from Newfoundland, 2 from Queensland, 2 from Penang, and 1 each from British Guiana, Antigua, Seychelles, and Barbados.

MEDICAL TREATMENT OF LONDON SCHOOL CHILDREN.—The London County Council on Oct. 11th approved arrangements with the Poplar Hospital for Accidents and a local committee in Deptford for the dental treatment of school children as recommended by the Education Committee before the summer recess. The proposal to renew the experimental scheme for the treatment by the "Queen's" nurses of children suffering from suppurating ears in the Paddington instead of the Hackney district was approved. The Finance Committee remarked that the apparent failure of this experiment in two districts raised the question of the general efficacy of the policy, and as to this the Education Committee had been asked to give further particulars.

THE FEES OF DISTRICT MEDICAL OFFICERS: DISCUSSION AT THE METROPOLITAN WATER BOARD.—At its meeting on Oct. 7th the Metropolitan Water Board had under consideration a report presented by the works and stores committee dealing with the regulations governing the duties of district medical officers in the Board's service. The committee, it was stated, had carefully investigated the operation of these regulations so far as they affected the fees to be paid for attendance in cases of accidents to the Board's workmen whilst on duty. As a result of its deliberations the committee recommended that the fee to be paid in accident cases should be 3*s.* 6*d.* in respect of each attendance, except in special and serious surgical cases, in which a higher fee might be justified. In the latter event the Board's chief medical officer should be entrusted with the duty of considering the charges made by the district medical officer, and advising whether such fees were reasonable. Dr. R. M. Beaton (L.C.C.) objected to the method in which the proposed alterations had been presented to the Board. A copy of the regulations should have been circulated amongst the members so that they might have had an opportunity of studying the question, which was intimately connected with the health of the Board's workmen. If the matter were not pressing he hoped the chairman of the committee would consent to postpone it for a month, and in the meantime circulate the regulations. Mr. C. E. Hearson (Camberwell Borough Council) (chairman of the committee) hoped Dr. Beaton would not press his request, because there was nothing hidden behind the committee's report. It referred almost entirely to regulations which had been previously passed by the Board, and the committee had only arranged them in consecutive order, so that they constituted more readable matter for medical men. The only difference that was being made was in regulating the fee for surgical

cases. A subcommittee had carefully considered the whole question with the assistance of the Board's chief medical officer, Dr. R. J. Collie, and it was only in cases where there had been a very serious accident, which required more work than usual, that Dr. Collie would be invited to consider what was a fair fee. The committee's object had been to regulate the charges in surgical cases. In medical cases the fees had been previously passed by the Board and no change was proposed. Dr. Beaton said he entertained no doubt that the question had been carefully considered, and the work was probably well done, but the committee had no right to present to the Board mere strips of information, which they were expected to accept without comment, and when no other facility for investigation than that a member interested should be compelled to ask for a copy of the new regulations. It was against that he protested, and not against the wisdom of the regulations. Mr. Hearson expressed his willingness to defer the whole matter if that were the pleasure of the Board, but repeated that it was only in connexion with the fees for serious accidents that Dr. Collie would be consulted, in case any excessive charge were made by the district medical officer. The fee of 3*s*. 6*d*. for each attendance would be paid in all ordinary cases. The chairman of the Board intimated that the question had been very fully considered in committee for many hours, and was only presented to the Board for formal approval. Dr. Beaton thereupon withdrew his request for postponement, and the committee's recommendation was agreed to.

SOCIETY OF OFFICERS OF "INFANT CONSULTATIONS."—A meeting was held in the summer at the Marylebone Dispensary, 77, Welbeck-street, London, W., to consider the advisability of starting a society consisting of those interested in the work of "infant consultations." The following resolutions were put to the meeting and carried unanimously, subject to amendment at the general meeting to be held on Oct. 19th at 6 P.M. :—

1. That a Society of Officers of "Infant Consultations" be and is hereby constituted.
2. And that the aim and object of such society be to: (*a*) Bring into closer relationship all those engaged or interested in the work of such institutions. (*b*) To promote the establishment of similar institutions and to advise as to their organisation. (*c*) From time to time to hold meetings for the reading of papers and the holding of discussions on subjects germane to the work of "infant consultations." (*d*) For the recording of experience gained by individuals engaged in the work. (*e*) For the collection of literature, statistics, and reports bearing on the subject.
3. That the society consist of a president, vice-president, honorary secretaries, treasurer, librarian, and ordinary members.
4. That the expenses of the society be defrayed by an annual subscription of 2*s*. 6*d*.

An executive committee has already been formed. All communications should be addressed to the honorary secretaries, Dr. H. Ronald Carter, 11, Leonard-place, Kensington, London, W., and Dr. J. Lane-Claypon, 69, Prince of Wales Mansions, Battersea Park, London, S.W.

APPOINTMENT OF ASSISTANT TO THE LIVERPOOL MEDICAL OFFICER OF HEALTH: A NEW DEPARTURE.—Dr. W. L. Hawksley has been recently appointed by the health committee of the Liverpool city council to the new post of assistant medical officer, with special reference to dealing with tuberculosis. There were a large number of applicants, 58 in all, many of them possessing the highest qualifications. It so fell out that there was no better candidate than a local one, Dr. W. L. Hawksley, whose claims lay in the fact that he had held appointments in the David Lewis Northern Hospital and the Liverpool South Dispensary, from which latter institution he was transferred to take charge of the special tuberculosis wards of the corporation at Fazakerley Hospital. After nearly two years' experience there he was appointed one of the school medical officers. In all these posts he had worked well, and these circumstances led to his well-deserved promotion. The duties of the new assistant to Dr. E. W. Hope (medical officer of health) are to visit the homes of persons suffering from tuberculosis who have been in-patients at Fazakerley Hospital or notified under the order of the Local Government Board, with a view to ascertain that medical instructions are being followed and to remind or advise the patient when necessary, as to the precautions to be observed. He will be required to note and report to the medical officer of health any home conditions likely to influence the disease, either in regard to the patient or to those living with him or her. He will also be required to keep systematic records of visits or re-visits and of the conditions found, and to submit them to the medical officer of health, and to carry out any other kindred duty or investigation which the health committee may direct.

A CASE of cholera, presumably cholera nostras, has proved fatal at the Royal Free Hospital.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—The inaugural address, "Le Rheumatisme Tuberculeux" of Poncet of Lyons, will be delivered by Dr. H. Alexis Thomson on Oct. 19th, at 64, St. James's-street, at 8.30 P.M.

THE annual dinner of the Westminster Hospital and Medical School took place on Thursday, Oct. 6th, at the Imperial Restaurant. Mr. W. Vaux Graham, vice-chairman of the hospital, presided. A large number of past and present Westminster men attended, and a most enjoyable evening was spent. The dean reported favourably on the present condition of the school.

ROYAL INSTITUTE OF PUBLIC HEALTH.—The council has decided to admit two medical practitioners possessing the Diploma in Public Health gratuitously for a period of six months each in order to afford them the opportunity for a more extended experience in bacteriological methods. Applications should be forwarded to the Principal, 37, Russell-square, W.C.

THE ROYAL EYE HOSPITAL, ST. GEORGE'S CIRCUS, SOUTHWARK.—At the School of Ophthalmic Surgery and Medicine, connected with this institution, on Friday, Oct. 21st, at 5.15 P.M., a lecture will be given by Mr. J. Stroud Hosford, F.R.C.S. Edin., assistant surgeon to the hospital and assistant ophthalmic surgeon to the Temperance Hospital, London. The subject of the lecture will be "Some Points in the Diagnosis of Orbital Disease."

ROYAL SANITARY INSTITUTE CONGRESS, BRIGHTON.—The sanitary committee of the Brighton town council has placed on record its appreciation of the valuable services rendered to the town by Dr. Duncan Forbes, medical officer of health, as honorary secretary of the local committee entrusted with the arrangements for the successful congress of the Royal Sanitary Institute held at Brighton in September.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on Oct. 6th, with Sir Francis Champneys in the chair. A letter was considered from the medical staff of the Royal Derby and Derbyshire Nursing Institution as to the suspension of the institution as a training school for midwives. It was announced that the chairman, after an interview with Dr. F. R. Cassidi, one of the medical staff of the Royal Derby and Derbyshire Nursing Institution, had reported that the institution had been since July 28th in a position to train pupils according to the rules of the Board. It was decided that the report of the chairman be adopted. Letters (addressed to the chairman) were read from Mrs. Dugdale of Meeson Hall, Wellington, Salop, as to the subsiding of midwives in sparsely populated rural districts. Mrs. Dugdale wished to ascertain whether steps were to be taken in the near future by the State to subsidise midwives in sparsely populated districts. She gave details of the difficulties encountered in raising money for the maintenance of nurses, and stated that after 12 years' experience she found it impossible to collect the necessary funds, and she was forced to the conclusion that a State subsidy was the only means of getting over the difficulty. In her opinion the money required should not be left to individuals to provide. The chairman stated he had written to Mrs. Dugdale saying what the Central Midwives Board had done in sympathy with this movement. Mrs. Dugdale, in replying, said her object was to emphasise the necessity for helping midwives to make a living in sparsely populated districts, otherwise the midwives must make for the towns. In the country parts known to Mrs. Dugdale the medical men had never failed when called upon for help. The Board decided that copies of the previous resolutions on the subject be sent to Mrs. Dugdale. A letter was received from Miss Bernard-Boyce, inspector of midwives for Norfolk, stating that the local supervising authority for that county had now determined

that in no case should a period of suspension of a midwife exceed the term of seven days. An application from the Norwich Maternity Charity to hold the written examination locally at Norwich was considered. The Board decided that it be not granted for the present and that the applicants be informed that they may renew their application when there is a prospect of a larger number of candidates.

UNIVERSITY COLLEGE, LONDON.—The following awards of entrance scholarships and exhibitions to the Faculty of Medical Sciences at University College, London, have been made: Bucknill Scholarship and First Medical Exhibition (value of 190 guineas), divided equally between Mr. W. A. E. Karunaratne and Mr. C. J. H. Sharp. Second Medical Exhibition (value of 55 guineas), Mr. H. A. Fawcett; *proxime accessit*, Mr. E. A. L. Sansom. Epsom Scholarship, Mr. H. Ll. G. Hughes.—The Page May Memorial Lectures in Physiology will be delivered at the College on the following Mondays and Tuesdays at 4.30 P.M.: Oct. 24th and 25th, Nov. 7th, 8th, 28th, and 29th. The first course dealing with Neurology will be delivered by Professor C. S. Sherrington of the University of Liverpool. A syllabus can be obtained on application to the secretary of University College.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.—A meeting of the General Committee of this Congress was held on Wednesday, Oct. 12th, in the library of the Royal College of Physicians of London, under the Presidency of Sir Thomas Barlow. It will be remembered that an advisory board was appointed on Feb. 7th to nominate the officers of the Congress. The report of this board was put before a representative meeting, with the result that Sir Thomas Barlow was elected President, and Dr. W. P. Herringham Secretary. Both elections, made on the proposal of the advisory board, were unanimous. Sir Thomas Barlow, in returning thanks for his election, owned that he wished that he could have escaped the grave responsibility, while Dr. Herringham pointed out to the meeting how enormously he and all interested in the Congress were indebted to the work and zeal of Mr. D'Arcy Power, formerly secretary to the general committee. The advisory board had proposed "that there should be two Treasurers of the Congress, of whom one should be a layman of high financial position, and the other an eminent medical man." The principle of two treasurers was adopted by the meeting, but it was resolved that both should be medical men. The nomination by the board as one of these treasurers of Mr. G. H. Makins was unanimously adopted; the choice of the second treasurer will be made by the executive committee. A large organising committee was then formed by resolution, with directions to select a small executive committee.

BOOKS, ETC., RECEIVED.

ALEXANDER (VAN) AND CO., 31, Craven-street, London, W.C.

Radio-activity. A Brief Guide to its Use in General and Specialist Practice. Compiled by Guy Stephen, D.P.H. Lond., Officier de Santé (France). Price 1*s*.

ARNOLD, EDWARD, London.

Glaucoma. An Inquiry into the Physiology and Pathology of the Intra-ocular Pressure. By Thomson Henderson, M.D. Price 10*s*. 6*d*. net.

BAILLIÈRE, TINDALL, AND COX, London.

Hæmoglobinuria. By Ambrose E. L. Charpentier, M.D. Durham, D.P.H. R.C.P. & S., L.R.C.P. Lond. Price 3*s*. 6*d*. net.

BALE (JOHN), SONS, AND DANIELLSSON, LIMITED, London.

Reports from the Clinical and Research Laboratories, St. George's Hospital, London, 1910. Price 5*s*. net.

BELL, G., AND SONS, LIMITED, London.

The Chained Titan. A Poem of Yesterday and To-day. By W. G. Hole. Price 4*s*. 6*d*. net.

The Inherent Law of Life. A New Theory of Life and of Disease. By Franz Kleinschrod, M.D. Kur-Arzt, Wörishofen. Translated from the German and edited by Louise C. Appel, F.T.S., B.Sc., M.B., B.S. Lond. Price 3*s*. 6*d*. net.

BLACK, ADAM AND CHARLES, London.

The First Principles of Heredity. By S. Herbert, M.D. Viennas M.R.C.S. Eng., L.R.C.P. Lond. Price 5*s*. net.

BLACKIE AND SON, LIMITED, London, Glasgow, and Bombay.

The Public Milk-supply. By Hugh A. Macewen, M.B., Ch.B. Glas., D.P.H. Lond., D.P.H. Cantab. Price 2*s*. 6*d*. net.

CHATTO AND WINDUS, London.

The Airy Way. By George A. B. Dewar. Price 6*s*. net.

CHURCHILL, J. AND A., London.

The Principles and Practice of Medical Jurisprudence. By the late Alfred Swaine Taylor, M.D., F.R.S., F.R.C.P. Lond. Sixth Edition. Edited, revised, and brought up to date by Fred. J. Smith, M.A., M.D. Oxon., F.R.C.P. Lond., F.R.C.S. Eng. In two volumes. Price £2 2*s*. net.

Hernia, its Cause and Treatment. By R. W. Murray, F.R.C.S. Price 6*s*. net.

CONSTABLE AND CO., LIMITED, London. (HOUGHTON MIFFLIN COMPANY, Boston and New York.)

Conquering Consumption. By Woods Hutchinson, A.M., M.D. Price 4*s*. 6*d*. net.

CORNISH BROTHERS, LIMITED, Birmingham.

The Medical Inspection of School Children and After. An Addres, given by Miss M. C. Matheson at the Annual Meeting of the Birmingham Charity Organisation Society, April 19th, 1910. Price 2*d*.

The Physiology and Hygiene of Sleep. By David Fraser Harris, M.D., C.M., B.Sc. Lond., F.R.S.E. Price 3*d*. net.

FISCHER, GUSTAV, Jena.

Die Entwicklung des menschlichen Geistes. Ein Vortrag von Max Verworn, Bonn. Price M.1.

Handbuch der Gesamten Therapie. In Sieben Bänden. Herausgegeben von Dr. F. Penzoldt und Dr. R. Stintzing. Vierte umgearbeitete Auflage. Dreizehnte Lieferung und Vierzehnte & fünfzehnte Lieferung. Price M.4.50.

Handbuch der Vergleichenden Physiologie. Herausgegeben von Hans Winterstein in Rostock. Neunte Lieferung. Band II. Physiologie des Stoffwechsels. Physiologie der Zeugung. Erste Hälfte. Price M.5. Zehnte Lieferung. Band III. Physiologie der Energieproduktion. Physiologie der Form. Zweite Hälfte. Price M.5.

Operative Chirurgie der Harnwege. Normale Anatomie und chirurgische pathologische Anatomie. Von J. Albarran, Paris. Ins Deutsche übertragen von Dr. Emil Grunert. Zweite Lieferung. Price M.8.

Die Atmungsreaktion des Herzens und ihre Verwendbarkeit bei der klinischen Prüfung der funktionellen Leistungsfähigkeit des Herzens. Von San.-Rat Dr. Ehrenfried Albrecht in Bad Oeynhausen. Price M.5.

Studien und Fragen zur Entzündungslehre. Von Dr. Herm. Schridde. Price M.1.40.

Uber traumatische Entstehung innerer Krankheiten. Klinische Studien mit Berücksichtigung der Unfall-Begutachtung. Von Dr. Richard Stern. Zweite neu bearbeitete Auflage. Zweites Heft. Krankheiten der Lungen und des Brustfells. Price M.2.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. A Handbook of the Surgery of Children. By E. Kirmisson, Professor of the University of Paris. Translated by J. Keogh Murphy, M.C. Cantab., F.R.C.S. Price 20*s*. net.

Oxford Medical Publications. A System of Syphilis. In six volumes. Edited by D'Arcy Power, M.B. Oxon., F.R.C.S., and J. Keogh Murphy, M.C. Cantab., F.R.C.S. With an Introduction by Sir Jonathan Hutchinson, F.R.S. Vol. VI. Price £2 2*s*. net per volume; or to subscribers £10 10*s*. net per set of six volumes.

GOVERNMENT CENTRAL BRANCH PRESS, Simla.

Paludism. Being the Transactions of the Committee for the Study of Malaria in India. Edited by Major S. P. James, M.D., I.M.S., Secretary to the Committee. No. 1. July, 1910. Price not stated.

HARPER AND BROTHERS, London and New York.

The Brain and the Voice in Speech and Song. By F. W. Mott F.R.S., M.D., F.R.C.P. Price, cloth, 2*s*. 6*d*. net; leather, 3*s*. 6*d*. net.

HARRISON (HENRY) COMPANY, THE, 70, Linden-street, Brooklyn, New York. BAILLIÈRE, TINDALL, AND COX, London.

A Manual of Toxicology. By Albert H. Brundage, A.M., M.D., Phar.D., M.S. Seventh edition, revised. Price $1.50 net (postage prepaid). With coloured pathological plates, $2.00.

HODDER AND STOUGHTON, London.

Is That Lamp Going Out? By the Author of "Where's Master?" Price 1*s*. net.

INSTITUT OSWALDO CRUZ, Caisse postale, 926, Manguinhos, Rio de Janeiro.

Memorias do Instituto Oswaldo Cruz. Tomo II. Faciculo I. Abril de 1910. Price not stated.

KIMPTON, HENRY, London. (STENHOUSE, ALEXANDER, Glasgow.)

The Care of Children from Babyhood to Adolescence. For the Use of Mothers and Nurses. By Bernard Myers, M.D., C.M., M.R.C.S., L.R.C.P., L.M. With a Preface by George F. Still, M.A., M.D., F.R.C.P. Second edition, revised and enlarged. Price, paper, 1*s*. 6*d*. net; cloth, 2*s*. 6*d*. net.

LEWIS, H. K., London.

The Sexual Disabilities of Man and their Treatment. By Arthur Cooper, Consulting Surgeon to the Westminster General Dispensary. Second edition, revised and enlarged. Price 5*s*. net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

The Essentials of Histology, Descriptive and Practical. For the Use of Students. By E. A. Schäfer, M.D., Sc.D., LL.D., F.R.S. Eighth Edition. Price 10*s*. 6*d*. net.

Crime and Criminals, 1876–1910. By R. F. Quinton, M.D., Late Governor and Medical Officer of H.M. Prison, Holloway. Price 4*s*. 6*d*. net.

Notes on Physiology. By Henry Ashby, M.D. Lond., F.R.C.P. Eighth edition. Revised by Hugh T. Ashby, B.A., M.B., B.C. Camb., M.R.C.P. Lond. Price 5*s*.

MACMILLAN AND CO., LIMITED, London.

Laboratory Notes on Organic Chemistry. For Medical Students. By Paul Haas, D.Sc., Ph.D. Price 2*s*. 6*d*. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

CORKERY, THOMAS HERBERT, L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Assistant School Medical Officer for the Plymouth Division by the Devon Education Committee.

EVANS, A. J., F.R.C.S. Edin., M.R.C.S., L.R.C.P. Lond., has been appointed Visiting Surgeon to the Liverpool Workhouse Hospital.

EVANS, R. J., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Pwllheli District of the county of Carnarvon.

JOHNSON, P., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Hatherleigh District of the county of Devon.

MACLENNAN, ALEXANDER, M.B., C.M. Glasg., has been appointed Assistant Surgeon to the Western Infirmary, Glasgow.

SHORT, LATIMER J., B.S., M.D. Lond., has been appointed Clinical Assistant at the Royal Hospital for Diseases of the Chest.

THOMSON, A. B. M., M.B., Ch.B. Edin., has been appointed Assistant Medical Officer to the Dundee School Board.

THOMSON, C. B., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Wimborne District of the county of Dorset.

WILTSHIRE, HAROLD W., M.D. Cantab., M.R.C.P. Lond., has been appointed Assistant Physician to King's College Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund-street.—House Surgeon for six months. Salary at rate of £70 per annum, with board, lodging, and washing.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—Two House Surgeons for six months. Salary at rate of £75 per annum, with board and residence.

BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £100 per annum, with apartments, board, and attendance.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Resident Medical Officer, unmarried. Salary £160 per annum, with rooms, coals, gas, and attendance.

BRISTOL, COSSHAM MEMORIAL HOSPITAL, Kingswood.—House Surgeon.

BRISTOL ROYAL INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments, board, and laundry. Also Dental House Surgeon. Salary £100 per annum.

BURNLEY, COUNTY BOROUGH OF.—Assistant Medical Officer of Health. Salary £250 per annum.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—Locum Tenens House Surgeon.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon for six months. Salary £30, with board, residence, and laundry.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.—Registrars. Also Clinical Assistants.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £75 per annum, with board and lodging. Also Surgeon-in-Charge for Branch Dispensary. Salary £80 per annum, with board and lodging.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £60 per annum, with board, apartments, and laundry.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Surgeon, also House Physician. Salary in each case £80 per annum, with board, washing, and residence.

COUNTY OF LONDON CENTRAL DISTRICT.—Coroner. Salary £1250 a year.

DENBIGH, NORTH WALES COUNTIES ASYLUM.—Medical Superintendent. Salary £500 per annum, with house, &c.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with board and lodging. Also Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, &c.

DOUGLAS, NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon, unmarried. Salary £90 per annum, with board and washing.

DUBLIN, DR. STEEVENS' HOSPITAL.—Honorary Anæsthetist.

FRENCH HOSPITAL, 172, Shaftesbury-avenue, W.C.—Resident Medical Officer, unmarried. Salary £50 per annum, with board and laundry.

GLASGOW DISTRICT ASYLUM, Woodilee, Lenzie.—Assistant Medical Officer. Salary £125 per annum, with board, lodging, washing, &c.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—Surgeon.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £50, with board, residence, and laundry.

HALIFAX UNION POOR-LAW HOSPITAL.—Resident Medical Officer. Salary £110 per annum, with apartments, rations, and washing.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with rooms, board, and washing.

IPSWICH, BOROUGH OF.—Assistant Medical Officer of Health. Salary £250 per annum.

KING EDWARD VII. SANATORIUM, Midhurst, Sussex.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and attendance.

LISCARD, WALLASEY DISPENSARY AND VICTORIA CENTRAL HOSPITAL, Cheshire.—House Surgeon, unmarried. Salary £100 per annum, with apartments, board, attendance &c.

LIVERPOOL MEDICAL MISSION.—Assistant Medical Officer. Salary £150 per annum.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 per annum, with rooms, attendance, board, and washing.

MANCHESTER, ANCOATS HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board, &c.

MANCHESTER ROYAL INFIRMARY.—Medical Officer for six months. Salary at rate of £100 per annum, with board and residence.

MARGATE, ROYAL SEA BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—Resident Surgeon. Salary at rate of £80 per annum, with board and residence.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood.—Honorary Dental Surgeon.

NEW HOSPITAL FOR WOMEN.—Two House Surgeons, Senior Assistant and a Clinical Assistant for Ophthalmic Department, and Clinical Assistant for Tuesdays (all females).

NEWCASTLE-UPON-TYNE CITY ASYLUM, Gosforth.—Junior Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, board, and laundry.

NORWICH CITY ASYLUM, Hellesdon-next-Norwich.—Assistant Medical Officer, unmarried. Salary £150 per annum, with rooms, board, and laundry.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with board, lodging, and washing.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—Honorary Dental Surgeon.

PENDLEBURY, MANCHESTER CHILDREN'S HOSPITAL.—Visiting Surgeon. Salary £100 per annum.

PRESTON ROYAL INFIRMARY.—Senior and Junior House Surgeons, unmarried, for six months. Salaries £80 and £60 per annum, with board, residence, and washing.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Honorary Assistant Surgeon. Also Junior House Surgeon and Junior House Physician for six months. Salary £40 per annum in each case, with board, residence, and laundry.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Assistant Physician. Also Assistant Surgeon.

ROYAL GENERAL DISPENSARY, 25 and 26, Bartholomew Close, E.C.—Physician. Salary £40 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London, E.C.—Resident Medical Officer for six months. Salary at rate of £120 per annum, with board, lodging, and washing.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—Resident House Surgeon, unmarried, for six months. Salary £100, with board, residence, and washing.

ROYAL NAVAL MEDICAL SERVICE.—Fifteen Commissions.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—House Surgeon. Salary at rate of £50 per annum, with board, residence, and laundry. Also Pathologist and Curator. Salary £50 per annum.

ST. ALBANS, HERTS COUNTY ASYLUM, Hill End.—Junior Assistant Medical Officer. Salary £150 per annum, with board, lodging, washing, &c.

ST. MARY'S HOSPITAL, Paddington, W.—Casualty Physician. Salary £75 per annum.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Senior Resident Medical Officer, unmarried. Salary at rate of £100 per annum, all found.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon for six months. Salary £80 per annum, with board, residence, and laundry.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon. Salary £80 per annum, with board, lodging, and laundry.

TIVERTON INFIRMARY AND DISPENSARY.—House Surgeon and Dispenser. Salary £80 per annum, all found.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Physician for Diseases of Women. Also Anæsthetist.

WESTMINSTER GENERAL DISPENSARY, 9, Gerrard-street, Soho, W.—Resident Medical officer. Salary £120 per annum, with rooms, gas, coal, &c.

WESTMINSTER HOSPITAL.—Medical Officer in charge of Electrical Department. Salary £120 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

Births, Marriages, and Deaths.

BIRTHS.

KILLICK.—On Oct. 7th, at Trinity House, Maidstone, the wife o Charles Killick, M.D., F.R.C.S., of a son.

POLLARD.—On Oct. 4th, at Harpur-place, Bedford, the wife of H. Dean Pollard, M.B., B.S., F.R.C.S., of a son.

MARRIAGES.

HAWKSLEY—BENSON.—On Oct. 7th, at Deeping St. Nicholas Parish Church, Lincolnshire, by the Rev. W. M. Benson, assisted by the Rev. S. Skene and the Rev. E. P. Cook, M.A., Walter Linney Hawksley, of Liverpool, eldest son of the late Dr. and Mrs. Hawksley, of Southport, to Annie Gertrude, youngest daughter of the Rev. and Mrs. W. M. Benson, Deeping St. Nicholas.

UPCOTT-GILL—BIRT.—On Oct. 4th, at St. Etheldreda's, Hatfield, Herts, Geoffrey A. Upcott-Gill, F.R.C.S., to Constance Mary, only daughter of Sir William and Lady Birt.

DEATHS.

FRASER.—On Oct. 7th, at Borthwickbrae, Hawick, N.B., suddenly, Frederick William Dyce Fraser, M.D., aged 55 years.

LEAF.—On the 5th inst., at Eastbourne, Cecil Huntington Leaf, F.R.C.S., of 75, Wimpole-street, W., son of the late Frederick H. Leaf, of Streatham.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"IMITATIVE SUICIDE."

THE subject of imitative suicide has recently attracted attention in the public press. The mental condition of an individual who commits suicide is difficult to fathom. In one class of case a person will fancy that he is being constantly persecuted, that he is always watched, or that he is financially ruined—all these ideas being contrary to fact; he destroys himself in order to escape these imaginary evils. Such a man is obviously of unsound mind. In another class of case a man has committed a crime or disgraced himself in some way, and in order to free himself from the consequences of his act he takes his own life in preference to facing exposure or the punishment entailed. Such an individual is not necessarily insane. But there is yet another class—people who are subject to attacks of depression and who are apt to brood over real or imagined injuries. These are "weak-minded," or may be on the "border line" between sanity and insanity. Or another class likely to act upon some sudden impulse are the alcoholics. In these a passing suggestion is likely to result in some deed of violence often of a suicidal nature. Such impulses are susceptible of being spread by imitation. Reading in the newspaper of a mode of self-destruction which is likely to excite great notoriety has been known to induce a similar act in the reader; a suicide by coal-gas, especially when a description has been given of the exact manner in which the deed was carried out, has found imitators. More particularly, however, the sight of a particular spot or locality where previous suicides have taken place may induce a person, who may hitherto have been unsuspected of any such disposition, to destroy himself. Falls from heights especially come under this heading. Numerous suicides have taken place from the Suspension Bridge at Clifton. A writer in the *Yorkshire Evening News* has recently said that much harm is done by pictures and descriptions, and that imitative suicide may follow. We agree with him that the necessary suggestion may be evolved by such means. The suggestion may act on the conscious mind or the subconscious. Numerous instances are on record of alcoholics who have attempted to destroy themselves by throwing themselves from buildings and the like, and have subsequently retained no recollection of the event. The mere fact of being at a height suggested the act of throwing themselves over, and the action immediately followed the idea, as is so often the case in such individuals. These cannot always be considered as "imitative," but in some cases they are possibly of that nature.

A QUESTION OF FEES.

To the Editor of THE LANCET.

SIR,—One so often hears the poor general practitioner accused by the "heads of the profession" of lacking in that nice conception of medical etiquette in his dealings with his professional brethren which obtains amongst the army of consultants that I am tempted to ask you to record a recent experience of mine at the hands of one of these superior persons.

As I was travelling by train in the provinces I had the misfortune to get a piece of grit from the engine impacted in my cornea. On arriving at one of our largest cities I found that the eye was causing me much pain, and was advised by a non-medical friend who knew the town to go to an ophthalmic dispensary near at hand. I went there, but found that the house surgeon was not resident and had left. The attendant directed me to the house of Dr. ——, who holds a position on the staff of the chief hospital in the city.

On being ushered into "the presence" I explained that I was a general practitioner from a neighbouring county, and, apologising for troubling him, asked him to remove the offending particle. He replied that it was no trouble, cocainised the eye, removed the grit, instilled atropine, and applied a bandage. I thanked him, and, though rather afraid of insulting him by the question, asked what was his fee. To my surprise he at once replied, "*One* guinea." The accent upon the numeral plainly intimated that this was a concession, and that had I been a layman the charge for this major operation would have been two at least. Not being an argumentative person, I paid at once and departed, "shaking the dust from off my feet as a testimony against him."

I am confident that no general practitioner would have made any charge for similar services rendered to a professional brother, whether a stranger or no. We may have our shortcomings, but we observe the old proverb, "Hawks don't pick out hawks' een," in treating our ailing brethren.

I am pleased to see from the "Medical Directory" that the operator lectures to the students of his hospital on ophthalmology and not on medical ethics.

I enclose my card and sign myself, yours faithfully,

Oct. 4th, 910. M.B., F.R.C.S.

HEALTH IN WEST AFRICA.

IN our issue of Oct. 1st, p. 1053, we published an abstract of the report to the Colonial Office on Health and Sanitation in Sierra Leone in which was noted the great improvement in sanitation that is taking place in our West African colonies. We have now received the *West African Annual* for the year 1910 which contains the record of a journey to Liberia and our colonies at Sierra Leone, the Gold Coast, and Southern Nigeria made at the end of last year on behalf of the *African World*. By means of pen and camera an attempt is made to give the reader an idea of the developments now going forward in these colonies. Under the heading "The Health Factor and its Bearing on Economics" a well-deserved tribute is paid to the "measures which are due to Sir Patrick Manson, Major Ronald Ross, and Dr. the Hon. W. T. Prout, and the splendid band of men who have promulgated and enforced them throughout the whole length of British West Africa." In an interview at Lagos with Dr. J. Arthur Pickels some interesting information is given with regard to the health conditions at that place. These have greatly improved during recent years owing to the filling up of swamps, the methodical crusade against mosquitoes, the free distribution of quinine, and the more exact medical knowledge and better appreciation by laymen of the personal care of their health. Dr. Pickels points out that the mortality is markedly less than formerly in the large towns, that various comforts so useful to medical men when prescribing for an invalid are now easily obtainable, and that the sanitation of the town has greatly improved under the care of the municipal board, of which the principal medical officer, Mr. W. H. W. Strachan, C.M.G., is chairman. The making of good roads, which give free passages for fresh air, and the removal of cul-de-sacs and narrow winding lanes have also greatly helped towards healthier conditions. With regard to the native attitude towards European medical men, Dr. Pickels says that although there was at one time an attitude of suspicion and unwillingness to place themselves under treatment, the people are now beginning to take a more enlightened view. The native doctors having charge of the Government dispensaries in the town have helped to bridge over the feeling of distrust of the medical profession which formerly existed in the minds of the natives. In an interesting description of the Lagos Hospital it is stated that the institution is made up of a number of bungalows specially built on an island site, surrounded by a wall which makes the place quite a little village by itself. The European ward is situated in a stone bungalow which contains ten beds. One ward is used mainly for the military and the police, who are kept together for convenience in inspection by their own officers. Another ward for female natives contains eight beds. There is a completely equipped operating theatre, and the services of native female nurses are utilised in the hospital. The institution is a Government one and is open to everybody, but Europeans and natives able to afford it pay according to their means. The *Annual*, which is published by the African World, Limited, Throgmorton House, Copthall-avenue, London, E.C., at the price of 1*s*., contains a good map, is well illustrated, and supplies a great deal of useful information not only to those who intend to visit West Africa, but to those at home who wish to make themselves acquainted with the conditions of life in a not unimportant part of the British Empire.

USEFUL DIARIES.

FROM the Cambridge University Press has come a useful little diary, the Cambridge Pocket Diary for 1910–1911, beginning, that is, in the last week in September of 1910, and running to September 30th, 1911, covering, therefore, the academical instead of the calendar year. The diary will easily go into the waistcoat pocket and costs only 1*s*. or can be obtained with a pencil and stamp pocket added for 2*s*. The same firm is also publishing a block-form diary of the academical year, each page of which contains seven days, the printed matter being arranged on the left hand half of the sheet, ample space being left on the right for manuscript notes for engagements.

HEALTH IN THE TONGA OR FRIENDLY ISLANDS.

A PROTECTORATE over these islands, situated in the Southern Pacific, 390 miles to the East-south-east of Fiji, was proclaimed in May, 1900. According to the latest report received at the Colonial Office from the British Agent and consul, Mr. W. Telfer Campbell, the population at the end of 1909 was estimated at 21,958. In the year 1909 there were 293 births and 267 deaths. The most prevalent disease is yaws. Native children are expected to go through an attack as a matter of course. If a child be lucky enough to escape its relatives consider that it will not be healthy. Dysentery and enteric fever occur occasionally, but are not so prevalent as might be expected in view of the primitive sanitary arrangements. Cases of leprosy are scattered throughout the group. The question of setting an island apart for the segregation of lepers is receiving the attention of the Government. The Protectorate is free from malaria, but this is, unfortunately, not the case with tuberculous diseases, which are increasing. This increase is accounted for by the habits of the natives, and the practice, as elsewhere in the Pacific, of overclothing themselves with European clothing, which when wet through, is allowed to dry on the body and

is at night time or when the heat is felt frequently discarded. Epidemics are of comparatively rare occurrence. The provision made for sanitation so far has been inadequate, and the low-lying nature of most of the islands of the group renders the matter of drainage a difficult one. During eight months (April-December) of the year the climate is good for a tropical one. The remaining four months comprise what is known as the hurricane season, in which the weather is hot and humid with a good deal of rain. The climate is not suitable for Europeans to perform hard manual labour in for any length of time. There is a hospital established at each of the three head centres in the group. Each is under a resident European medical officer. The benefits to be derived from these establishments are unfortunately not fully availed of by the Tongans. The latent faith in native pharmacy causes modern remedies and methods to be treated, as far as possible, with doubt if not with contempt. The civilisation of Tonga will have to be much deeper than it is before the natives can properly appreciate modern medical science and the services of its votaries. The senior medical officer at Tonga is Dr. C. E. Maguire.

E. D. C.—Such a circular note of professional qualifications and attainments should not, of course, be distributed to lay people in any broadcast fashion. Probably our correspondent would not have heard anything of the matter if his critic had known that only 10 or 12 patients had received the circular.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1910:—

Oct. 16th-22nd (Barcelona).—First International Spanish Congress of Tuberculosis.
Nov. 7th-12th (Cape Town).—Twelfth South African Medical Congress (1910).

In 1911:—
May-October (Dresden).—International Hygiene Exhibition.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Birmingham).—British Medical Association.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September (Brussels).—Exhibition of Fractures.
September (Sydney).—Australian Medical Congress.
Sept. 24th-30th (Rome).—International Congress on Tuberculosis.
" 25th-29th (Rome) Seventh International Congress of Dermatology and Syphilology.
October (Cologne).—International Congress of Criminal Anthropology.

In 1912:—
September (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

In 1913 the only fixture so far is in London, where the Seventeenth International Congress of Medicine will take place.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—H. Charles Cameron, H. H. Dale): at 4.30 P.M.

Presidential Address:
Professor A. R. Cushny, F.R.S.: A Plea for the Study of Therapeutics.

PATHOLOGICAL SECTION (Hon. Secretaries—C. Bolton, J. C. G. Ledingham): at 8.30 P.M.

Presidential Address:
Dr. F. W. Mott, F.R.S.

THURSDAY.

DERMATOLOGICAL SECTION (Hon. Secretaries—H. G. Adamson, J. H. Sequeira) at 11, Chandos-street, W.: at 5 P.M.

Cases:
Mr. J. E. R. McDonagh: Cases of Syphilis treated by "606."
Dr. A. Winkelried Williams: (1) Gonorrhœal Keratosis of Palms and Soles; (2) Ulcerating Scleroderma improving under Mercurial Inunction; (3) Epithelioma of Chin, Simulating Actinomycosis.
Dr. H. G. Adamson: Atrophia Maculosa Cutis.

FRIDAY.

OTOLOGICAL SECTION (Hon. Secretaries—H. J. Marriage, Sydney Scott) at 11, Chandos-street, W.: at 5 P.M.

Discussion:
On Syphilis in Relation to Otology (to be opened by Mr. Arthur Cheatle, President of the Section).

ELECTRO-THERAPEUTICAL SECTION (Hon. Secretaries—Reginald Morton, G. Harrison Orton): at 8.30 P.M.

Paper:
Dr. Franz Nagelschmidt: The Thermic Effects produced by High Frequency Currents, and the Therapeutical Uses of Diathermic Treatment.

ROYAL MICROSCOPICAL SOCIETY, Doré Gallery, 35, New Bond-street, W.

WEDNESDAY.—8 P.M., The President will read a paper by Mr. J. J. Simpson: Hicksonella, a New Gorgonellid Genus.—Mr. E. M. Nelson: (1) Resolution of New Detail in a Coscinodiscus Asteromphalus; (2) A Micrometric Difficulty. Exhibition of Pond Life.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, 11, Chandos-street, Cavendish-square, W.

FRIDAY.—8 P.M., Card Specimens will be shown by Dr. C. Markus, Mr. G. W. Roll, and Mr. C. Blair. Mr. G. Coats will read a Paper.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

FRIDAY.—8.30 P.M., Dr. A. G. Bagshawe: Recent Advances in our Knowledge of Sleeping Sickness.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY—4 P.M., Dr. H. B. Donkin: Harveian Oration.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

FRIDAY.—5 P.M., Prof. A. Keith: Specimens illustrating Obstruction of the Bowel caused by (1) Defects of the Diaphragm; (2) Peritoneal Pockets; (3) Imperfect Attachment of the Mesentery. (Museum Demonstration.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. C. Fox: Clinique (Skin). 5.15 P.M., Lecture:—Dr. G. Oliver: Some Bedside Clinical Methods (with demonstrations).
TUESDAY.—4 P.M., Dr. P. Stewart: Clinique (Medical). 5.15 P.M., Lecture:—Dr. E. C. Hort: Diagnosis and Treatment of Gastric and Duodenal Ulcer (continued).
WEDNESDAY.—4 P.M, Mr. D. C. L. Fitzwilliams: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. A. W. M. Robson: Certain Points in Diagnosis and Treatment arising out of his last 150 Operations for Duodenal Ulcer.
THURSDAY.—4 P.M., Mr. J. J. Clarke: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. J. F. H. Dally: Respiration in Health and Disease.
FRIDAY.—4 P.M., Dr. A. McNab: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Dunn: Glaucoma, its Varieties and Treatment.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Demonstration in Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. G. Stewart: The Diagnosis of Functional and Organic Disorders of the Nervous System (Lecture I.).
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. G. Stewart: The Diagnosis of Functional and Organic Disorders of the Nervous System. (Lecture II.).
THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery (Lecture II.).
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Abraham: Cases of Skin Disease.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 2.15 P.M., Special Lecture:—Mr. W. Turner: Some Surgical Conditions of the Large Intestine.
TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. Special Lecture:—2 15 P.M., Dr. G. Rankin: Endocarditis.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Buzzard: Myasthenia Gravis.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. F. Buzzard: Myelitis.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Dr. Atkinson: Pharynx and Naso-Pharynx.

FRIDAY.—3.45 P.M., Lecture:—Dr. Abercrombie: Clinical Cases.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE CHEST, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Eczema, its Varieties, Symptoms, and Causes.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Dr. Habershon: Bronchiectasis.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. C. H. Melland: Some Conditions associated with Enlargement of the Lymphatic Glands. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.),

TUESDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (19th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (20th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (22nd).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

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TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at these rates, whatever be the weight of any of the copies so supplied.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 12th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 6	30·45	N.	...	77	65	55	54	56	Overcast
,, 7	30·26	E.	...	107	68	54	57	58	Fine
,, 8	29·96	E.	...	88	63	57	56	58	Cloudy
,, 9	30·02	N.	...	61	60	55	54	56	Overcast
,, 10	30·04	S.W.	...	99	67	56	54	57	Cloudy
,, 11	29·82	S.W.	...	87	67	56	58	59	Cloudy
,, 12	29 60	N.	0·25	51	51	51	50	51	Overcast

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The Harveian Oration

ON

SOME ASPECTS OF HEREDITY IN RELATION TO MIND.

Delivered before the Royal College of Physicians of London on Oct. 18th, 1910,

BY H. B. DONKIN, M.D. OXON., F.R.C.P. LOND., M.R.C.S. ENG.,

MEDICAL ADVISER TO THE PRISON COMMISSIONERS; DIRECTOR OF CONVICT PRISONS.

MR. PRESIDENT AND FELLOWS,—In offering the Harveian orator's solemn apology for accepting the honour conferred upon him I am personally conscious of discharging no vain formality. Having been long occupied in public duties but partly medical, and thus prevented from duly obeying the presidential biddings to the Comitia, I appreciated highly the compliment so graciously bestowed upon me by Sir Richard Douglas Powell in appointing me to this important office. The choice, however, of a fitting theme, and the difficulty, on an occasion like this, of handling that to which I inclined, caused me to hesitate gravely before taking up this honourable burden. Permit me now, Sir Thomas Barlow, while respectfully and cordially congratulating both yourself and the College on your succession to this famous chair, to plead for your merciful judgment on my present effort to fulfil your predecessor's behest.

HARVEY'S INJUNCTIONS IN REGARD TO THE ORATION.

The lapse of time since Harvey ordained this annual oration has rightly lessened the rigour of literal obedience to his injunctions. No oration in Latin has been heard for nearly half a century; nor has the annual feast been always celebrated within the College walls. In recent years, at least, no orator but Dr. Frederick Roberts has succeeded in the task of commemorating all our benefactors by name, this first Harveian injunction being usually fulfilled by the mention of such gifts made to the College, or such work achieved by its alumni during the past year, as may be deemed to increase its usefulness or redound to its glory. I cannot find that the year now passed has added to our benefactions of either kind. But there is one great name, besides that of Harvey whom we delight to honour unceasingly, that calls for signal note to-day. I am reminded that on the 6th of this month, 400 years ago, was born John Caius, nine times President of this College, virtual founder of the Cambridge college that popularly bears his name alone, and the second of the three illustrious ones on our roll to whom we can apply, in changing one word, the Lucretian saying, "Quasi cursores *medicinæ* lampada tradunt." Our own scholar-physician, Dr. Payne, whose frequent presence here is so sorely missed, has left in the minds of all who heard or read his Harveian Oration a vivid picture of Dr. Caius, stretching out one hand to our Founder, the famous medical humanist of the fifteenth century, the other to our immortal scientific physiologist of the seventeenth.

Though Caius, who taught Greek in Padua, and, later, essayed to prove that the University of Cambridge was founded in the fourth century before the Christian Era, may, in some respects, have been more nearly related in spirit to Linacre than to Harvey, yet his introduction of practical anatomy into this country, his work on "Some Rare Plants and Animals," and especially his admirable study of the sweating sickness, to which Payne refers as "the first original contribution to clinical medicine of which this country can boast," all, surely, tend to show that he had a true bent towards independent investigation, that his face was well set forwards, and that he sighted the beams of the rising sun of modern method. Let us, then, praise this famous man to-day as the first scientific physician on our roll.

I think that due reflection on the actual words and import of the historic document, wherein Harvey, among other express commands, enjoins the delivery of this oration, will justify some further adaptation of his orders in my endeavour to fulfil the spirit of his intentions. Harvey's motives were determined by the conditions of his time. Very prominent in this deed of gift is his intense desire to promote concord among the College members. The deed virtually begins and ends with insistent and particular warnings against discord, delicately though these warnings are expressed in terms of earnest call to professional harmony. Even the time-honoured order "to exhort the Fellows to search and study out the secrets of nature by way of experiment," brief as it is in comparison with his other and more emphatic injunctions, seems to echo his regret for the prevalent dogmatism and intellectual apathy of the physicians of his day. Doubtless Harvey enjoyed the high appreciation of many colleagues to whom he imparted his great discovery before giving it to the world. He was President-elect of this College. But it may be suggested, in view of his manifest superiority of intellectual grasp, that his commands were largely inspired by his sense of the defects of his medical contemporaries. Medical England was not ready for Harvey, albeit the spirit of science was abroad in the land, richly informing other branches of knowledge. This College, until long after his time, achieved little to foster even such a quest after a scientific basis for medical art as had been followed with insight by the great Greeks of old. Instead of encouraging scientific work by various honours and awards, as it does in our day, or of paying reverent tribute to scientific genius, as it did on that ever-memorable occasion when some of us were enabled at least to say *Darwin vidi tantum*, or of using its high privilege as a scientific body, by opening its doors as it did this year, to the defenders of research, it seems to have been busier in coercing the apothecaries, and in warning away from London the medical graduates of Oxford and Cambridge. But Harvey was in love with science; like Huxley, the great modern prophet of scientific method, he was penetrated by the missionary spirit, and eager to turn away his fellows from personal quarrellings and verbal disputations, he directed them towards the fruitful acquirement of medical truth by bidding them to the scientific study of nature for their better enlightenment.

If this view find favour, I may be pardoned for passing over what appears to me, in its literal sense, the most important of Harvey's exhortations, and for modifying adaptively that other special injunction to which, in common with my predecessors in this office, I strive to make response. If Harvey were with us now he would acknowledge that his dominant exhortation is needed no more; for he would note the extinction of rancorous disputes on medical superstitions and the rarity of overt personal jealousies, and would congratulate the physicians of to-day that only gross treason to medical truth and dishonourable conduct are likely to strain those fraternal bonds of science and a common profession which now so generally unite them. He would recognise also that the "way of experiment," even in the strict and modern sense of artificially designing conditions for the purpose of discovery, is now very widely followed, and would even justify the contention that this way of experiment, regarded exclusively as the only way to the attainment of sound knowledge, may sometimes lead to error instead of truth.

SCIENTIFIC METHOD.

It is solely in view of the biological nature of my subject, which, briefly, is that of Some Aspects of Heredity in Relation to Mind, that I venture to say here a few more words on scientific method. Outside the field of biology, or even of that section of it which is concerned with heredity, I might be charged with serving up a *crambe repetita*. But there seems to be a difference of opinion among biologists concerning the function and scope of experiment in the solution of scientific problems, some of them apparently holding, in view of the paramount necessity in some branches of science of the use of experiment in the ascertainment of facts or in the testing of hypotheses, that facts arrived at by observation alone are of minor value or comparatively negligible. At any rate, the well-known and accredited method of investigation which has been followed by Newton, Harvey, Darwin, and all great discoverers whose work is of permanent value, is not always employed. I mean, of course, the method (1) of observation (including the artificial variety called experiment), (2) of comparison and classification, leading to inferences or hypotheses or inductions, (3) of deduction, or prediction of the consequences which must follow on the assumption of such hypotheses, and (4) of verification, by the widest possible

appeal to all attainable and relevant facts, whether ascertained by observation or experiment, in order to see whether such consequences do or do not occur. The position that this—the method of "trained and organised common-sense"—is the method of all sciences of which the final aim is the discovery of causes, or interpretation, is perhaps not openly assailed; but there are some instances in biological writings where special value is apparently attributed to a fact because it has been found out by experiment rather than by simple observation; and also some instances of omission to test by deduction, and by a wide appeal to further relevant facts, hypotheses which have been based on experimental discovery alone. It is, of course, true that in sciences where, as in physics and chemistry, many of the facts are, in their nature, latent and obscured, the method of observation by way of experiment is indispensable for their discovery. So also is it indispensable over a large area of the field of physiology. But many facts in biology and medicine are patent to observation alone. Harvey, as a great physiologist, saw vividly the paramount importance of experimental work, both in ascertaining his facts and in deductively testing his conclusions; but surely neither he nor any other clear thinker would deny that when, in any field of study, such as that of the human being, normal and morbid, many patent and important facts present themselves clearly to direct observation, an injunction to proceed by the way of experiment only would prove to be a harmful limitation, and especially inimical to biological and medical inquiry. This subject of method is dealt with very luminously by Dr. Archdall Reid in his recent and attractive work on the "Laws of Heredity"—a book full of valuable thoughts and observations, which must tend to clarify greatly the reflections of many on the difficult problems of heredity, and especially those which relate to mankind.

In the present context this author says, "An hypothesis merely founded on facts, previously obscured, which have been revealed by experiment, has no special claim to accuracy. The subsequent thinking may or may not be accurate. To discover the accuracy of the thinking we have to use tests which that particular experiment, of course, cannot furnish. A neglect to *test* thinking founded on experiment, combined with an assumption that such thinking is necessarily accurate, is very frequent." This contention that a deductive test of conclusions arrived at by induction is necessary to establish proof, self-evident though it appears, has been stigmatised by some modern writers on biology as "merely deductive," "logical," "philosophical," "pre-Baconian," or even as mere "ratiocination," this last Latinised epithet being apparently preferred by the critic to the simple word "reasoning," for the sake of avoiding open discomfiture.

Such writers may well be referred to these words of De Morgan: "Modern discoveries have not been made by large collections of facts with subsequent discussion, separation, and resulting deduction of a truth thus rendered perceptible. A few facts have suggested an *hypothesis*, which means a *supposition* proper to explain them. The necessary results of this supposition are worked out, and then, and not till then, other facts are examined to see if these ulterior results are found in nature. The trial of the hypothesis is the *special object*, prior to which the hypothesis must have been started, not by rule, but by that sagacity of which no description can be given, precisely because the very owners of it do not act under laws perceptible to themselves. Wrong hypotheses, rightly worked from, have produced more useful results than unguided observation. But this is not the Baconian plan ..... What are large collections of facts for? To make theories *from*, says Bacon; to try ready-made theories *by*, says the history of discovery."[1]

I trust, therefore, that these few remarks prompted by my subject, which is concerned more largely with observation and reasoning than with actual experiment in the modern sense, will serve to excuse the version of the statutory exhortation which I now venture to deliver, in the form of a reminder, to all searchers of nature: To study out her secrets in every field, not by following any exclusive way, but by the use of that comprehensive method, common to interpretative sciences, which takes account of all authentic and relevant facts, and tests all thinking—the method, indeed, that was followed so notably by Harvey himself.

[1] See De Morgan's Budget of Paradoxes, pp. 55-56, quoted in Welton's Manual of Logic, vol. ii., p. 60.

My occupation of late years, much concerned as it has been with such matters as crime, inebriety, and mental defect, has directed my attention afresh to the subject of the evolution and inheritance of mental characters—a subject which attracted me, when, in the course of somewhat erratic reading for the Oxford Classical School, I perused the Origin of Species, then "mewing its mighty youth," and also the first edition of "The Physiology and Pathology of Mind," by our now renowned Fellow, Dr. Maudsley. As a further excuse for my choice of matter I may claim, as an encouraging precedent, the recent Harveian Oration by Dr. Ormerod, in which he showed, by quotations from the "Exercitationes de Generatione," that Harvey's mind had certainly dwelt on the subject of heredity in some of its aspects. And I hope before I close to show, from my own study of this great work on "Generation," that Harvey had at least a glimpse, among other cognate questions, of the want of some useful distinction between so-called "innate" and "acquired" characters—a want which, indeed, furnishes the point of many of the remarks I shall now submit. These are chiefly intended to emphasise the immense importance to man's life and progress of the characters called "acquired"—an importance, in my judgment, greatly underrated by some modern biologists.

EVOLUTION OF MIND.

I must first assume, with but brief comment, the position that mind has been evolved. Only on this assumption is it possible to inquire scientifically into the question of the inheritance of mental characters, and to seek for even a proximate explanation of their development and defect. I know, indeed, of but one living evolutionist of great and rightful fame, the co-discoverer with Darwin of the Law of Natural Selection, who, Darwinian or even ultra-Darwinian though he is on other points, explicitly holds that the origin of the mind and of sensation or consciousness in all organisms is, equally with that of life itself, outside the field of natural operations, and necessitates the assumption of a new power of spiritual essence.[2]

However true it may be, such a belief can be neither disproved nor contested by scientific reasoning. But while some relegate wholly such questions as these, with that of the primal origin of the universe, to the sphere of supernature, others feel compelled to seek for natural laws in any direction where scientific method may possibly guide them. For these the study of man, as we find him, practically presupposes that the development of his mind, with all its capacities, has depended on that of his mighty brain, which has been organically evolved under the influence of natural selection. Darwin himself taught the grammar of the evolution of mind, tracing it upwards from instincts to reason, from lower to higher organisms. Thus he laid the foundation for further scientific inquiry into the questions of the development and transmission of mental characters.

In making this assumption regarding the evolution of mind I assume, too, without argument, and for brevity's sake, the Darwinian doctrine which implies that the variations on which natural selection mainly works in the evolutionary process are germinal or innate, and are not caused by the action of the environment. Darwin, himself, in the chapter on the "Conditions of Life" in his book on "Variations[3] of Animals and Plants, &c.," after discussing the different possible causes of variation, sums up as follows: "We may conclude that the constitution of the individual is of far higher importance than the conditions to which it has been exposed. It is a general rule that conspicuous variations occur rarely, and in one individual alone out of millions. As the most strongly marked variations graduate insensibly into the most trifling, we are led by the same train of thought to attribute such slight variations much more to innate differences of constitution, however caused, than to the definite action of the surrounding conditions." And lastly, I shall assume the accordant doctrine, which is now held generally by most biologists, though apparently ignored by some and explicitly rejected by a few, that characters, commonly called "acquired," which depend on somatic modifications caused in the individual after birth, or, as some express it, are developed in the parents only under the influence of use and experience, are not developed in descendents in the absence

[2] See Wallace's Darwinism, pp. 461 et seq.

[3] See chapter xxii. of this work.

of similar influences, although the potentiality of such development is organically inherent in the innately variable germ-plasm.

I need hardly say that it is not my intention to attempt a discussion of the doctrines that conflict with these assumptions. Believing, however, (1) that the part played by non-transmissible acquirements has been, and is, of paramount importance to the progress of man in his never-ending attempts to make conquest of natural forces, or to destroy the effects of his own mistakes; (2) that the present biological evolution of man is to a predominant extent limited to a struggle against disease; (3) that there is no evidence to show that human mental capacity on the whole has materially increased within, at least, historical times; and (4) that the theory of natural selection according to Darwin, supplemented, as I have indicated, by that of Weismann, is the best explanation available of the development and inheritance of cerebro-mental functions, I cannot avoid certain incidental references to the teaching and methods of some who hold widely different views. And here I desire it to be understood, once for all, that in my incidental references to Mendelian views I am not calling in question such facts as have been established by this school of workers. I protest here mainly against the Mendelian hypothesis of "unit-segregation" being termed a "discovery," and employed as a fact in argument.

NECESSITY OF CLEAR CONCEPTIONS AS TO HEREDITY AND DEFINITE USE OF TERMS, ILLUSTRATED BY THREE TOPICS.

The topics of "criminology," mental defect, and "eugenics" may serve to illustrate the necessity of clear conceptions and a definite use of terms when we speak of the difference between "innate" and "acquired" characters. The *first* topic, that of so-called "criminology," demands, for the purpose in view, but a brief notice. Law-breaking, or criminality, is no unity. There are no special qualities, physical or mental, common to all criminals. The only important link between the study of crime and that of heredity is the fact that a considerably larger minority of persons with clearly appreciable mental defect, apparently of congenital nature, is found among convicted criminals than in the population at large. The notable number of mentally defective persons among criminals who are sentenced to penal servitude, and are usually the perpetrators of serious crime, impressed me at the outset of my prison work. Though it is difficult, and often impossible, to obtain an adequate history of the early life of these men, it is practicable, from inquiry and from study of the men themselves, to assert with much confidence that a significant proportion of them are of primarily defective mental capacity, or, as the old legal phrase has it, are "a nativitate mente capti." This conclusion is arrived at, independently of their criminality, from positive indications of mental defect observed in their conduct, and, in some cases, from certain concomitant physical characters. This class of mental defectives includes criminals of many kinds. They are, it seems, innately unable to acquire the complex characters which are essential to the average man, and, according to their surroundings, they follow the path of least resistance. This path is more often than not, but by no means always, the path of unsocial or criminal action. These statements about criminals will appear to be dogmatic, but are, I think, capable of proof. I have reason for believing that the report of an extensive inquiry now nearing completion, which has been carried out by the medical officers of our convict prisons, will go far, in itself, towards their justification. This matter, indeed, is of importance, not because any serious students of this subject now accept the doctrine of hereditary criminality or consider the so-called science of "criminology" as aught else than a mass of imperfect and unclassified observations linked together by untested hypothesis, but because this doctrine, so much emphasised by Lombroso, Max Nordau, and others, of the hereditary nature of crime, or, in other words, of the criminal being a racial "degenerate," is still very dominant over the public mind. It is widely popularised at the risk of producing practical effects, not only by writers of fiction, but also by philanthropists, journalists, and public speakers on social questions. It is apparently assumed as true by at least one prominent writer on biology;[4] while another disciple of Mendel proclaims that an "anarchist" is a germinal "mutation," which will breed true like other "sports." As all know, there is in this context much loose talk about so-called "degeneracy." This word "degeneracy" is mostly used without regard to its only legitimate meaning, which, of course, denotes *racial* change; and abounds in many works which are popularly mistaken for scientific studies. It follows from these remarks that it is unnecessary to discuss any question of relation between this doctrine and the scientific problems of the evolution and inheritance of mental characters, for no really rational hypothesis of hereditary criminality has been even formulated.

CAUSATION OF CONGENITAL MENTAL DEFECT.

My *second* illustrative topic is that of the causation of such mental defect as is usually called "congenital." The evidence concerning this matter, which was abundantly tendered by medical and other witnesses to the Royal Commission on the Control of the Feeble-minded, of which I was a member, evinced a frequent confusion or absence of thought on the meaning and right use of the word "heredity." This evidence, some of it being of great value, was accepted, after some discussion, by the Commissioners, although the question of causation had not been explicitly referred to them. It was therefore dealt with to some extent in the report, although the constitution of this commission, in common with that of some others on cognate subjects, was not adapted to deal exhaustively with questions involving scientific, and especially biological, problems in relation to human beings. Some of the witnesses held that the forms of mental defect under consideration were largely inherited, while at the same time they attributed their occurrence in offspring to quite different characters in the parent, such as alcoholism, tuberculosis, malnutrition, or other disorders incident on slum conditions or unhealthy surroundings generally. Others considered all cases of mental defect as "hereditary" when there was any history of insanity or "nervous disorder" of almost any kind among the more or less immediate ancestors. Others, again, used the word "heredity" in the strict sense, and applied it only to characters which appear to be organically innate or "germinal," and are of like nature with ancestral traits. So apparent, indeed, even to the non-medical members of the Commission were the confusion of thought and the inaccurate language which pervaded much of the evidence on this head, that the report expressed the unanimous opinion that the important subject of heredity should be especially emphasised in the medical curriculum.

It is impossible to discuss here the complicated question of the causation of congenital mental defect. My main object in speaking of it is, as I have said, to illustrate the importance of forming clear conceptions concerning heredity, and of carefully defining the terms we use. It may be said, however, that although there are no adequate statistics showing the comparative numbers of such defectives engendered by normal and defective parents respectively, there is a wide consensus of opinion, based on much accurate observation, that a lineal sequence of defectives is sufficiently frequent to render it highly probable that this condition is in a large number of instances truly innate and thus transmissible, or, in other words, that it is thus dependent on a germinal variation of the brain. Those who accept, as most biologists ostensibly accept, the conclusion that characters developed by parents after birth in response to environmental influences are not transmitted to offspring as innate characters not requiring such influences for their development, must reject wholly the doctrine that bad nutrition, or other evil conditions or diseases contracted by the parents, can appear in the offspring in the form of such abnormalities of the brain as must subsist in all, as it is known to subsist in many, of the cases of mental defect we are now considering. They will hold, as a more likely hypothesis, that such mental defect, especially in the absence of any injury to the brain of the offspring during fœtal life or at birth, is, at least in most cases, a spontaneous variation, probably in the direction of some ancestral condition, and tending to be

[4] Professor Bateson, in his book on Mendel's Principles of Heredity, p. 306, writes as follows, after having stated on a previous page that in "the pre-Mendelian period, the expression 'genetic' had no definite meaning": "Genetic knowledge" (by which, it may fairly be presumed, is meant the doctrine of heredity according to the Mendelian hypothesis of unit-segregation) "must certainly lead to new conceptions of justice, and it is by no means impossible that in the light of such knowledge public opinion will welcome measures likely to do more for the extinction of the criminal and degenerate than has been accomplished by ages of penal enactment."

transmitted to descendants. Those, on the other hand, who attribute such mental defect to various modifications acquired by the parents during their lifetime must not only believe in a multiplicity of causes for a similar effect, but must also hold the view of the modification of the germ-plasm by environmental influences to such a wide extent as would involve the necessary inference of the rapid degeneration and ultimate destruction of the race as a whole. I cannot now pursue this interesting subject, and will but express my opinion that the conclusive answer to this particular question will probably not be given without a more extensive knowledge of facts than is at present available. From all that I have been able to gather from the best authorities on the physical characters of the brain of imbeciles, no absolutely positive statement can yet be made from the anatomical point of view as to how far true retrogression, or how far arrest of fœtal development, can be said to contribute towards the solution of this problem.

EUGENICS.

My *third* topic is that of "eugenics," a subject of present-day interest, both to scientific workers and to the public at large. The main object of human eugenics, according to Sir Francis Galton, the inventor of the term and the originator of the inquiry it embraces, is the discovery "of the amount of change in racial qualities which can reasonably be anticipated," and what can practically be done in the direction of effecting an improvement in such qualities "by selective breeding."[5] I shall refer here to the method of this research only as it concerns the question of the inheritance of *mental* characters. The method generally is to deal measurably and statistically with "faculties" or "characters" that are variously distributed in a large population. If, for instance, the proposition be true, that there is in any nation greater "fertility" of the mentally inferior than of the better and more able "stocks," and if it be assumed that the use of the word "stock" implies that the mental difference referred to is of innate or germinal origin, then it follows that the only remedy would be a possible alteration of the relative fertility of such stocks. Now, without raising here any question as to the definition of the word "fertility," it is apparent that any possible improvement of a stock depends on some assumption that the qualities under consideration are really innate and transmissible. However accurately the calculating apparatus may work in dealing statistically with the material collected for its operations, the practical value of the result attained must rest entirely on the nature of the items of material which are thus operated upon. And the important question then arises: Are such "characters" as, for instance, "ability" or "probity," really indications of "stock" qualities? Are they germinal and transmissible, or acquired? As to "ability," if this term were strictly defined in a certain way the answer might be that it is germinal; if defined in another way, that it is acquired. As to "probity," it seems to me, at least, plain that the reply must be that it is acquired.[6]

Touching the mental and moral characters of man, there is massive evidence which shows that many even of the most importantly adaptive among them are the result of "modifications," developed in each individual under the stimulus of actual use and training alone. Such characters are mainly and clearly traditional; they are handed down by each generation to the next through teaching and example, not through real inheritance; but their constant acquirement by every generation gives them the appearance of naturally inherited qualities. This question should cause all students to pause and consider seriously before they assume that any given character is not only inborn but has also been developed apart from such influences, or in other words, is not an "acquired" or "somatic" modification. These remarks appear to apply also to the utterances of many adherents of the Mendelian school of biologists, who, though widely differing from the biometrical school in respect of fundamental questions of evolution and heredity, seem, in common with their opponents, to consider acquired mental characters, or "modifications," as unimportant; and to class such qualities as they deem at all important with those which are "germinal" and require no external stimulus for their development other than such as is implied in life itself.

I must especially state here that I fully recognise the importance of possible attempts to improve the human race either by limiting or eliminating the bad, or by encouraging the good stock. We may, perhaps, have knowledge enough already to make some practical advance in what has been styled, and by some depreciated, as "negative" eugenics. But we must bring much more biological knowledge and very clear minds to bear upon the subject before attempting any measure in the direction of "positive" eugenics, and especially in that of "selective breeding" on the basis of what we regard as innate mental characters. In connexion with the desirability of limiting the production of mental defectives on the hypothesis—which, although not demonstrated, is regarded as highly probable by most observers—that mental defect is largely innate and transmissible, I would mention the following facts, taken from Dr. Ireland's book on "The Mental Affections of Children," as suggesting reflection on the question of making such a step in the direction of negative eugenics as that of trying to minimise the production of mental defectives. The average mortality, during a certain period, of imbeciles between the ages of 5 and 20 years in two large asylums was at least nine times as great as that of sound-minded young persons at the same period of life in corresponding years. Dr. Ireland adds that in an asylum well known to him, the substitution of a non-resident doctor for a resident medical superintendent was followed by a rise in the death-rate above double. His comment on this implies his opinion that the protection of the lives of imbeciles is an important function of medical art. From one point of view this opinion is right, but from another we are led to reflect how often Nature's method of negative eugenics is effectively antagonised by man. Though imbeciles in asylums are of course incidentally prevented, for the most part, from propagating, infinitely larger numbers of many grades are permitted to bear and beget children from sentiments very similar to those which tend to foster any measures for prolonging the life of all.

The necessity of some clear conceptions of the nature of "innate" and "acquired" characters, as well as of heredity and of the evolutionary process, is now abundantly evident, whether mental or bodily characters be the subject of study. Even though biologists may perhaps agree in the belief of the continuity and a high degree of inviolability of the germ-plasm, in the consequent non-transmissibility of acquired modifications, and in the doctrine of evolution by the action of natural selection on germinal variations alone, they certainly differ as to what characters should be classed as germinal variations or acquired modifications respectively; and such differences are manifestly important. They also notoriously differ as to whether the material for natural selection consists mainly of small and so-called fluctuating variations as necessarily implied in the theory of Darwin and Wallace; or only of "sports": "large," or "discontinuous," or "saltatory" variations, now commonly called "mutations," which are said to be stable from the first, and alone to be of "genetic" value in evolution. This latter hypothesis was long ago opposed to Darwin's theory by the late Mr. St. George Mivart, who held that new species manifest themselves with suddenness and by modifications appearing at once; and, in a more elaborate form, based on "some facts and a hypothesis," is promulgated by mutationists and some Mendelians of the present day, who more than hint that the Darwinian theory of natural selection is largely a superstition. Differing hypotheses are also upheld, by the followers of the Mendelian and Galtonian methods respectively, in connexion with the hereditary transmission of characters: the one school adopting that of the unit-segregation of characters in the germ-plasm, the other those which are known as the laws of "ancestral inheritance" and of "filial regression."

TRANSMISSION OF "EDUCABILITY."

I have said that I have no intention of discussing here the various opinions alluded to. I shall consider, only and briefly, that exposition of biological evolution and heredity in relation to man and his mind which seems to cover fitly

[5] See the "Herbert Spencer" lecture by Sir F. Galton, 1907, Clarendon Press, Oxford. See also "Natural Inheritance," 1889, "Huxley Lecture" (1901), and several papers by the same author in the "Memoirs of the Sociological Society"; also Professor Pearson's "Huxley Lecture" (1903) in vol. iii. of "Biometrika."

[6] I am aware that it may possibly be said that any statistical inquiry resulting in the inference that "probity is inherited" does not necessitate any special theory of heredity; but it seems clear that a definite conception of what the word "inherited" means is necessary in the practical context of this matter of selective breeding, which explicitly concerns the research in question.

the complex facts which present themselves and to be contradicted by none of them: I mean the theory of evolution as set forth by Darwin and by Wallace, and as supplemented by the doctrine of the non-transmissibility (to offspring) of acquired modifications—i.e., modifications developed in the parent after birth under the stimulus of use and experience alone. Darwin himself, as I have said already, taught the grammar of the evolution of mental and moral characters, basing his argument on the existence of the social instinct in man. He formulated, however, no positive theory of heredity, though he saw the need of one; and, assuming the probability of some characters acquired by parents being transmitted as such by immediate inheritance to their offspring, he suggested the hypothesis of pangenesis. In his "Descent of Man," nevertheless, he displays in more than one place some hesitation in accepting his own tentative opinion on this point. Writing of Spencer's hypothesis of the transmutation of experiences of utility, by a process of continued transmission and accumulation, into inherent faculties of moral intuition, he suggests that, if insanity and other morbid mental or moral tendencies connected with cerebral or other bodily states can be transmitted, it is probable that good tendencies are transmitted likewise. "Even the partial transmission of virtuous tendencies," he says, "would be an immense assistance to the primary impulse derived from those social instincts which are the true basis of moral evolution by selection." "Admitting," he says further, "for a moment that virtuous tendencies are inherited, it appears probable that they become first impressed on the mental organisation through habit, instruction, and example continued during several generations in the same family." But he adds, "My chief source of doubt with respect to any such inheritance is that customs, superstitions, and tastes, such as the horror of a Hindoo for 'unclean' food, ought, on the same principle, to be transmitted. I have not met with any evidence in support of the transmission of superstitions, customs, or senseless habits."

The doctrine of the leading biologists of the present day who recognise the truth of the principles of evolution as established by Darwin, and who hold, in substitution of Darwin's supposition of the transmissibility of some acquired characters, that it is "educability," or the organic capacity for making such acquirements, not the acquirements themselves, which is innate and transmitted, seems to form the only synthesis which covers the known facts of heredity, is contradicted by none, and tends, in consequence, to be of further interpretative value. The conclusion is evident, in the application of this doctrine to mental development, that "the mind of the human *adult* is mainly a social product, and can be understood only in relation to the special environment in which it develops, and with which it is in perpetual interaction." "The recognition of this truth," said Sir Ray Lankester in his Presidential Address to the British Association, "seems to be the most important advance in psychology in recent years."[7] It follows that the innate and transmissible factor of the mind of man is the organic potentiality for making mental acquirements, which, in man, has been highly evolved by natural selection. In this context I would make special reference to several pages which follow on the quotation from the address I have just mentioned. I can, however, quote now but one passage, which very closely bears on the relation of scientific psychology to the theory of the origin of structural characters by natural selection. "In discussing," says the author in a communication to the Société de Biologie of Paris in 1899, "the significance of the great increase in the size of the cerebral hemispheres in recent as compared with Eocene mammals, and in Man as compared with apes, I came to the conclusion that the power of building up appropriate cerebral mechanism in response to individual experience, or what may be called 'educability,' is the quality which characterises the larger cerebrum, and is that which has led to its selection, survival, and further increase in volume. The character which we describe as educability can be transmitted; it is a congenital character. But the results of education *cannot* be transmitted. In each generation they have to be acquired afresh. On the other hand, the nerve mechanisms of *instinct* are transmitted, and owe their inferiority as compared with the results of education to the very fact that they are not acquired by the individual in relation to his particular needs. To a large extent the two brain mechanisms, the instinctive and the 'individually acquired,' are in opposition to one another. The loss of instinct is what permits and necessitates the education of the receptive brain."

A very full and detailed exposition of this most important truth, with its numerous bearings, is given by Dr. Reid in the remarkable book to which I have already referred.[8] In that part of it which treats of the development of mind he maintains, by an array of evidence, that the great peculiarity of the human being as compared with other animals is that the most distinctive characters of his mind arise much less, as he expresses it, under the stimulus of nutriment alone, and much more under that of use and experience; that his instincts are fewer, while his capacity for making acquirements is infinitely greater and more variable; and that since "nature" has rendered man transcendently responsive to the "nurture" of use and experience, the question, so often asked, whether nature or nurture plays the most important part in the development of the human mind, has really but little meaning. "Capacity" or "ability" for making mental acquirements is innate and transmissible; it resides in various degrees in the immense brain of man; but for its development in special directions it requires the appropriate stimulus. The physical and mental maturity of the normal human being thus depends very largely on acquirements, the making of which is as essentially a part of adult development as is the growth of head and limbs of fœtal development. In terms of structure we may regard the innate mental characters as depending on cerebral mechanisms which are germinal, inherently active, and transmissible; and the acquired characters as depending on mechanisms developed after birth in the still organisable substance of the brain, but as developed only under the influence of the environment, as somatic modifications, not transmissible.

In a recent and practical text-book on "Mental Deficiency,"[9] the following expression of the difference in question is somewhat similar in effect to those which I have mentioned. "The development of mind," says the author, Dr. Tredgold, "takes place in consequence of two influences: spontaneously, or an inherent tendency of the brain-cells to develop, and stimulation of these cells by external impressions. The brain of the healthy child is capable of utilising and responding to any surroundings, within ordinary limits, in which it may be placed. The defective mind is lacking in this power. One of its chief characteristics is a want of what may be termed 'mental aggressiveness.'" It seems to me that the author here implies that what he terms "mental aggressiveness" is innate, and that the power of response to the environment is in direct proportion to the development of this quality.

If, then, it should be proved that imbecility is largely transmissible and innate, it may be thus far regarded as a possible reversion to an ancestral condition, though the reversion is, of course, not complete. Stated by Dr. Reid, in terms of mind, the defect of the imbecile is that he cannot learn; he lacks, or is greatly deficient in, the power of making mental acquirements; he is not able, as the normal individual is, to profit from experience; he has little or no memory, a mental quality depending on a late stage of cerebral evolution, and constituting the primary factor in the power of making mental acquirements. While he has lost the power of profiting by experience he has regained no part of the lost power of being guided by instinct. Therefore he is comparatively helpless as compared to the lower animal. But the instincts which normal beings possess, such as, for instance, the sexual, may appear unduly prominent in him, for he cannot learn to control them.

IMPORTANCE OF EDUCATION.

These general considerations on the subject of "innate" and "acquired" characters afford a good illustration of the different conclusions which may be arrived at on this and other matters, according to the different views held by inquirers concerning evolution and heredity, or to the different methods of investigation followed. Some biologists, holding certain principles of heredity, and basing their

[7] See Lankester's Kingdom of Man, p. 122 (Constable, 1907).

[8] The Laws of Heredity, by Archdall Reid, M.B., F.R.S.E. Methuen and Co., 1910.

[9] Mental Deficiency (Amentia), by Dr. Tredgold. London: Baillière, Tindall, and Cox. 1908.

inferences mainly on facts statistically arranged, appear to regard most moral and intellectual characters as instincts, and, as such, inherited. In common, apparently, with the otherwise widely differing school known as Mendelian, these regard the body and mind of an adult human being as consisting of innate and acquired characters, and hold that all the important mental characters are germinal and transmissible, and can therefore be made, by selective breeding, factors in true evolution. It is needless to dwell on the wide gulf which practically separates this view from that of those who believe that the innate mental characters of man, though of immense racial importance, and possessing great variability, are few in comparison with those which have been acquired and are demonstrably not transmitted; that most characters of the highest social importance are only traditionally handed down; and that even the achievement of civilisation by a savage race implies no necessity of germinal alteration. Reflection on these problems leads, I think, to the probable conclusion that man's mind, like his body, is certainly both born and made, but that his adult mind is much more made than born. The slow evolution of the brain and its functions through the natural selection of adaptive variations has produced the enormous inborn power of making mental acquirements that is now the organic heritage of man. Thus, among innumerable acquirements, he has gained the unique facility of recording his discoveries and thoughts by the instruments of speech and letters, and thus he has created a traditional wealth of knowledge—a veritable and priceless heritage of a wholly different kind "treasured up on purpose to a life beyond life."[10]

The manifest bearing of these truths on the principles of education indicates that the right object of education is to fit human beings for their social existence, to make them good citizens, and to afford those with gifts above the average the opportunity of developing them. Education modifies and greatly makes the individual, but it does not affect the biological evolution of the race. It has been strikingly written by an eminent Darwinian—Sir William Thiselton-Dyer—that, "there is no more pathetic feature in human experience than to see descend into the grave, to pass away for ever, all those endowments with which genius and labour have adorned individual human beings. The cunning hand of the artist, the entrancing skill of the musician, the song of the poet, the eloquence of the orator, all perish with their possessors, and 'leave not a wrack behind.' Were it otherwise the toil of education would have been mitigated, and there would have been no bounds to the mental acquirements of the race. But when our first parents tasted of the tree of knowledge, the tree of life was denied them, and knowledge perishes with its possessor."[11] It is perhaps from reflections such as these that some men eagerly welcome any biological teaching which tends to minimise the immense importance to man of his acquired character, or to justify in any degree the belief that such characters are naturally transmitted from parents to offspring. But Tennyson's words still ring true for us. Though "the individual withers, the world *is* more and more"; though nature seems "careless of the single life," she is very "careful of the type": and we may still join in the poet's youthful and stirring cheer to—

> "Men our brothers, men the workers, ever reaping something new;
> That which they have done but earnest of the things that they shall do."

Since man invented speech and letters the results of his acquirements have been immortalised. The age-long lessons and records of his thoughts and achievements have alone directed and still increasingly illuminate his onward march. But were it possible for these lights to fail, were all the knowledge and civilisation acquired by the human race to perish, "the mind's great age" would hardly "begin anew," for the race itself in the struggle for life would probably cease to be.

MENTAL ACQUIREMENTS NOT TRANSMITTED.

Small as is the knowledge we possess as yet of the beginning, limitations, qualities, and operations of the mind, there may be much for us to learn from further observation of various diseased states of the brain, as well as from continued use of the methods of experimental psychology and from the investigation of hypnotic phenomena, so ably advocated by Dr. Savage in last year's Harveian Oration. But we know a little more perhaps about the evolution and development of the body, including that of the brain. By those who incline to that view of heredity which seems to make the nearest approach to truth, the germinal factor in this organ will be regarded as the substratum and condition of all mental development, endlessly transmissible, infinitely variable, and richly endowed with capacity for making acquirements; but as standing, nevertheless, in absolute need of external influences in order to develop most of the distinctive and special characters which we recognise as intellectual and moral. With the germ-plasm, as a whole, in all its variability and liability to death and injury, the mind's organ is approximately inviolable to vital and transmissible change from the action of the environment, and no mental acquirements or modifications developed during an individual life-time are transmitted to descendants. The germ may die, but living it will not surrender its essential qualities to the action of external forces. The spontaneous variability of the germ appears to be a basal conception, necessary at present to all evolutionists, for the origin of so-called "genetic mutations" is confessedly as mysterious and "spontaneous" as that of the fluctuating variations, among which, according to the theory of Darwin, natural selection mainly works in the production of fixed species. The origin of mutations, indeed, would seem to be the more mysterious, since these are said to be "genetic" or fixed from the start, and thus might as well be described as "special creations." Further, the belief in the great resistance of the germ-plasm to transmissible organic change from external action seems to be necessary for any explanation of heredity whatever. The cause of normal hereditary transmission is surely at least as mysterious as that of any variations, small or great, fluctuating or discontinuous, unless the well-nigh demonstrable doctrine of the continuity and approximate inviolability of the germ-plasm be fully accepted. Without the aid of this pregnant hypothesis all biologists must confess that the simple but weighty question asked by Harvey, "How does like ever generate like?" is still wholly unanswered.

OBSERVATIONS OF HARVEY ON HEREDITY.

That some of the problems I have glanced at were even vividly present to Harvey's mind appears from the following quotation from Willis's translation of the work on Generation. The question of hereditary transmission and of reversion to ancestral types is raised when he writes: "In reference to the subject of family likeness we may be permitted to inquire as to the reason why the offspring should at one time bear a strong resemblance to the father, at another to the mother, and at a third to progenitors, both paternal and maternal, further removed, particularly in cases where at one bout and at the same moment several ova are fecundated. And this, too, is a remarkable fact that virtues and vices, marks and moles, and even particular disposition to disease, are transmitted by parents to their offspring, and that while *some inherit in this way all do not.* Numerous qualities, in fact, both of mind and body, are derived by hereditary descent." Again, he says: "I have frequently wondered how it should happen that the offspring, mixed in so many particulars of its structure or constitution, with the stamp of both parents so obviously upon it in so many parts, should still escape all mixture in the organs of generation; that it should so uniformly prove either male or female, so very rarely an hermaphrodite." Here the modern problem of the alternative development of certain characters is apparently suggested.

In the Exercise "Of the Order of the Parts According to Aristotle," and in a context which need not be specified here, Harvey quotes some of Aristotle's words as follows: "..... *as then man's growth being complete and mind having been superadded* .....," and he adds: "In other words (and as I interpret the passage), adult man having acquired sense and prudence." Is there not an inkling here of the great question regarding "inherited" and "acquired" characters? Again, in the next Exercise, Harvey writes: "The proportion of the body to the extremities in children after their birth continues excessive until they begin to stand and run." May he not imply here the

[10] See in this connexion A. R. Wallace on "Evolution and Character," Fortnightly Review, January, 1908; Archdall Reid, "The Present Evolution of Man," 1896; and "Laws of Heredity," 1910. See also Basil Thomson, "The Fijians" (Introduction on "Decay of Custom"), 1908.

[11] See Edinburgh Review for October, 1902—Article on "Darwinism."

necessity of use in the development of certain physical characters which otherwise would not appear? And, further on, he says: "Man comes into the world naked and unarmed, as if Nature had destined him for a social creature and ordained him to live under equitable laws and in peace, as if she had desired that he should be guided by reason rather than be driven by force; therefore did she endow him with understanding and furnish him with hands that he might himself contrive what was necessary to his clothing and protection."

Once more Harvey profoundly reflects: "The vegetative faculty of parents engenders in conformity with determinate laws in the same way as light things rise and heavy things descend, and the semen arrives at the form of the fœtus as the spider weaves her web, as birds build nests, or as bees and ants construct dwellings and lay up stores for future wants, all of which is done naturally and from a connate genius or disposition, by no means from forecast, instruction, or reason. That which in us is the principle or cause of artificial operations and is called art, intellect, or foresight in the natural operations of lower animals is nature, which is αὐτοδίδακτος, instilled by no one: what in them is innate or connate is with us acquired." Here Harvey's thought verily seems to have been searching for some distinction between the nature and mode of development of innate and acquired characters, and dwelling on the immense importance to man of what we have regarded as his acquirements, the mechanism of which he cannot transmit to his offspring.

MAN MUST "CULTIVATE HIS GARDEN."

We may hold, then, that by the achievements of his mighty brain, with its inborn "educability," "memory," or ability to make acquirements in response to his environment, man has entered into his kingdom. This ability, of infinite variety though it is in different individuals, is normally immense, and its organic mechanism marks man's brain alone. At birth the individual mind is equipped in full measure with that capacity of development which is its lot. This capacity is shown at its highest power in early life, though its activity endures for years. But the direction such development takes depends mainly or wholly upon influences or stimuli from the external world, and what we recognise and speak of as the intellectual and moral faculties are the immediate products of external influences which actuate the potencies of each individual brain. We may fancifully figure man's mind at birth as a many-chambered mansion of noble plan and wondrous structure, awaiting the majority of its owner for its full utility and final adornment. More justly, perhaps, for the purpose of illustrating these reflections, we may liken it to a garden endowed with bountiful soil, the produce of which depends on the quality and the nurture of the plants grown within it. And the lesson is, man must still "cultivate his garden" and cultivate it aright. Should he neglect it, and should he not then inevitably perish (for it is his only resource), it would revert to its earlier and wilder condition under the cessation of selection, and the forces of circumambient Nature. In his book—the "Kingdom of Man"—from which I have already quoted, Sir Ray Lankester says: "Civilised man is a successful rebel against Nature, who by every step forward renders himself liable to greater penalties. His only hope is to control the sources of these dangers." Now if it be admitted, as Dr. Reid has so fully shown, that man's evolution to-day is mainly against disease and other destructive agencies, that there is no evidence in favour of any marked germinal improvement, within at least historic or even much earlier times, of man's mental capacity, and that his enormously increased and increasing powers of adapting himself to Nature and of controlling her forces, or, in other words, his advancing civilisation, are mainly the products of his acquirements, it follows that in all our attempts to promote "eugenics," and still more (because the object is immediately practicable) to improve the education of our youth so as to adapt them to the inexorable exigencies of their time, we must duly recognise that the progress and the efficiency of man, whether destined to be permanent or not, are by no means questions of breeding alone. "Education," says Huxley, "is the instruction of the intellect in the laws of Nature, under which name I include, not merely things and their forces, but men and their ways, and the fashioning of the affections and the will into an earnest desire to move in harmony with those laws." There is truth, too, in Huxley's saying "that the stupidity," and I might add, the superstitions, observable among the so-called "educated" classes of to-day "is largely caused by the repressive action on natural intellectual appetites of a Procrustean system of artificial teaching." In these classes especially abound the Christian Scientists, telepathists, and other spiritualists of many colours, as well as anti-vivisectionists, anti-vaccinationists, and divers other persons whose only bond of union seems to be impatience or hatred of the scientific method of thought. One high duty, at least, of men whose life-work is to "search out the secrets of Nature" appears to be plain: To strive for the reform of education according to the dictates of science—*Hic labor, hoc opus est.* Even though all aims at the artificial improvement of the human germ be disappointed, we can truly and fruitfully educate our race by insisting on a thorough and enlightened study of Nature and her laws. We know at least that the unity of the universe is a scientific fact. "We are governed by physical laws which it is our duty, as scholars of Nature, to investigate; and by moral laws which it is our duty, as citizens of Nature, to obey."[12]

We are not without object-lessons of what intelligently directed education can achieve for a whole people even in one generation. To no germinal change can possibly be ascribed the recent development and marvellous transfiguration of Japan. Doubtless, indeed, we may sing with the matchless poet of humanity who was Harvey's contemporary, "What a piece of work is Man, how noble in reason, how infinite in faculty! In form and moving, how express and admirable; in apprehension how like a god!" But we can also endorse his further reflection:—

> "Sure He that made us with such large discourse,
> Looking before and after, gave us not
> That capability and god-like reason
> To fust in us unused."

Remarks
ON
THE ROYAL NAVY MEDICAL SERVICE.

Delivered at the Distribution of Prizes to Naval Medical Officers at Haslar Hospital on Oct. 7th, 1910,

BY ADMIRAL SIR JOHN DURNFORD, K.C.B.

GENTLEMEN,—I understand that on this occasion I am expected to say a few words, and in the first place, on behalf of those who have been good enough to attend this prize distribution and in my own name, let me offer our congratulations to the medical officers who have now successfully qualified for commissions in His Majesty's Navy. I can assure them of the high esteem in which the Naval Medical branch is held by the whole Service and also by those who control it. You have at a considerable pecuniary outlay selected a profession of great importance, and a responsibility devolves on you which is not surpassed and rarely equalled in any other calling. You will have to depend mainly on your own judgment and skill, to act promptly, generally without anyone to consult as to the steps to be taken. So far you are circumstanced as many of your professional brethren who practise on shore. But you, gentlemen, have undertaken a further responsibility, that of accepting a definite share in the defence of the Empire by joining His Majesty's Navy, a profession which is rightly and justly esteemed of incalculable importance, as the safety of the Empire depends on the strength and efficiency of its fleet. It should be your aim throughout your career, by careful study, research, and practice, to keep abreast of the times in your profession, and to maintain the *personnel* of the fleet in the highest state of physical fitness reasonably possible. You should remember that the prospect of ultimate success will be much greater if the occasional somewhat monotonous periods that occur during peace are spent in preparation for the supreme moment.

I have during my experience found the advice of the

[12] See Winwood Reade's Martyrdom of Man, p. 180.

medical officer of great value in the conduct of the Service. I have always considered him one of my most trusted advisers, and this confidence has never been misplaced. It is desirable that you should pay much attention to the training and advancement of the sick-berth staff on whom much depends. Encourage their attention to the sick, their industry and laudable ambition.

In the presence of so much medical and surgical talent who can better tell you, I find it difficult to offer you professional advice, and would therefore merely say that if you have a special leaning for medicine or for surgery, or any particular branch of either, by all means cultivate it, provided you can do so without interference with your excelling as a general practitioner. This proviso is necessary, for though we welcome a limited number of expert specialists, who devote their whole time to some particular branch, the bulk of the naval medical officers should be constantly working at all available subjects, both in medicine and surgery, as they have cases of all descriptions to deal with, and must be independent of outside expert assistance.

A matter of deep interest to the Naval Medical and Nursing Services, and one of very considerable importance to the nation, is the question of the provision and organisation of these services in peace and also in war, and whether any steps are considered necessary to render them more efficient. In short, whether we are reasonably and satisfactorily ready for emergencies. These questions have been carefully considered by a committee with which I have been connected. Our discussions extended over nine months. Besides sub-committee meetings to elaborate details, we held some 60 sittings and produced a unanimous report. I am glad of this opportunity to say how greatly our deliberations were assisted by officers of the Services and eminent members of the civil medical profession, who in response to requests gave us the benefit of their opinions, the outcome of long and valuable experience. It is not only the oral evidence I allude to, but also the carefully prepared papers and numerous letters received in reply to inquiries.

I should also like to mention the valuable advice afforded by the matron-in-chief of the Army Nursing Service, the senior head sister of the Naval Nursing Service, as well as similar authorities of the highest standing in civil life. Their assistance was of great value in considering H M. Queen Alexandra's Royal Naval Nursing Service, a service of such highly proved use in peace, and one on which a still greater reliance must be placed in war. The help and assistance from the St. John Ambulance authority were also most useful, and I must not forget to include also the Royal Naval Volunteer Reserve. The prompt and ready response from the home hospital authorities in the matter of furnishing information and statistics was of much assistance, and I am glad to express our thanks to the inspectors-general and officers of the hospitals for their share in this matter. Beyond the allusions made in Parliament by the First Lord of the Admiralty, it has not yet been possible to make public the recommendations which have been made, and you will not therefore expect me to go into them. I have good reason to hope, however, that having now been considered by the Admiralty, effect will be given to the committee's recommendations as soon as arrangements can be made.

May I say that though undoubtedly you will find some difficulties in a naval career, there is much to recommend it. You cannot fail to appreciate the associations, your work, and the opportunities and advantages incidental to a life of travel. You may not obtain the reward a Harley-street reputation sometimes carries with it, but if you persevere you will obtain the most satisfactory recognition a naval officer can aspire to: I mean the good opinion of the great silent sea service which, when merit is deserved, communicates its appreciation in no uncertain voice. This and the gratitude of the officers and men you serve, and sailors are not ungrateful, will, I trust, stimulate your zeal in what I hope you will find a satisfactory career.

In conclusion, I desire to express sincere thanks for the kind welcome you have given me. It is always a pleasure to visit this establishment, in which I have taken so great an interest, and I particularly appreciate the opportunity the Director-General and your Inspector-General have afforded me to meet old friends. I am confident Haslar will continue to maintain its high position in the future. You will all, I am sure, join with me in thanking the Commander-in-Chief and Lady Curzon-Howe for their kind attendance here this afternoon; their presence greatly enhances the situation, and is another proof of the kindly and affectionate interest in the *personnel* of the Service which they have always displayed throughout my old friend's distinguished and conspicuous career.

Abstracts
OF
INTRODUCTORY ADDRESSES, ETC.,
DELIVERED AT THE
Opening of the Medical Session 1910–11.

LONDON SCHOOL OF TROPICAL MEDICINE.

INTRODUCTORY ADDRESS ON "SCIENTIFIC OBSERVATION," DELIVERED BY H. A. MIERS, D.SC., F.R.S., PRINCIPAL OF THE UNIVERSITY OF LONDON.

Dr. MIERS, speaking as Principal of the University of London and disclaiming any personal knowledge of tropical medicine, began by pointing out that the coöperation of workers in different subjects, whether by advancing criticism or by direct collaboration, should be one of the most valuable and effective features in a university, and he considered that those working in their professions might more consistently and systematically take their problems to the universities for solution as places where there is, or should be, time and opportunity to carry out researches of which the practical outcome might not be at first evident. He instanced the microscopic study of rocks and metals, which has revolutionised geology and metallurgy, as studies which could not be taken up and pursued successfully in their initial stages by persons engaged in professional duties.

"If, however," he said, "the investigations at the universities are to be carried on by men who are subsequently to be leaders in their profession—and this is much to be desired—it is clear that there is the greatest need for such provision as will enable those who have completed their university course to stay on for one or two years engaged upon this work in the university laboratories before they become absorbed by their professional duties. If we are to maintain a high order of advanced work at the universities, and to supply the professions with men who have learnt to know the meaning and the method of such work while they are still able to learn, nothing can be more useful than scholarships and fellowships for advanced study and research which will enable students to remain for a post-graduate period. In the medical profession I am glad that opportunities are now being provided to an increasing extent; and foremost among these we have to acknowledge the great debt which the profession, and indeed the whole world, owes to Mr. Otto Beit for the noble benefaction which he instituted early in the present year in memory of his brother. I believe that that and similar schemes are destined to play a tremendous part in the intellectual advances and the professional development of our country; the universities in whose schools the Beit Fellows will carry on their researches will also receive a great impulse which will enable them to fulfil more adequately their duty to higher learning and investigation. I venture to hope that the London School of Tropical Medicine, a school whose energies are so largely devoted to special and advanced study, values its connexion with the University of London, and derives real and substantial benefit from an intimate association with the University."

Dr. Miers pointed out in conclusion that in the earlier days of scientific research the telescope and the microscope could be turned upon almost anything in the hope of discovering suggestive objects of inquiry where the trail could be followed into the unknown region, but under present conditions research is more concentrated upon a special line of investigation out of which arises the danger that those whose attention is too much fixed on one thing may fail to perceive others which are equally discernible and equally important. That those who expect too intently any phenomenon may actually see it or hear it though it be not there, he illustrated by the following story. "When the tropical annexe of the Crystal Palace was burnt down a large concourse of people witnessed the conflagration, attracted by the extraordinary spectacle of the streams of

molten glass. It was known that a number of animals, parrots, and monkeys were kept in that annexe and were burnt to death. One ape had escaped to the roof, where it clung for a long time, unable to escape, and was literally roasted to death before the eyes of the agonised spectators, who were not only witnesses of its contortions, but also heard the poor creature's screams. After the conflagration it was found that the object which had excited such interest and compassion was a piece of tarpaulin."

Dr. Miers then pointed out that the same defect belonged not only to the senses, but to the intelligence, as it frequently happened that an acute and eager mind became so obsessed by some idea, distorting the judgment, that the victim of it was led to explain everything in the light of the fixed idea, and to ignore other possibilities. "In fact," he said, "many of the mistakes of investigators are made in this way. Now, I do not venture to suggest that scientific men are often deceived by their senses to see and hear what does not really exist, or be blind and deaf to phenomena that play an important part in their experiments or observations, though I do think quite seriously that this may sometimes occur; but I wish to remind you of the danger that scientific training and experience may quite easily predispose both the senses and the mind to this weakness. So far from being a good training for mental receptivity and alertness of sense, so far from fitting the observer to notice and interpret every trivial detail that may have a significance, the training of scientific observation, both in the laboratory and in the field, unless wisely conducted and corrected, may easily unfit the student for this very purpose. In science, as elsewhere, familiarity may breed contempt for important details. He who is practised in a certain line of observation may, in proportion as his senses and his intelligence become more acute in the appreciation of the events or the objects for which he is watching with expectant attention, become less and less able to appreciate properly anything else. I speak from some experience, for I have noticed both in myself and many of my pupils this failing. A mineralogist like myself, although quick to notice in laboratory experiments on minerals and crystals the slightest indication of the result that he expects, so that he sees things that would not be visible to the untrained observer, and although quick in the field to notice the minutest specks of the mineral for which he is searching, specks which would not be discerned by the unpractised eye, may be in other respects a deplorably unobservant person and fail to see the most obvious things. How far may this be partly the result of cultivating observation of a special sort?"

From this Dr. Miers concluded that the faculty which is cultivated by much of our scientific training and work is not readiness and certainty of observation so much as specialised memory; taken as a whole, he did not think that scientific men are better general observers than other people; indeed, he was inclined to think that the senses of a boy might be better trained to detect minute and unexpected details by the practice of field sports than by the special practice of a laboratory. He concluded this suggestive address by pointing out the minuteness and special character of much of the work in tropical medicine, and by urging that those engaged upon it should exercise imagination in their studies and be ever on the alert to see new developments.

THE POST-GRADUATES' MEDICAL COLLEGE AND POLYCLINIC.

INTRODUCTORY ADDRESS ON THE "TEACHING OF INSANITY TO THE MEDICAL STUDENT AND PRACTITIONER IN RELATION TO THE PREVENTION OF MENTAL DISEASES," DELIVERED BY ROBERT JONES, M.D. LOND., SUPERINTENDENT TO THE CLAYBURY ASYLUM AND LECTURER ON MENTAL DISEASES AT ST. BARTHOLOMEW'S HOSPITAL.

Dr. JONES began by quoting a recently expressed view of the Lunacy Commissioners that the inexperience of medical men as to the requirements of the lunacy certificate is responsible for much danger to the community, as it leads to the presence in that community of uncontrolled and uncared-for mental defectives. With regard to the number of mental defectives among us he gave some very ominous statistics, pointing out that while there are 160,000 certified insane persons in Great Britain and Ireland there are probably nearly as many more showing some intellectual deficiency, while in the last 50 years the estimated population of England and Wales has increased by 83·7 per cent., but the number of persons certified as insane has increased by 255 per cent. Dr. Jones pointed out that many students still divided the diagnosis of mental diseases into raving or frenzied persons and drivelling idiots, but modern science enabled us to obtain much broader and better ideas of clinical types of insanity. Moreover, he said, it is now recognised that the study of psychology must be a necessary preliminary to the study of mental disease, but unfortunately it is a difficult and subtle subject which does not fascinate the average student, especially in England. "The study of psychology," he continued, "and especially of the period of childhood, is therefore superlatively necessary to discover changes in the personality, to interpret the meaning of undue shyness or seclusiveness, to mark changes in the normal instincts, the growth of anti-social tendencies, of abstraction, of fondness for the mythical and the weird, or of modifications in the faculty of attention, for all of these may eventually be revealed in some unexpected psychosis. We meet many examples of these in the cranks, singularities, eccentric and anomalous persons which constitute society; we know of agitators, dreamers, street orators, and so-called conscientious objectors. Some of these are only ill-balanced individuals, often intellectually bright, but with a lack of emotional stability, showing either exhilarated excitement or nervous despondency and apparently without sufficient cause. Others among them are moody and variable, with uncontrolled will power, unstable in purpose, easily persuaded and liable to undue suggestibility. To this class belong the 'ne'er-do-wells,' the moral delinquents, and many of the so-called 'unemployables.' No better description of these can be given than to term them constitutional neuropaths and psychopaths. They are asymmetrical persons with an excess or a diminution of some or all of the mental powers. They are known at petty sessions as habitual law-breakers, hooligans,' street-loafers of both sexes, inebriates, and recidivists; to the Poor-law authorities as pauper casuals or vagrants; and they constitute a large number of the asylum population. There is among them all a loss of moral control and proper mental balance, they are obsessed with a keen desire for immediate gratification at the expense of future benefit, and they are characterised by a complete lack of those altruistic virtues upon which depends the welfare of the State as well as of individuals and families. Last year there were over 200,000 cases of drunkenness dealt with in the various police courts, and there appears to be a steady rise in juvenile delinquency! The proportion of indictable offences was lower 15 years ago, and of non-indictable 50 years ago than to-day! The army of vagrants numbers from 70,000 to 80,000. There are always two millions of paupers in the United Kingdom, averaging 20 per 1000, and this not including lunatics in asylums (of which there are over 130,000 in England and Wales), casual paupers, and vagrants. The cost of this burden is a bar to national progress. The total cost of maintaining our insane population is over 3½ millions, and this not including the cost of the inspecting officials with their staff. The cost of paupers is over 17 millions a year. In 1856–57 the cost of pauperism in Poor-law institutions was £16 per head. In 1906–07 it had risen to £29 per head—an increase of 76 per cent. Excluding the cost of the paid justiciary, we pay a million a year for our inebriate reformatories, our local and convict prisons, truant and industrial schools. Add to this the annual cost of our criminal population, including the net cost of the police, which is over 5½ millions, and we have a total of 6½ millions, annually spent upon our law-breakers, many of whom, as stated, are mental defectives. Surely a case is made out for investigating psychologically and sociologically the causes of mental disorders which are correctly defined as the 'bankruptcy of reason,' being the most melancholy and grievous of human afflictions, and also a blot upon our civilisation."

Dr. Jones proceeded to consider the reasons for believing that physical betterment is also an intellectual gain, and deplored the occurrence amongst us of reckless and unsuitable marriages and the general blindness to the evil results of alcoholism and sexual laxity. But he admitted that one of the results of the progress of civilisation must be a multiplicity of mental defectives, inasmuch as when life increases

in complexity there will be an increased liability to breakdown on the part of nervous and mental machinery. The responsibility of the medical man was therefore a grave and growing one in relation to mental defect; "he must be able to understand men, matters, and things," and be ready to give opinions based upon an intimate acquaintance with biological laws and the principles of heredity. The study of sociology he considered to be as necessary to the study of mental diseases as that of physiology is to the pathologist. "One of the chief reasons," he said, "why the medical student and practitioner should be familiar with these ancillary studies is that mental defect is best and most successfully treated in its early stages, and its recognition in this stage becomes therefore of superlative importance. The earlier that cases of mental disorder come under treatment the higher is the percentage of recovery, and the chances of recovery diminish progressively and considerably as the time before commencing treatment increases in duration. The successful treatment of all nervous and mental disorders means attacking them in the incipient stages; the stages of insomnia, of distracted attention, of sleeplessness, of reverie, or of capricious appetite. Gross mental decadence is associated with great neuronal changes, and analogy supports the belief that functional disturbances are attended by slight neuronal changes. It is therefore within the limits of possibility that these may be initiated by mental causes, and as cells are composed of granules of chemical substances which are not themselves alive, but whose activity determines the direction and arrangement of life processes, so the medical man, by a timely suggestion or by duly considered advice, may cause a change to occur in the working units of the cortical cells, thus arresting disease and opening the storehouses of accumulated energy, diverting their forces along normal channels. ..... I have shown how important is the study of brain functions and how these concern the biologist, the chemist, the physiologist, and pathologist, and I have enumerated the sciences which assist in the elucidation of mental disorders. To enable the student to grasp this difficult study, it is generally agreed that the different forms of insanity should be described in a systematic course and each lecture alternated with clinical pictures, illustrative of the theoretical course. The student should be encouraged to come into actual contact with cases by filling up and signing certificates and making himself familiar with the different forms for receiving and detaining cases of insanity whilst under treatment; cases such as those which come up for re-certification, and recent admissions, and he should also be permitted to watch the treatment, medical and moral, of actual cases. The course should be interrupted by microscopic and gross pathological demonstrations of diseased findings of the brain and other organs, and these contrasted with the normal state."

Dr. Jones concluded a serious and practical address by outlining what is being done in the different divisions of the United Kingdom for the prevention and treatment of mental disease. In Scotland he said that psychiatry has been more widely recognised than in any other part of the three kingdoms; in Ireland the teaching was mainly clinical; while in England lectureships were attached to the various medical schools and attendance at these and in the asylums is compulsory. But he pointed out that there is no special recognition of mental disease as a subject worthy of a diploma by the examining bodies.

THE WEST LONDON POST-GRADUATE COLLEGE.

INTRODUCTORY ADDRESS ON "SPECIALISM IN MEDICINE," DELIVERED BY DONALD W. C. HOOD, M.D. CANTAB., F.R.C.P. LOND., CONSULTING PHYSICIAN TO THE WEST LONDON HOSPITAL.

Dr. HOOD, after expressing on behalf of everyone present their deep regret at the death of Mr. C. B. Keetley, proceeded to point out in incontrovertible terms the necessity which nowadays exists for post-graduate teaching, alluding at the same time to the fact that not only the taught but the teachers obtained the greatest possible benefit from such courses of demonstrations as were given in the wards of the West London Hospital.

"We often," he said, "have with us those who come from all quarters of the globe, and they bring information and experience of those various tropical diseases with which we physicians are but poorly acquainted. Personally I shall always owe a debt of gratitude to many who have been my companions in my visits to the hospital, and who have so often aided my investigations by bringing their special knowledge to our mutual benefit. Abroad in various climes the practitioner is in daily touch with affections of the blood, liver, or spleen but rarely met with here, and thus in many instances of abnormal symptoms or irregular course of disease we may, by a comparative study, obtain a better insight into the disease process, and possibly we may be able to bridge over the gap or supply that missing link which has been wanting, and which may enable us to make a correct diagnosis, otherwise impossible. The far-reaching effect of malaria conditions with its often perplexing sequelæ may be of daily occurrence in the life of many a graduate, and may permit his making a certain diagnosis which to those less experienced is but a guess."

At this point Dr. Hood quoted Huxley's apprehension lest science should be crushed by the weight of the gifts which she demanded from nature. There was a time, said Huxley, when men of science would aspire to the possession of an all-round acquaintance with natural history, but nowadays specialism is the leading characteristic of science and is becoming more and more embarrassing. What Huxley said 20 years ago of natural science as a whole Dr. Hood found to hold true now of medicine. "One of the most remarkable changes," he said, "which has taken place in medicine both with regard to its scientific and practical side has been the enormous increase in specialisation. It is worthy of a moment's thought and reflection as to whether this is all 'real gold,' and whether the extreme specialisation of matters connected with pure medicine, as it is called, is of benefit to the common weal. Extreme specialisation in medicine is a growth of about the last 25 years, and attention may be said to have been called to the fact at that time in an article by the late Morell Mackenzie which will be found in the *Fortnightly Review* for 1885. ..... There can be no doubt that some of our principal centres of medical education were slow in recognising the importance of providing their students with the means and opportunity for acquiring special information and dexterity in the use of special instruments for research and inquiry. It is only common sense that with the enormous increase in knowledge of both surgery and medicine the ordinary practitioner, whether he be surgeon, physician, or engaged in general medicine, cannot be armed at all points. Specialism properly regulated is a necessary corollary to increased, and rapidly increasing, knowledge of every branch of professional life. We all recognise the obvious truth, and our hospitals one and all maintain the principle in forming those special departments which add so vastly to their general utility, and which, as I have already remarked, you will do wisely in following the practice and technique. But there is a material difference in connexion with the special department of a hospital with its carefully-selected professors, and that of specialism as considered by a large proportion of the public. In hospital the special department is fed, maintained by skilled—if I may use the word—purveyors. There would be, I am afraid, a sad miscarriage of good if the selection of appropriate cases were left entirely in the hands of a hospital porter. Those of us who have had charge of wards appreciate to the full the advantages which result from our being able at any moment of day or night to call upon one of our colleagues who may have made special study of any case in which the complicated, unusual, anomalous symptoms are difficult of interpretation—cases in which some special symptom or congeries of symptoms lead us to wish for more detailed knowledge than we ourselves possess. The same holds good in our private work, and we are all grateful for those who frequently place at our disposal that special, peculiar knowledge which may enable us to substantiate our diagnosis, throw more light on the conflicting testimony of physical signs and symptoms, and so lead us to a more successful treatment of the sufferer we are called upon to advise. The seed of specialism is rich and good, and if only sown on appropriate soil must bear fruit a hundred-fold, and a bounteous harvest will follow in due course if only specialism be regulated by those who, by reason of their knowledge, are able to appreciate its advantages and limitations."

Dr. Hood proceeded to demonstrate that the abuses of specialism came from the misunderstanding of the public of

the limitations of medicine and their apparent desire to be treated by the charlatan rather than by the physician. He ridiculed in vigorous language certain popular crazes in therapeutics, and quoted the late Sir William Gull as one who never felt himself sufficiently well informed in general medical knowledge to become a specialist. The public, said Dr. Hood, took a very different view from Gull, considering that it is essential to their proper treatment that a limited and often prejudiced view should be taken of their symptoms, in proof of which he gave a typical sketch of the behaviour of a patient with Bright's disease who flies from neurologist to dermatologist, from dermatologist to ophthalmologist, and so on, frequently failing to consult the man who has made diseases of the kidneys his particular study. He closed his interesting address by saying: "Ill-regulated specialism, then, must always lead to the danger of routine treatment, and no better example could be cited than that of the treatment of disease of the heart. I know no organ which has been so unkindly dealt with. Whatever the character or form of disease, whether valve, muscle, fibrous tissue, as in pericardium, or nerve, or functional weakness, whether suffering from toxic conditions as seen with tobacco or influenza, whether showing signs of weakened, failing circulation as in angina, one and all they have been subjected to the same routine course. Why, I ask, do our heart cases do so well in hospital? Mainly from the fact that in treatment we use common-sense principles, looking upon rest in bed as being our sheet-anchor in a vast proportion of cases, and we do not send our patients to Nauheim. 'Has not rest been tried?' said one of our most distinguished physicians to a patient suffering from mitral disease, who had been subjected to every special form of treatment minus the one most essential and necessary. The more deeply we probe into the recesses of the human economy the wider our knowledge and scope of medicine, the more we shall be impressed by the fact that a healthy specialism can only be grafted on to some one or other form of the parent stock, that being clinical medicine. Specialism of a narrow order must invariably lead to faulty diagnosis and therefore faulty treatment. It does much to promote that evil we all so much deplore, the growth and vigour of all sorts and kinds of unqualified irregular practice. We may not at the moment have a Cagliostro in our midst, but there are hundreds who run that eclectic practitioner, that profound student of human credulity, very close."

THE WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

PRESIDENTIAL ADDRESS ON "SPECIALISTS AND SPECIALISM," DELIVERED AT THE COMMENCEMENT OF THE SESSION BY PHINEAS S. ABRAHAM, M.D. DUB., F.R.C.S. IREL., DERMATOLOGIST TO THE WEST LONDON HOSPITAL, AND LECTURER ON DISEASES OF THE SKIN TO THE POST-GRADUATE COLLEGE.

[Dr. ABRAHAM, after expressing his high appreciation of the great honour which his election as President of the society had conferred upon him, said that not many years ago specialists and specialisms in the medical profession were not held in very high esteem in this country. Continuing, he said:—]

I think I am not far wrong in saying that until some 40 years ago most hospital surgeons considered themselves competent to perform any and every operation upon any and every organ of the body, and that every physician thought himself able to treat any and every possible disease. But science has advanced so rapidly in the last few decades that in these days he would indeed be a bold man who pretended to be an expert in every department of medicine and surgery, or tried to pose as a universal specialist. The growth of genuine specialism has been gradual, and it is still going on. Many a man who would deprecate being called a "specialist" is really one, or at any rate is being forced virtually to become one. In the course of his work his attention may be directed to some particular class of disease or operation. He learns all there is to be learnt about it, and perhaps adds something to the existing knowledge. He widens his experience with similar cases, and by degrees gets the reputation of being an authority on that particular subject. As is only natural, the general public will go to the man who has, or is supposed to have, the largest experience of the particular affection from which they suffer, and his brother practitioners also will seek his assistance and advice in cases upon which he has become an authority. Sooner or later he may find himself doing little or nothing outside of that special area, and he has indeed developed into a veritable "specialist," whether he likes to be called one or not. Most of the great specialists have thus been gradually evolved. Legitimate specialists, however, are not only made in that way; some go in for special work malice prepense—from natural inclination or from some other particular reason. But the wiser men of this class—in this country, at all events—do not "rush in" without a good general foundation or unless after long special study. In my opinion, the best equipped specialists in dermatology as well as in every other special department are those who have not only acquired a sound practical knowledge of general pathology and of the other subjects of the student's curriculum, but have also gained before attempting to specialise at least a few years' experience in the general practice of the profession. A man may afterwards work in the special department of his own or some other hospital, and I would advise him to attend the clinics of as many teachers of the branch he has chosen as he can, both in this country and abroad.

[Dr. Abraham then pointed out the harm that was done to "specialism" by the medical man, who with no particular special study and with no extensive experience of a subject suddenly decided to become a specialist. It was men of this class, he said, who were more prone to lend themselves to vulgar advertisement and to ignore the ethics of the profession in other directions. He continued:—]

It has been recently said that in the near future there will be nothing but specialists, hospital physicians and surgeons, and medical men in the Government services; in other words, that there will be no place for the general practitioner as we know him to-day. I believe that such a state of affairs is not likely to come to pass, for it would not only be detrimental to the profession in general but a serious loss to the public at large. The family doctor—the medical "guide, philosopher, and friend" of the household—will always be, I maintain, an important and, indeed, indispensable element in the medical world. With the more thorough education that is now at his disposal, and with his daily advancing knowledge, his patients will be less likely to leave him and independently seek the advice of the consultant and specialist, as some no doubt do at present. It is his function to advise in and treat all cases that he really understands and can adequately deal with; but I venture to think that in the long run he is well advised in obtaining assistance from experienced experts in cases which he is not sure of, or which are beyond his knowledge. It is true that many of the general public still imagine that if the "doctor" does not know everything in medicine and surgery, and honestly professes his ignorance, he cannot be a good doctor, or "clever," as they call it; but the laity are gradually becoming more enlightened in these matters, and are now more able to appreciate them in their true proportion than they could a few years ago. I know that some practitioners avoid consultations as far as they can, because after a consultation they occasionally lose their patient and see him no more; and it is possible that certain consultants and specialists have little hesitation in quietly appropriating such patients and regarding them as their own for the future. I am sure, however, that an honourable consultant or specialist does not knowingly act in that manner, and that if a patient who has been brought or sent to him by a brother practitioner comes again independently he informs the practitioner and tries to send the patient back. If this rule is occasionally broken by reputable men it can only be by inadvertence or forgetfulness. The friction which may thus sometimes occur between general practitioners and consultants would, I am sure, be lessened, or be, indeed, non-existent, if only we acted generously—in fact, as gentlemen—and remembered the old adage, "Live and let live."

In a recent correspondence which has appeared on this subject it has been suggested that no specialist or consultant should ever see a patient unless accompanied, or sent, by a general practitioner, and that no general practitioner should have anything to do with a specialist or consultant who sees patients independently. I am afraid that this idea must be regarded as a "counsel of perfection" and not practicable. We must not forget that there is still a certain amount of

freedom in this country and that the lay public also have their rights.

In conclusion Dr. Abraham said: "It must be admitted that at the present day advances in our knowledge of disease are more likely to be made—and are, indeed, being chiefly accomplished—by men who devote themselves to the study of particular subjects, than by those whose time and energies are fully employed in the routine of general practice. At the same time I am sure that every general practitioner must frequently in the course of his work meet with facts of interest or of novelty which ought to be recorded. I wish, indeed, that every member of our profession could always afford the time, and would more often take the trouble, to accurately report every circumstance that appears to him unusual in the course of the disease he is treating. Much valuable knowledge could probably be thus added to medical science, which is now 'bottled up,' so to speak, in the brain of the general practitioner.

One of the great objects of our late friend Mr. Keetley, and of those who were associated with him in the foundation of this society, was to afford the opportunity to the medical practitioners of the neighbourhood, and to the staff of the West London Hospital, to meet together, compare notes, learn from each other, and conjointly to advance medical and surgical knowledge. No one can say that the society has hitherto failed in this respect. May we continue to proceed on these lines, and I trust that this session which is now beginning will be not less fruitful than those which have gone before."

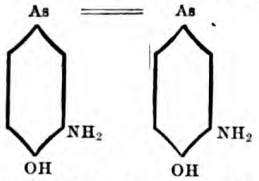
FURTHER EXPERIENCES WITH "606" (80 CASES).[1]

BY J. E. R. McDONAGH, F.R.C.S. ENG.,
SURGEON TO OUT-PATIENTS AT THE LONDON LOCK HOSPITALS.

BEFORE relating my further experiences with "606" a few words will not come amiss describing the *rationale* and the steps taken before a drug was discovered which, on the one hand, would kill the organisms in protozoal diseases, and, on the other, be non-toxic in that dose which would bring about their complete destruction—in other words, the action must be parasitotropic without being organotropic.

Experiments were first carried out with trypanosomes, and after several thousands of chemical substances had been tried with a view of discovering whether fixation of the organisms was possible, it was found that those having this power fell into three groups: (1) Arsenic and antimony; (2) azodyes—e.g., trypanrot, trypanblau, and trypanviolet; and (3) basic triphenylmethane dyes—e.g., parafuchsin, methyl-violet, and pyronin.

With pyronin, for instance, it was possible to produce a specific immunity in trypanosomes against the group to which it belonged, but not against a substance in groups 1 and 2. The chemotherapeutic action was studied by mixing trypanosomes with corresponding substances and observing microscopically their cessation of movements and swelling, and also *in vivo*, e.g., by gauging the curative action on infected animals. In this way a substance was found to have the power of killing spirilla of recurrent fever in as weak a dilution as 1 : 6,000,000; *in vivo* the effects were equally remarkable not only in combating the diseases due to spirilla, but also those caused by spirochætæ and trypanosomes, without being non-toxic in that dose which was able to bring about their complete destruction in 24 hours and after a single injection; this preparation was a dioxydiamido-arsenobenzol, or, as it is now popularly called, "606." The formula of "606" is represented graphically as follows:—



Atoxyl differs considerably from "606," since it is not potent except *in vivo*, as its action depends upon a reduction product, para-aminophenylarsenoxyd, and in the reduction the arsenic molecule becomes changed in such a way that all cannot be fixed, consequently people possessing a natural sensitiveness to arsenic might become poisoned by that portion which remained unfixed; and this is what actually happened. Further, several doses of atoxyl are required to one of "606." Before the drug was put upon the market Ehrlich drew attention to this possibility, and showed that it might be avoided by testing the patient's sensitiveness by means of either a Calmette or a von Pirquet's reaction with the drug before use; and those giving a positive reaction regarded as unsuitable for treatment.

Owing to the difficulty of using a solution of "606" for test purposes, I advocated arsacetin—a known toxic preparation. After testing several patients only two gave a positive reaction; both cases had been treated for some time with soamin, and not infrequently after an injection a red, painful induration formed at the site of injection, analogous to the intradermal reaction with tuberculin. Both patients received an injection of "606," and although ill for a few days responded remarkably, and as one had double optic neuritis which did not go on to atrophy, any test beforehand might be regarded as unnecessary.

Owing to the enterprise of other chemical manufacturers drugs similar to atoxyl were advertised as harmless and were used indiscriminately with sporadic disastrous results, for which Ehrlich was blamed. Therefore, it is scarcely to be wondered at that Ehrlich should take every precaution in limiting the use of this new preparation "606" to a few whom he could trust to test its efficiency and gauge its indications and contra-indications.

Both atoxyl and arsacetin have been largely employed in the treatment of psoriasis and lichen planus, and no harmful sequelæ have supervened—rather what one would expect, since the reduction does not seem to occur unless some protozoal disease is present to bring it about. "606" has also been tried in cases of psoriasis, lichen planus, and leukæmia without any great benefit arising therefrom.

Some of the preparations which fall into the three groups and which have a destructive action on the organisms *in vivo* do not destroy the same in a test-tube, but only inhibit their multiplication. For instance, Busk showed that paramecia could live for weeks in a solution of trypanrot, but were completely unable to propagate themselves.

Another action which some of the arsenical compounds possess is to kill some of the organisms, which results in the production of antibodies, which destroy the remainder.

The best results of cure obtained are, naturally, when the disease is at its height, when the body is saturated, so to speak, with the specific organisms, since the formation of antibodies may play even a greater part in causing their complete dissolution than the direct destruction of a few, and in these very potent preparations the smallest dose possible may suffice.

In the treatment of syphilis with "606" I have found that a much bigger dose is required to heal an early chancre than to cure completely a case of extensive gummatous ulceration, for instance, in a congenital syphilitic; therefore one is justified in assuming that the cure is largely due to the amount of antitoxin formed—a further proof of which the following is an excellent example.

If a mother after giving birth to a syphilitic infant be injected with "606," all the syphilitic manifestations in the infant disappear within a week after it is put to the mother's breast. The improvement is not due to the amount of arsenic the child receives, since none is found in the milk; it must, therefore, be due to the antitoxin produced in the mother by the death of her spirochætæ, and which is conveyed by means of the milk to the child. This fact is of considerable importance, since the risk of death in an infant injected with the smallest possible dose of "606" is enormous, owing to the amount of endotoxin formed. We do not yet know whether the cure obtained in a child in the way described is a permanent one, and Ehrlich's advice at present is to give the child an injection later, when it is in a healthier condition. Curiously enough, some of the dyes—methylene blue, for example—have a contrary action; they cause a tremendous increase of the parasites instead of destroying them, since their action is more organotropic than parasitotropic. Another factor not to be forgotten is, that after a single injection the protozoa may become immune to a further injection; that this is the rule with all the arsenical compounds is by no means the case, since patients who have had

[1] See THE LANCET, Sept. 3rd, 1910, p. 711.

a course of atoxyl or arsacetin respond equally well to an injection of "606."

In cases which have recurred owing to the initial dose of "606" being too small, it yet awaits to be seen whether a second injection will retain its equivalent action; protozoa do become immune to arsenic, so it is quite likely that even a larger second injection may fail to cure the disease. It is most important, then, to put the dosage on a sound basis, and experience has already shown that the doses first employed were too small. Two of my early cases recurred, and both received a second injection, which has fortunately been able to heal the local lesions; whether a cure has been produced it is yet impossible to say. The improvement following the second injection, although the dose was larger, was not nearly as quick as after the first, and I doubt whether it is going to be permanent; such being the case, it is foolish to give a third or more injections, one must then fall back on mercury. An adult should not receive less than 0·5 grm., 0·6, 0·7, and 0·8 grm. are quite safe; in fact, these are the doses which Professor Ehrlich has recently sent me.

The procedure of the modern chemotherapy, which has in innumerable animal experiments succeeded with one fell swoop in curing the severest of infections, is exactly analogous to that of surgery, which with one operation is capable of eradicating a disease; in both the instruments employed carry with them some slight degree of danger. As Ehrlich aptly says, surgery owns her success not to the principle of *primum ne noceas*, but to *primum ut profiteas*, and when from animal experiments we are sure that a true cure has been obtained, surely it is better to run the slightest risk than to deprive all of its benefit. One has only to see cases of malignant syphilis going rapidly downhill, uninfluenced by mercury and developing phthisis, improve in a fortnight beyond recognition, practically saved from death, to realise what this means. As the surgeon can discriminate between those suitable for a certain operation and those not, so will those with whom "606" has been entrusted be able to lay down definitely the indications and contra-indications for treatment.

Since my last communication I have tried injecting the drug in every possible form, and as regards the future course of the disease what form employed matters little provided the medium is an alkaline one. Since the pain in a nearly neutralised medium is so much less than in a strongly alkaline one, I always prefer to almost neutralise my solution, and as the bulk adds greatly to the pain, I am now able to produce an emulsion of not more than 6 cubic centimetres, and instead of injecting into the glutæi, I now inject under the trapezius on a line with the spine of the scapula, and midway between the scapula and the vertebral column, on the left side in right-handed individuals, and *vice versâ*. Injections into the glutæi necessitate the patient's lying in bed, and since the pain is often worse in this position than when standing up, patients begin to walk about the room on the second and third day, when all of a sudden they are seized with severe sciatica which may keep them bedridden for as long as three weeks, probably due to the gravitation of the injection mass downwards on to the sciatic nerve; and, further, early movements increase the local inflammatory reaction, so that a large swelling almost invariably forms, and it is not till this swelling has almost disappeared that the sciatica abates. Injecting into the shoulder one is below the brachial plexus, so there is no radiating pain down the arm and only a very occasional shooting pain down the back and up to the head. Not infrequently, immediately after an injection into the shoulder, especially in plethoric individuals, there is great difficulty in breathing owing to a spasm of the intercostal muscles on that side; this difficulty in breathing, which may be accompanied by coughing, does not usually last longer than a quarter of an hour, and in only one of my cases did the patient get a little blue; and as in this case the difficulty in breathing persisted for some time and pleurisy developed, I now always inject emphysematous patients in the glutæi.

The method I now employ of preparing the solution is first to rub the powder up in a mortar with 1 cubic centimetre of a saturated solution of sodium hydrate, adding to this 3 to 4 cubic centimetres of very hot water, then 3 drops of the standard alcoholic solution of phenolphthalein, and just enough glacial acetic acid till a fine yellow emulsion is formed, and finally a drop or two of the sodium hydrate solution until the emulsion is of a rose-pink colour on adding another drop of phenolphthalein. The emulsion is best prepared by the bedside.

Kromayer is now injecting the powder in liquid paraffin, and depends upon the alkalinity of the blood in producing a mono- or bi-sodium salt. Such a preparation is painless, but whether equally efficacious I cannot say.

Prophylaxis.—As a prophylactic the drug is powerless, since its constituents are not broken up unless acted upon by protozoa, but be syphilis diagnosed as early as it is possible to do, after a single injection of 0·5 to 0·6 gramme the spirochætæ can be made to disappear within 48 hours and no further manifestations of the disease appear.

Primary stage.—In no case which I have so far injected, where a chancre alone was present, have secondary symptoms developed, and those cases which gave a negative Wassermann's reaction before the injection remained negative with the exception of some which gave a positive afterwards, but all are negative at the time of writing.

CASE 1.—A Japanese, aged 26 years, came to the Lock Hospital with seven chancres on his penis and inguinal adenitis. The patient received an injection of 0·5 gramme into his shoulder and was sent home. When he came up a week later the chancres had completely healed, but the glands were larger. Eight days later still not a trace remained of the initial lesions, and the glands had returned to their normal size. In several cases I have noticed this enlargement of the glands after the injection, but the increase in size is not permanent.

The following is an interesting case complicated by sepsis, which abated after the injection.

CASE 2.—The patient, 35 years of age, developed a chancre in January, 1910. The sore became phagedænic and when the patient was admitted to hospital in July the penis had almost disappeared, the urethra opening under it as a separate structure; there were also two offensive ulcers above the pubis. Owing to the extreme septic condition an injection of "606" was given to see if it would have any influence in checking its further course. Seven days after the injection the condition ceased to spread, and 14 days later the ulcers had cicatrised and the stump of the penis had completely healed.

Owing to the great difficulty of admitting every patient I have treated many as out-patients, but this procedure does not commend itself, as they will not rest for a few days, with the result that a large lump forms at the seat of injection which gives rise to considerable pain and takes some weeks to disappear. A patient should keep as quiet as possible for at least four days.

Secondary stage.—It is the rule for all the symptoms to disappear after a single injection of from 0·5 to 0·6 gramme. Very rarely the rash is temporarily increased in severity analogous to the Jarisch-Herxheimer sign, which so frequently occurs when a patient is first put on a course of mercurial inunctions; the interpretation of such is that the dose given was too small and those cases reported did not receive more than 0·3 gramme.

CASE 3.—A man, aged 22 years, came for treatment with a urethral chancre, polyadenitis, and a diffuse macular papular rash. An injection of 0·5 gramme was given and within a week all signs of the disease had disappeared except for an increase in the enlargement of the inguinal glands, which have since gone back to their original size. Ten days after the injection Wassermann's reaction was positive; in fact, the serum had the power of fixing more complement than it did before the injection was given. On Sept. 29th Wassermann's reaction was just positive; the amount of complement fixed was less.

The most striking results so far obtained in the secondary period have been in cases of malignant syphilis of which the following is an excellent example.

CASE 4.—A man, aged 32 years, contracted syphilis in April, 1910, and as soon as the nature of the sore had been ascertained he was put under mercurial inunctions (ung. hydr. oleatis ℥i. nocte) and took hydr. c. cret. internally. A rash then appeared, but the patient did well under treatment for two months, when stomatitis, ulceration of the pharynx, and gummata of the skin and scalp developed, which tended to get worse the further mercury and iodides were pushed. The patient was so weak from dysphagia and anæmia, having lost 2 stones in two months, that he was admitted into the West London Hospital under the care of Dr. H. Pritchard,

to whom I am indebted for notes of the case, and received an injection of "606." Two days after the injection the throat was not so sore and on the third day there was no difficulty in swallowing, and the sores on the body showed marked signs of healing. Within a week the mouth and throat were normal, and within a fortnight every gumma had cicatrised, and the patient remarked that he had never felt better in his life.

Another case of malignant syphilis was essentially the same as the last except that there was an additional complication of pulmonary tuberculosis. After an injection the patient's cough subsided, there were no more night sweats, and although the physical signs were still present they did not appear to be so obvious.

Perhaps the most resistant syphilide to mercurial treatment is the small recurrent papular syphilide, or the lichen syphiliticus, of which the following case provides a good example.

CASE 5.—The patient, a woman, aged 38 years, was admitted, under the care of Dr. P. Abraham, to have an injection of "606," which she received (0·6 gramme) on Sept. 3rd, for a lichen syphiliticus on the face and other parts of the body, which had persisted for 15 months, and in spite of continuous treatment had never improved. On the third day the patient had delirium tremens; she had never had an attack before, but she was an alcoholic, and was under the influence of alcohol when admitted into the hospital. In a short time the patient recovered and the syphilitic lesions completely disappeared, leaving only slight pigmentation behind. Just as the patient was going to be discharged she developed erysipelas on the forehead from a case in the same ward; as a result of the rise of temperature her mental balance again became affected, but regained itself when the temperature fell. The patient has now quite recovered, is fully *compos mentis*, and it is scarcely to be believed that she had had a most stubborn syphilide on her face only a fortnight ago.

In no stage of syphilis is the action more apparent than in the tertiary, when the patients are usually very run down; a few hours after the injection the symptoms begin to subside, and within a week not only have the lesions healed or disappeared, but the patient's general condition is also markedly improved. Three cases I have had of women unable to work for two or more years who returned in three weeks, and, as one said, "feeling 10 years younger."

I have been struck by a group of symptoms which, for want of a better name, I will call vascular, and which a patient does not usually complain of, but the disappearance of which he calls one's first attention to after the injection. These subjective symptoms are præcordial pain and "heaviness," palpitations, irregularity of the heart beat—in short, a pseudo-angina; probably dependent upon an endarteritis of the small vessels. So constant are these symptoms that they should prove of great value in diagnosis.

CASE 6.—The patient was a housewife, aged 23 years. The date of infection was not quite clear, but there had been four pregnancies with evidences of syphilis. She came for treatment a year ago with a sore-throat and difficulty in speaking and swallowing solids. She was under the care of Dr. H. J. Davis, who very kindly asked me to give her an injection. The diagnosis of syphilis was unmistakeable, there was ulceration of the pharynx, the larynx, and the posterior nares; the uvula and part of the soft palate had gone. For one year the patient was treated with anti-syphilitic remedies without avail; her general condition became so bad, and the ulceration tended to advance, that she received as an out-patient 0·5 gramme in an emulsion of 6 cubic centimetres which I injected under the left trapezius. For three or four days the patient was extremely ill, had high fever, and sweated profusely. The further course will be best explained from a letter I received seven days later:—

> For 12 long months I could not eat anything solid, and even found it difficult to swallow liquids. But a few hours after your injection I found relief, much to my delight. Although it is only a week since you did it I feel a new woman and can eat almost anything.

The improvement in her general condition was really remarkable, her speech was no longer a whisper, and the ulceration had completely healed 11 days after the injection.

CASE 7.—The patient, aged 42 years, a housewife, was admitted with gummatous ulceration and elephantiasis of the left leg, the condition having been gradually getting worse since 1908. Syphilis was contracted in 1904. For this case I am indebted to Dr. H. G. Adamson. The affected leg was red and swollen from below the knee to the ankle-joint, there were several scars from old gummata and ten recent septic ulcers and a few abscesses filled with pus, which were just on the point of breaking down. The circumference in the thickest part was 12 inches. The ankle-joint was swollen and too painful to move, the patient could not bear pressure on the leg, and the pain was very acute when standing on it. The patient's general condition was not good, she was anæmic, felt ill, and had no appetite—in fact, looked as if she was under the influence of septic poisoning. On August 18th the patient received in the glutæi 0·4 gramme in an emulsion; the next night the temperature rose to 101·4° F., and the pulse-rate increased to 104; two days later both the temperature and pulse were normal. There was a slight trace of albumin after the injection. On the 21st the circumference of the leg had diminished by half an inch; the ulcers were quite clean and commencing to granulate, and the patient could move the ankle-joint. No albumin was present. On the 23rd the ulcers had healed. The leg measured 11 inches. The patient got up, and was able to put the foot to the ground without it causing any pain. On the 26th the leg measured 10¾ inches. The skin had regained its normal colour, there was no pain, the abscesses referred to above had aborted without discharging their pus, and the patient declared that she had never felt so well in her life.

Beyond the great improvement in the general condition the most important point in this case was the way in which the septic material, pus, &c., had disappeared without any supplementary treatment. On Sept. 15th Wassermann's reaction was negative.

The next case is one of extreme interest, as the patient was suffering from syphilitic meningitis and had double optic neuritis; the case was very kindly sent to me by Mr. A. W. Hare of Newquay, and for the notes of the condition before injection I am indebted to Dr. F. E. Batten who kindly saw the case with me.

CASE 8.—The patient, a man, aged 40 years, developed syphilis 11 years ago, but had no secondaries, and only took mercury internally for six months. In 1908 gummata developed in the skin and some of the cranial nerves became involved. Some improvement was obtained after several injections of soamin and potassium iodide internally. In January, 1910, the patient had diplopia, and was much troubled with headache and vomiting. In March he first noticed weakness of the right side of the face, and was treated with mercury and iodide, with only temporary improvement. When seen on Sept. 12th the condition was as follows: "There is an internal strabismus with diplopia due to paralysis of the right external rectus and weakness of the left external rectus. The movements of the eye dependent on the third nerve are good. The pupils react well and the vision is good. There is some swelling of both optic discs. There is paralysis of the right side of the face and both motor and sensory portions of the right fifth are involved. There is deafness on the right side, but the tuning-fork is audible when placed in contact with the mastoid. There is some unsteadiness in gait, but this would seem to be dependent on the diplopia. There is no rombergism and no weakness of the limbs. The knee-jerks are active and equal; the plantars could not be obtained, and the abdominal were difficult to obtain, but were equal. The articulation is somewhat nasal, but no weakness of the palate can be detected, although there is some difficulty in deglutition. The movements of the tongue are good. It seems probable that there is a circumscribed syphilitic meningitis at the base of the brain involving the right fifth, sixth, and seventh cranial nerves, and probably also the right eighth and ninth and the left sixth to a lesser degree. There is no evidence of any affection of the pyramidal tracts." The arsacetin reaction was positive and the patient stated that it was not uncommon to get a local red, painful hard swelling after a soamin injection. An injection of 0·5 gramme of "606" was given. The patient was very ill for a few days, but on the third day the temperature returned to normal and he declared that his hearing had improved. Within a week he could walk without a stick, all the affected nerves had regained some of their power, the improvement in the sixth and seventh being very striking. The injection was given on Sept. 12th and on the 28th I received the following letter from Mr. Hare:—

> Optic neuritis is still present, but the patient says his visual power has improved daily, especially during the last four or five days. The

third, fourth, fifth, sixth, and seventh nerves all show signs of improvement in function, but I cannot find any increase of hearing on the right side, though the patient says there is. Swallowing, respiration, and heart's action all improved. To-day the heart beat was perfectly regular at 78, whereas I have often found marked irregularity both as regards rate and strength. I am very glad you have so successfully carried out the treatment and I must congratulate you on its probable successful issue, as I think there could hardly be worse cases than this to test the treatment upon.

Another letter, dated Oct. 12th, states that the optic neuritis has almost gone, eyesight greatly improved, and that the patient can walk 100 yards without staggering. The hearing has also greatly improved.

I am glad that Mr. Hare drew attention to the improvement of the heart's action, since several patients have of their own accord drawn my attention to the disappearance of the præcordial pain or "heaviness" after the injection.

Besides the cases already mentioned, the improvement in chronic superficial glossitis has reached far beyond expectation.

CASE 9.—I injected a soldier whose tongue was twice the normal size, deeply fissured and ulcerated, his condition having gradually got worse during the last five years. As in most of these cases of chronic glossitis, mercury had little or no influence upon it. One week after the injection the tongue had nearly regained its normal size, there was no ulceration, and the fissures were not nearly so deep, and the patient says that he has had more ease than he has had for some years. The injection was given on a Saturday, the man was on parade on Sunday, and shooting the following day. Unfortunately most patients suffer considerably more inconvenience than this, although the injection be prepared in the same way. Pain must depend far more upon the idiosyncrasy of the patient than upon the injection itself.

CASE 10.—Another patient with chronic superficial glossitis and two swellings on the tongue, which might have been either gummata or malignant disease, was given an injection as he was most anxious not to lose the anterior two-thirds of his tongue. The lumps completely disappeared and he said that he felt very much better.

Another case under mercurial treatment for two years without benefit showed almost a normal tongue 14 days after the injection. Patches of leucoplakia had even disappeared.

The risk of optic atrophy from "606" need scarcely be seriously considered, since no case of amaurosis is on record, and I have injected one case of bilateral optic neuritis without atrophy ensuing, one case of unilateral optic neuritis caused by injections of soamin, two cases of syphilitic choroiditis, and two cases of syphilitic iritis, which healed after a single injection. Professor Ehrlich has had now over 12,000 cases, and not one has had any eye trouble.

In parasyphilitic affections "606" will not be often indicated, since both tabes and general paralysis of the insane are usually too far advanced before treatment is started. If a case is obtained early the result of treatment is really marvellous, as the following case will show.

CASE 11.—The patient, aged 36 years, developed syphilis ten years ago, for which he was treated with mercury internally for three years. Owing to impotence and loss of control over the bladder and rectum of four years' duration he consulted Mr. Arthur Shillitoe, who found that he had unequal pupils (the inequality being due to an old iritis of the right eye) which did not react to light and there were no knee-jerks. As he gave a positive Wassermann's reaction Mr. Shillitoe very kindly asked me to give him an injection of "606." Within a week after the injection the control over the rectum had been regained, and the trouble of not being able to start the act of micturition had disappeared. The knee-jerks were slight, the pupils reacted sluggishly to light, and the very slight ataxia which was present before had now disappeared. Seen again on Oct. 12th, my notes state that vision in the left eye is greatly improved and that glasses can be dispensed with. Erections returned; can do exercises and walk without getting tired. No indigestion and præcordial pain. Knee-jerks returned, and pupils react to light. Wassermann negative.

Three cases of tabes with marked ataxia did not improve under the injection, but foreign reports state that lightning pains disappear under the influence of "606" In one of the cases where there was a perforating ulcer an injection had the power of producing granulations, but owing to the joint being exposed complete cicatrisation was impossible.

It is more than probable that a very early case of general paralysis of the insane might be cured, but once degeneration becomes marked no further improvement can be expected. In two cases in which I used the injections no benefit was received.

Two cases of hemiplegia giving a positive Wassermann's reaction, and probably due to syphilitic thrombosis, did not improve after an injection.

The following rather unusual case is of some interest.

CASE 12.—A patient developed syphilis some years ago and had the usual symptoms, for which he was treated thoroughly. The symptoms never entirely went away, and a rash would appear periodically and there would also be attacks of malaise and great enlargement of the glands in the neck (size of hen's egg). Potassium iodide in large doses caused temporary improvement. I gave an injection of "606," and a fortnight later received the following letter from the patient, who had suffered very considerable pain:—

> I can hardly express my delight in being able to inform you that I am beginning to feel my old self again. Every day I can note an improvement in the feeling of well-being. The rash has gone and the glands are going; those at the angle of the jaw are still a little enlarged but seem to be getting smaller each day; those in the neck are reduced to the size of small peas and shot, and there is now no pain or tenderness in them. The awful depression and shooting pains are relieved, and once more I am beginning to feel there is some pleasure in being alive.

One of the greatest uses to which "606" will undoubtedly be put will be in the treatment of syphilitic women and congenital syphilis. Since women may be syphilitic without having, or having had, any symptoms of the disease, every woman who gives birth to syphilitic children should be herself regarded as syphilitic, the proof being a positive Wassermann's reaction which is obtained in these cases, and an injection of "606" has enabled such women to give birth to normal children. If a child is born with obvious signs of syphilis it is dangerous to inject the infant owing to the amount of endotoxin formed which a weak and marasmic child cannot overcome. Fortunately, there is a better way of treating congenital syphilis, as the following case, reported by Taege, shows.

CASE 13.—A girl, aged 19 years, with condylomata from which spirochætæ were obtained and who gave a positive Wassermann's reaction, bore on July 4th a marasmic child which weighed 4½ pounds. On the 13th pemphigus bullæ on the soles of the feet and paronychia of the fingers developed. On the following day the mother was injected with 0·3 gramme of "606." On the third day the lesions showed marked improvement and no spirochætæ were to be found in the condylomata. The child was suckled straight away by the mother, in consequence of which on the second day the symptoms increased in severity, to suddenly disappear with such extreme rapidity that on the fifth day the greyish colour had been replaced by the normal rose tint of the skin, the paronychia had vanished, the bullæ had become almost imperceptible, the child cried instead of whimpering, and took the breast eagerly. On the 29th the child weighed 8 pounds and showed no symptoms. The cure of the child is due to the antitoxin elaborated by the death of the mother's spirochætæ and conveyed to the child through her milk, no arsenic being found in the milk.

After every injection there is a leucocytosis which may sometimes be as high as 30,000; the increase is chiefly in the neutrophile leucocytes, and occasionally there is an eosinophilia. The usual count is about 17,000. The excretion of the arsenic takes roughly about a fortnight or three weeks after an intramuscular injection and the corresponding number of days after an intravenous, and since by the latter procedure the spirochætæ may not be completely destroyed in the time for safety many who use this route give a subsequent intra-muscular injection.

Albuminuria is an uncommon sequence of an injection. Constipation not infrequently appears, so on the second or third day it is advisable to order a laxative.

A rise of temperature after an injection is by no means an invariable rule and is not entirely influenced by the severity of the disease, although generally the severer the symptoms the greater is the rise of temperature. After an injection of "606" the tendency is for the Wassermann's reaction to become negative, the most usual time being between the third and fourth weeks. Some cases which had a chancre only and gave a negative Wassermann before injection gave a positive the week following, which again became negative, to remain so So far as we can yet say, in congenital syphilis the reaction remains positive. Regarding how not

infrequently syphilis is complicated by other diseases and associated with other infections, I have endeavoured to select such cases in order to study the influence "606" has upon them. Where syphilis is complicated with tubercle, which in the malignant form it almost invariably is, the injection exerts a beneficial influence upon the tubercular lesions. Secondary infection with streptococci and staphylococci is often cured along with the syphilitic processes it complicates; for instance, phagedæna of the penis and pubis was checked with a single injection. Coccal infection in a case of gummatous ulceration of the leg with elephantiasis was overcome by "606." On the other hand, an injection of "606" does not render a patient immune to either a streptococcic or a staphylococcic infection, since one of my cases developed erysipelas a fortnight after the injection, and two or three have since been troubled with furunculosis in a mild degree. Many of the patients were suffering concurrently from gonorrhœa, but on this disease "606" exerted no influence either for better or worse.

When dealing with the action of a new drug which cannot be regarded as entirely harmless it is just as important to record one's failures as successes. In a case of leprosy not the slightest good result was produced by an injection of 0·5 gramme. One man's death was hastened by the injection, a case of supposed cerebro-spinal syphilis, which turned out post mortem to be a case of disseminated sarcoma. The patient was in an extremely bad condition, could hardly move, and had anæsthesia up as far as the neck. Death ensued on the second day. Both the blood and the cerebro-spinal fluid gave a negative Wassermann's reaction; unfortunately, the test was not carried out until after the injection had been given.

The last-mentioned case is most instructive, as a similar one will befall many when the drug is put upon the market. So let me advise the precautionary step of testing the patient by means of the Wassermann's reaction before the injection is given, as unless this is done several non-syphilitics will be treated with "606." It is absolutely useless in a case of syphilis to rely upon history, since a man will often say "Yes" when the question of his having had the bad disorder is put to him, when probably it was only a soft sore or gonorrhœa from which he was suffering.

Patients who have had one or two attacks of hemiplegia, advanced cases of tabes, and general paralysis of the insane should certainly never be treated. Cardiac disease, marked arterio-sclerosis, and Bright's disease are contra-indications. In one case—that of an alcoholic—delirium tremens commenced on the third day after the injection, and the patient's mental condition was not normal until a week later. To what extent the delirium tremens was dependent upon the injection or to the stopping of the alcohol it is impossible to say. We know that it is not an uncommon sequence after any surgical interference.

An emphysematous plethoric man, aged 50 years, developed pleurisy on the side of the injection on the second day. In two cases only did a rash develop after the injection, curiously enough limited to the limb where the injection was made; in both cases the rash was a typical erythema iris, which only lasted for a few days. A condition simulating angioneurotic œdema appeared in a congenital syphilitic who had general paralysis of the insane, but it lasted only for about 24 hours. The cases which did not respond are mentioned above.

So far two cases have recurred; both had extensive ulceration of the nose besides gummata elsewhere; both were injected on August 3rd with 0·4 gramme and on Sept. 10th both patients noticed a redness of one side of the nose, which in a few days became ulcerated. They both on Sept. 24th received a second injection of 0·5 gramme. It is probable that in both these cases the initial dose was too small. It will probably take years before we shall be able to regulate the dose on a sound basis. Should that be the case and even recurrences occur, the patient's general health is so much benefited by the initial dose that they would be in a better condition to be treated with mercury if necessary.

Fortunately, not a single case has developed secondary symptoms in which the chancre was the only one when the injection was made, and animal experiments also go to prove that a single injection is capable of producing an absolute cure, since Neisser was able to re-inoculate apes a second time with syphilis. A second attack in man is regarded by many as impossible, probably due to the inefficiency of mercury in producing a cure; therefore we shall no doubt see several such cases which have previously been treated with "606."

Much has yet to be learned before the final word on this wonderful remedy is given; one can say that the dangers have been extremely exaggerated, since only 12 deaths have occurred in 12,000 cases, and in many of these the injection was given as a last resource. This being the case, and there not having occurred an instance of visual disturbance, the drug will not, in my opinion, fail to achieve the object which its talented discoverer Geheimrat Professor Ehrlich had hoped for it.

Harley-street, W.

A CASE OF BENIGN CYST OF THE HUMERUS.

BY HUGH LETT, M.B. VICT., F.R.C.S. ENG.,
ASSISTANT SURGEON TO THE LONDON HOSPITAL.

(*With a Pathological Report by* HUBERT M. TURNBULL, M.A., M.D. Oxon., *Director of the Pathological Institute, London Hospital.*)

THE patient, a boy, aged 13 years, was brought to the London Hospital on August 14th, 1909. He said that he had been knocked down and had fallen on to the right shoulder. When he got up the arm was painful and he could not move it. On examination the upper third of the shaft of the right humerus was much enlarged. It was firm, and the whole thickness of the shaft appeared to be uniformly involved, the swelling gradually shelving into the normal bone below. No eggshell crackling could be detected. The humerus was fractured about 2 inches below the upper epiphysis through the lower part of the enlargement. A skiagram (Fig. 1) showed expansion and rarefaction of the upper 3 inches of the diaphysis, limited above by the epiphyseal line and below by a well-marked concave margin of slightly sclerosed bone. The bony wall was well defined, but extremely thin, and at the lower end there was a transverse fracture with slight lateral displacement. The upper half of the swelling was crossed by a few trabeculæ, but otherwise the whole area was much less opaque than normal bone, though the opacity varied slightly in different parts of the swelling.

The previous history of the case was of great interest in that the boy had been in hospital two years before with the bone in a very similar condition of expansion and rarefaction, and with a fracture at the level of the surgical neck. Six days previously a man had pushed him on the shoulder; this was followed by pain which was exaggerated on attempting to move the arm. A diagnosis of sarcoma with spontaneous fracture was made, and amputation was advised. This, however, was refused, so the boy was discharged with a poroplastic shoulder-cap and the arm in a sling. Up to the day of the injury he had had no pain and had not noticed any swelling of the arm. The fracture united, and to quote his own words: "The arm got quite well and there was nothing the matter with it," until the accident on August 11th, 1909. Otherwise his previous history was uneventful, except for tuberculous disease of the right hip in 1899, with subsequent abscess formation and sinuses. Ultimately the hip-joint was excised. As far as the mother knew he had never had rickets, and he showed no signs of it now. There were two other children, aged 13 and 8 years respectively, who are both healthy. The mother was unaware of any tumour formation in members of her or her husband's family.

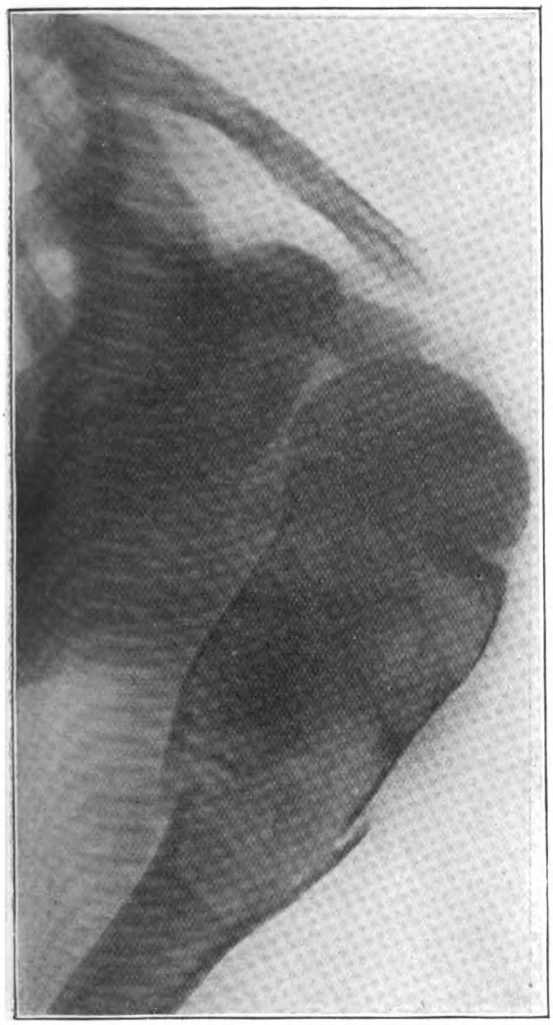
Operation was performed on August 20th, 1909. An incision four inches long was made on the antero-external aspect of the arm. The periosteum was exposed and appeared to be normal; it was then reflected from the expanded bone, but while this was being done the raspatory broke through the thin shell and a yellowish mucoid fluid escaped which was stained with blood. As rapidly as possible the whole of the affected part of the shaft was stripped of its periosteum and excised, leaving the epiphysis above and healthy bone below. The diaphysial side of the epiphysial line was gently scraped and the humerus was reconstituted. This part of the operation consisted in replacing the bone which had been removed by an ebony rod, such as is used for securing the intestine

outside the abdomen in the operation of colotomy. A distinctive feature was that the rod tapered to a point at one end, while the other was blunt, so that it resembled a sharpened pencil. The point was inserted into the epiphysis and the blunt end into the medullary cavity of the bone below. In this way the epiphysis was firmly joined to the shaft by a rigid rod. The periosteum was then sutured round the rod and the wound was closed. Healing took place by first intention and subsequent progress was uneventful. A poroplastic splint was moulded to fit the shoulder and extended down the forearm as far as the wrist, the elbow being flexed to a right angle. The splint was secured by straps passing round to the opposite side of the chest. Two months after the operation the splint was removed and the patient was given regular massage. At the present time the movements of the right upper extremity are perfect, and the muscles are rapidly increasing in size. The new bone is firm, straight, and regular, but slightly thicker than the left humerus; it is, however, three-quarters of an inch shorter. The skiagrams Nos. 2, 3, and 4, taken by Mr. Wilson and Dr. Gilbert Scott one week and two and six months respectively after operation, show the gradual deposit of new bone and some absorption of the ebony rod.

The clinical diagnosis of a benign bone cyst presents considerable difficulties, but a thoughtful consideration of the history and physical signs and, above all, a careful interpretation of a good skiagram will ensure a correct diagnosis in the majority of cases. There is often little or no pain, and it is not until a fracture takes place that attention is drawn to the bone. In the present case the boy had no pain before the first fracture, and when the bone had united he had no further trouble until the second fracture occurred. On the other hand, there may be a good deal of pain, as in a case recorded by Jones and Morgan. The cyst was situated in the proximal phalanx of the index finger, which had been swollen for some years. At an early period pain was absent, but it developed later, radiating at times to the shoulder, and finally becoming so severe that the patient was hardly able to carry on her business as a dressmaker. In other cases pain is only noticed a few weeks before the patient comes under observation, although the cyst may be of considerable size. With the pain there is usually a certain amount of disability.

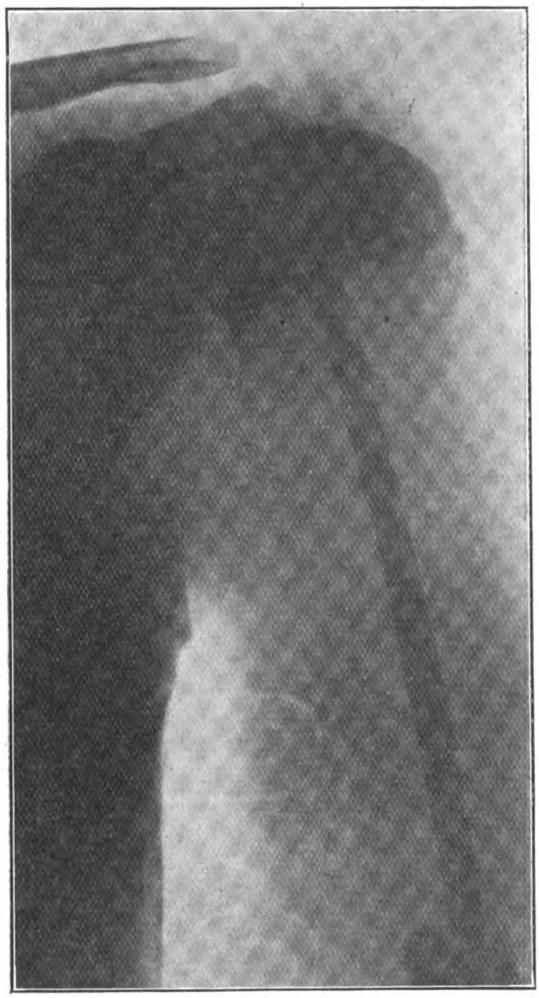
As a general rule these cysts give rise to little pain or inconvenience until they have attained a considerable size, and swelling of the bone is often the only symptom noticed by the patient. But even this may not attract attention until pain, disability, or fracture leads the patient to seek advice, although sometimes, especially in adults, the enlargement of the bone has been noticed for many years, possibly

Fig. 1.



Showing the cyst with fracture. Note the even expansion of the bone, and cupping of the shaft at the lower border of the cyst.

Fig. 2.



One week after operation, the rod *in situ*.

since childhood. As might be anticipated, when cysts occur in such superficial bones as the tibia and phalanges, the enlargement is recognised much sooner than in the case of more deeply seated bones.

The relation of these cysts to injury is an interesting one, and it has often been discussed. Sometimes the history is so definite and the injury so severe that much support is given to the theory that at any rate some of these cysts are traumatic in origin. Beck[1] describes two cases. The first was that of a boy, aged 10 years, who had fallen 11 months previously into an excavation in the street; the fall was followed by intense pain, and a fracture was suspected; the boy was in bed for two days. Four weeks later he fell again, and was in bed for four weeks. A swelling of the size of a filbert was then detected near the spine of the tibia. Six months later he had another fall, and was in bed for six weeks; after that he limped, and the swelling became still larger. A typical cyst was found extending to the epiphysial line; the walls were lined with a smooth membrane, and the cavity was traversed by a few osseous remnants and contained blood-stained serum.

The second case was that of a girl, aged 13 years, who had slipped downstairs eight months previously. The left ankle became swollen and painful, and she was not able to stand again. A cyst was found in the lower third of the tibia; the walls were lined by a layer of greyish-white substance which consisted of cartilaginous tissue, with round cells, and myxomatous and degenerated tissue. The cavity contained black viscid serum.

P. Glimm[2] mentions the case of a boy, aged 12 years, with a cyst in the upper end of the femur, who dated the onset of pain from a fall. Tietze[3] alludes to a girl with cysts in the right femur and tibia, who had had pain in the right thigh ever since a fall on ice 13 years previously. Similar cases have been described by Bloodgood,[4] Buchanan,[5] and others.

The following case described by Glimm[6] is attributed by him directly to the injury, and probably correctly so. A man, aged 25 years, had a severe blow on the anterior border of the tibia six months previously; he was in bed for three weeks with swelling and ecchymosis. The X rays and subsequently operation revealed a cyst of the size of a large plum in the thickened cortex; it had no connexion with the medullary cavity and was filled with blood. Glimm considered the case one of aseptic osteo-periostitis. This cyst

FIG. 3.

Two months after operation. The rod can still be seen indistinctly.

FIG. 4.

Six months after operation, showing the formation of new bone.

[1] American Journal of the Medical Sciences, vol. cxxi., p. 666.

[2] Glimm: Deutsche Zeitschrift für Chirurgie, Band lxxx., S. 476.

[3] Verhandlungen der Deutschen Gesellschaft für Chirurgie, 1906, Band xxxv., S. 167.

[4] Journal of American Medical Association, vol. xliii., 1904, p. 1124.

[5] Glasgow Medical Journal, 1882, vol. xvii., p. 340.

[6] Glimm: Ibid.

differed from the majority of bone cysts in being situated in the cortex instead of in the medulla, and instead of the bone being thinned and expanded it was actually thickened.

Müller [7] found that in 40 cases of bone cysts no less than 27—i.e., 67·5 per cent.—occurred in patients under 20 years of age, and 50 per cent.—that is, 20 out of the total 40—in patients between 10 and 20 years. Of the rest, 6 occurred in patients between 20 and 30 years. He also found that the majority of cysts are met with in the big long bones, the femur, tibia, and humerus being responsible for 38—that is, 76 per cent. of 50 cysts occurring in 43 patients. Cysts were most frequently found in the femur, 38 per cent. occurring in this bone, 22 per cent. in the tibia, and 16 per cent. in the humerus. The cysts may be multiple, several bones being affected in the same patient.

As the cyst develops the cortex is expanded and progressively absorbed until there is only a very thin shell of bone under the periosteum. A fracture then results from a very slight injury, or even from muscular action, though it may take place before this extreme stage is reached from a degree of violence which would not cause a fracture in a normal bone. In a number of cases the patient first came under medical observation on account of the fracture, the presence of the cyst having given rise to no symptoms previously, or at any rate to symptoms which were so slight that they were neglected by the patient. Such cases have been recorded by Glimm, Bloodgood, and others. The case which I have recorded is of interest in that fracture occurred on two separate occasions, at an interval of two years. Another point worthy of notice is that the first fracture united firmly, and the arm gave no further trouble till the second fracture took place.

Diagnosis.—Although in a certain number of cases the nature of the bony swelling is suggested by the history and physical signs, in the vast majority a definite diagnosis cannot be made until skiagrams have been taken and carefully examined. In the absence of an X-ray examination the diagnosis will lie between a benign cyst, myeloid or central sarcoma, certain inflammatory conditions, such as abscess, osteitis albuminosa, and so on.

Corson [8] reports a case of a cyst in a girl, aged 21 years, who had had an attack of typhoid fever at the age of 15 years. At 17 years of age she began to have pain in the right arm, and in her eighteenth year, while she was being helped from a train, the right humerus was fractured at the junction of the middle and lower thirds, where she had previously had most pain. The bone united, but the pain persisted. When the bone was finally explored the periosteum was found to be thickened and very adherent, the bone was very thin, and there was a cavity measuring 8 by 3 centimetres, containing clear brownish fluid. No bacteriological examination was made, but the thickening of the periosteum and its adhesion to the bone suggest that the condition was primarily an inflammatory one, possibly a typhoid osteomyelitis.

Eggshell crackling, if it can be obtained, will suggest a myeloid sarcoma or benign cyst, though very occasionally it is met with in other central tumours of bone.

The diagnosis will finally be made on the result of the X ray examination, though Jones and Morgan [9] say that a benign bone cyst cannot be differentiated with certainty from a slow-growing medullary sarcoma from X ray examination alone.

In a skiagram the cyst appears as a clear area in the expanded bone, reaching in a cyst of large size almost to the circumference, so that the actual bony cortex is reduced to a mere shell. A most important feature is the regularity of its outline. The bone has apparently been evenly expanded, so that what is left of the cortex is of a corresponding thickness on opposite sides of the cyst, and, further, the shell of bone presents a somewhat uniform density to the X rays. These cysts, when occurring in patients under 20, are generally found in the neighbourhood of the epiphysis, and it is important to note that they do not penetrate the epiphyseal line and invade the epiphysis.

Trabeculæ are often seen crossing the clear area, but Lexer is inaccurate in giving this as a point of differentiation from myeloid sarcoma, for bony trabeculæ are seen in these tumours.

There is yet one other point of interest, which is well shown in the first four figures in Jones and Morgan's article, and to a certain extent in our own case—namely, increased density of the bone immediately surrounding the cyst. In our case this is only seen where the bone limits the cyst below, but there is here a distinct appearance of sclerosis. The thickening of the bone seen in the case of an abscess enables us to exclude that at once, but a myeloid sarcoma presents greater difficulties. The typical features of a myeloid sarcoma are the irregularity of its outline, the varying thickness of the bony cortex, and the spreading of the growth more rapidly to one side or the other, so that it is asymmetrical, and does not present the uniform expansion of a benign cyst.

It often happens that the diagnosis is uncertain until the bone is actually opened at the time of operation. But then the escape of the serous or mucoid contents, which are sometimes blood-stained, the absence of growth or at the most the presence of cartilaginous masses in the walls of the cyst, and in many cases the presence of a lining membrane, leave no room for doubt.

Sometimes a bone cyst represents a myeloid sarcoma which has undergone extensive degeneration (Tietze [10]) but in this case, if other means of diagnosis fail, microscopical examination of the wall of the cyst will solve the difficulty.

Mr. F. S. Eve [11] has recorded an interesting case of a central sarcoma of the tibia involving the whole length of the bone. In the upper half the growth had undergone complete cystic degeneration.

Cysts may form as the result of osteitis albuminosa without any necrosis (Riedel [12] (Jena) and others), but in these cases one would expect distinct thickening of the bone and possibly of the periosteum. A bacteriological examination of the fluid might be positive.

Treatment.—In considering the treatment of this condition, we must not only cure the patient, but at the same time we should ensure a useful limb; this is especially important if a great part of the shaft of the bone is involved and the bony tissue replaced by the cyst.

Bloodgood, Sonnenburg,[13] and others were content with incising the bone, scraping the cyst wall, and packing the cavity with gauze. This gives a satisfactory result in the end, but it entails a tedious convalescence, and is not applicable in the case of a large cyst, especially if associated with a fracture. If the cyst is a small one, it is far better to scrape the walls thoroughly, sew the periosteum together, and close the wound, allowing the cavity to fill with blood clot. This will in time be absorbed and replaced by bone. Beck has slightly modified this by curetting the cavity and then pressing the osseous walls together.

Alternative methods are filling the cavity with decalcified bone, Mosetig-Moorhof's iodoform wax, or injecting paraffin, as suggested by Mr. A. J. Walton [14] in the treatment of chronic abscesses of bone. In the case of small bones resection is a suitable form of treatment, and was carried out by Müller on a patient who had a cyst of the fourth metatarsal. If, however, the cyst is so large that it occupies a considerable part of the shaft and little more than a shell of bone is left, and the bone is an important and independent one, it is advisable to provide an internal splint which will act as a scaffold and be a rigid support for the periosteum and other soft structures until the new bone is formed.

Mr. Harold Stiles by subperiosteal resection of the affected part of the diaphysis and subsequent suture of the periosteum has obtained some admirable results in the treatment of tubercle of the diaphysis of the bones of the leg and forearm. If, however, the femur or humerus is involved extension for some weeks is necessary to prevent shortening and angular deformity.

Lexer [15] in 1906 recorded a very successful case. The patient, a boy aged 14 years, had a cyst in the upper third of the humerus. The affected part of the bone was resected subperiosteally, and the deficiency made good by inserting a piece of a fibula which was removed with its periosteum from a recently amputated limb. The periosteum was sewn up,

[7] University of Pennsylvania Medical Bulletin, September, 1906, p. 173.
[8] Annals of Surgery, April, 1902, p. 505.
[9] Archives of the Roentgen Ray, April and May, 1907.
[10] Deutsche Gesellschaft für Chirurgie, Band xxxv., 1906, S. 167.
[11] Transactions of the Pathological Society of London, 1882, vol. xxxix., p. 273.
[12] Deutsche Gesellschaft für Chirurgie, 1906, Band xxxv., S. 174
[13] Deutsche Zeitschrift für Chirurgie, 1880, Band xii., p. 314.
[14] THE LANCET, Jan. 18th, 1908, p. 155.
[15] Deutsche Gesellschaft für Chirurgie, 1906, Band xxxv., S. 165.

the wound healed well, and the ultimate result was most satisfactory.

Alexis Thomson [16] recently showed a boy, aged 11 years, before the Edinburgh Medico-Chirurgical Society in whom the middle third of the humerus had been resected for sarcoma, a portion of the fibula being inserted in its place.

In our case the special points for consideration were the extremely thin, bony shell in the upper third of the bone, the fracture through this thin bone, and, lastly, the fact that the cyst extended up to the epiphysis. It was obvious that a thorough curetting would lead to further fracture of the bone, and that unless the proper distance between the epiphysis and shaft were maintained the ultimate result would be very bad; there was also the difficulty that the small epiphysis could not be controlled by any ordinary external splint. It occurred to me that an ordinary colotomy spigot would fulfil the necessary conditions. The periosteum was, therefore, stripped off the bone and the diseased part resected. Healthy bone was sawn through below and the upper end was twisted away from the epiphysis. The point of the rod was inserted into the soft epiphysis and the blunt end into the healthy medullary canal of the shaft below; in this way the epiphysis was fixed and maintained at its proper distance from the remaining shaft, and it was hoped that by sewing the periosteum round the rod the shape of the bone would be preserved. The subsequent history of the case is uneventful. New bone was gradually formed from the periosteum, and at the present time, fourteen months after the operation, the affected arm is as strong and as useful as the other.

The special points of interest in this case are the typical history, the two fractures from slight injury occurring at an interval of two years, the simple method of fixing the epiphysis to the remnant of the shaft, and the satisfactory shape and quality of the new bone.

Pathological Report by Dr. TURNBULL.

Macroscopic.—The specimen consists of a portion of bone about one and a half inches long. The bone is devoid of periosteum. The cortex is dilated in the upper part to form a thin, brittle shell which bounds a cup-shaped cavity in the upper part of the medulla. From the floor of this cavity a vertical septum projects for a short distance. The inner surface of the cavity is not quite smooth. A little blood clot and some tough, yellow, opaque tissue are adherent to it. The septum is of a rusty brown colour, and is tough and pliable. On vertical section through the centre of the bone the medulla for three-quarters of an inch below the floor of the cavity is found to be occupied by an abnormal tissue which also forms the septum. This tissue is red and gelatinous, with some minute, grey, refractile areas which suggest cartilage. Gritty particles can be felt with the point of the knife. This tissue is sharply limited from red marrow which lies beneath it. The corticalis in this lower part is of normal appearance. It is hard and of compact structure. It gradually thins to form the wall of the cup-shaped cavity.

Microscopic.—Small portions of the tough tissue adherent to the inner surface of the cystic cavity were removed, cut upon the freezing microtome, and stained in methylene blue and in hæmatoxylin during the progress of the operation. Larger portions of the same tissue were embedded in paraffin without decalcification. Finally, a portion of the bone, including the floor of the cavity above and the normal medulla below, was rapidly decalcified in nitric acid. Unfortunately, in order to prepare the report quickly, paraffin embedding was employed and this necessitated the removal of the greater part of the cortex.

Vertical sections of the bone show five zones of different appearance which merge with one another.

1. The surface towards the cavity is bounded in most of its extent by a zone of tissue which resembles in structure the portions of tissue removed from the lining of the cavity for the preliminary examinations.

The tissue consists of a net of broad moniliform hyaline bands separated by narrow clefts. In places the clefts widen out into larger areas of cellular tissue of the same structure as the stroma of the next zone. The hyaline bands contain no nuclei. Stained by van Gieson's method they are red and show whorls of ill-defined, very fine, more deeply stained fibrils. In some sections a few of the bands are impregnated by calcium. They do not give the staining reactions of cartilage, but appear to consist of an osteoid tissue in which there are no bone cells.

The cellular tissue in the clefts has a very pale matrix, which is stained a faint yellow in van Gieson. In this are relatively few spindle and stellate cells, which anastomose by long delicate processes. The nucleus is elongated oval. The cells are very uniform in size, shape, and staining reaction. The outermost cells lie flat upon the hyaline bands. In the centre of the cleft there is usually a capillary which is lined by a single row of spindle cells. There are many extravasated red corpuscles in this cellular tissue and much intra- and extra-cellular pigment. This pigment gives an iron reaction when treated by Turnbull's blue method. There are also considerable numbers of lymphocytes and an occasional plasma cell or eosinophil leucocyte.

The surface exposed to the cyst cavity is covered by red blood corpuscles with some fine fibrin filaments (Wiegert-Gram stain). Immediately beneath this the tissue appears to be degenerate. The hyaline bands stain feebly and the spindle cells in the clefts between them are not visible. Numerous red corpuscles are present here in the clefts.

2. Below this zone is a large area of delicate, œdematous, fibrous tissue. This is continuous with that seen in the clefts between the hyaline, osteoid bands. It is traversed by some very long and remarkably slender trabeculæ of lamellar bone. It also contains a few small portions of membrane bone.

The fibrous tissue shows a pale matrix which does not give the staining reactions of mucin. In this there are some very fine fibrils which are stained pink by van Gieson's stain, and relatively few slender, spindle, and stellate cells—which have long protoplasmic processes. There are many capillaries and there are numerous large extravasations of red blood corpuscles. A few lymphocytes are also present. In some sections there is a small area which differs considerably from the rest. It contains a few small narrow trabeculæ of coarse fibrillar osteoid tissue and bone. On the surface of one of these there are some osteoclasts. In the surrounding tissue there are several (13 in one section) multinuclear giant cells of similar structure to the osteoclasts. Further, the spindle cells are much more numerous, smaller, and less elongated. They also vary slightly in size and shape. There are no atypical nuclei, however.

In this fibrous tissue there is a large rounded space. It is in part sharply defined, in part ill defined, being bounded by a portion of the fibrous tissue which has been destroyed by hæmorrhage. It is filled by red corpuscles with a few fibrin filaments. Serial sections show that this space communicates with the main cavity.

The tissue contains some bony trabeculæ. As mentioned above, some small trabeculæ of coarse-fibred osteoid tissue or bone were found. There are also a few very long and exceedingly slender trabeculæ of membrane bone. These extend from the upper to the lower boundary of this zone and anastomose with one another. They have a narrow core of a substance in which there are no nuclei. This substance has a marked affinity for hæmatoxylin. In sections stained with Weigert's iron-hæmatoxylin and van Gieson and differentiated for a considerable time in water, it is stained blue in contrast to the bone and osteoid tissue. It thus reacts like the remnants of hyaline cartilage in the trabeculæ of normal bone. Further, in sections treated with Twort's stain (neutral red and light green) it is stained a bright red. Control sections show that hyaline cartilage is stained bright red by Twort's stain, whilst bone and osteoid tissue are stained green. The core therefore consists of hyaline cartilage in which there are no cartilage cells. Its outline is exceedingly irregular, showing numerous bays and blunt processes. It often appears to be interrupted. Unlike the remnants of cartilage in trabeculæ of normal bone, its margins are not sharply defined. They are stained deeper than the central part and show a felt-work of short, delicate fibrils which pass into the superjacent bone. In a few places these cartilaginous strands have bone on only one side, or both sides are free from bone and in contact with the fibrous tissue. In the greater part of their extent, however, they are covered by a narrow layer of lamellar bone. The latter has an osteoid zone on which a row of osteoblasts rests. Near the upper boundary of this zone a few fragments of similar hyaline cartilage are covered by a broad layer of osteoid tissue. The latter is devoid of nuclei and resembles in structure the hyaline bands of zone No. 1.

[16] Brit. Med. Jour., Dec. 18th, 1909, p. 1751.

There is also in this situation a small mass of similar hyaline cartilage. It consists of a network of narrow irregular trabeculæ enclosing very small spaces. The edges show the same felted fibrils, and these often bridge the spaces. In the spaces there is fibrous tissue containing cells which resemble osteoblasts. This fibrous tissue is in a few places osteoid.

3. In the periphery of the above area there is a broad zone of fibrous tissue which contains many trabeculæ of lamellar and membrane bone. This zone is semicircular and bounds the area of zone No. 2 not only inferiorly but laterally.

The fibrous tissue is continuous with that of zone No. 2. Here, however, it appears less œdematous. The fibrils are slightly more distinct and the elongated spindle cells are relatively more numerous. The capillary spaces are much larger. Lymphocytes are more numerous. There are also a few myelocytes and pigment granule cells.

Some of the trabeculæ consist entirely of membrane bone. These are more numerous towards zone No. 2. The majority consist of lamellar bone and many are segmented showing several lamellar systems. The largest trabeculæ are as stout as those in a control section taken from the diaphysis of the humerus of a boy aged 11 years. Almost all, however, contain, centrally, small fragments of membrane bone. Cartilage is not present. Osteoblasts rest upon the surface of a narrow osteoid zone. Osteoclasts in lacunæ are fairly numerous.

4. Separating the above zone from the normal medulla beneath is a narrow zone in which the fibrous tissue is much denser and contains stouter collagen fibres. In it there is a large amount of pigment which gives an iron reaction when treated by the Turnbull's blue method. It also encloses collections of myelocytes. In a section stained with Weigert's elastin some elastic remnants were found which were evidently derived from destroyed vessels. This zone is slightly bowed, with its convex surface towards zone No. 3. No trabeculæ of bone cross it, but a row of trabeculæ lies upon, and parallel to, its upper surface. It is continued upwards to separate the lower lateral aspect of zone No. 3 from the marrow beneath the cortex. Here it is deeply pigmented but is very ill defined and much less dense. The connective tissue cells and fibres of this zone are continuous with the supporting tissue of the marrow in zone No. 5.

5. This zone consists of normal medulla below the abnormal tissue and on its infero-lateral aspect. The marrow is cellular with small groups of fat cells. The cells consist of myelocytes and the other constituents of normal marrow; megakaryocytes are abundant. The supporting tissue of the marrow merges with the fibrous tissue in zone No. 4. The trabeculæ are of normal appearance. They are formed of lamellar bone. They are covered by osteoblasts. The osteoid zone is very narrow.

In sections treated with Weigert-Gram's and Twort's stains no bacteria were found.

Summary of microscopic report.—The microscopic structure of the cyst may be summarised as follows. It lies in a mass of solid tissue and has no epithelial nor endothelial lining. The surrounding mass consists essentially of a delicate fibrous tissue containing fine collagen fibrils and relatively few spindle and stellate cells. There are many capillaries within it and numerous areas of hæmorrhage. Blood pigment is present, especially in its periphery. It contains considerable numbers of lymphocytes and a very few eosinophil leucocytes and plasma cells. Where this fibrous tissue bounds the cyst it contains closely packed trabeculæ of an osteoid tissue devoid of nuclei. A few of these trabeculæ are impregnated with calcium. External to this it contains a very few small trabeculæ of membrane bone or osteoid tissue, and is traversed by a few remarkably long and slender trabeculæ of lamellar bone with a core of hyaline cartilage. There is also a small group of trabeculæ of similar cartilage; these are arranged in a reticular manner and enclose a tissue which contains osteoblasts and is in places osteoid. None of the cartilage contains cells. The fibrous tissue then becomes somewhat less œdematous and contains larger capillary spaces. It now occupies a zone in which there are many trabeculæ of membrane and lamellar bone. The trabeculæ of lamellar bone almost all contain portions of membrane bone in their centres. The majority of these trabeculæ are large and stout. Finally, at the periphery of the mass is a narrow zone in which the fibrous tissue is denser. Here it contains a very large amount of blood pigment. It also contains groups of myelocytes. It is not traversed by osseous trabeculæ. Its cells and fibres merge with the supporting tissue of the marrow of the medulla. This marrow and the trabeculæ of bone within it are of absolutely normal appearance.

Active resorption of bone in the fibrotic area is evidenced by a few osteoclasts in lacunæ upon the small membranous trabeculæ in the neighbourhood of the innermost zone and the lamellar trabeculæ in the third zone. Apposition of bone is much more general; the majority of the trabeculæ show an osteoid zone covered by osteoblasts.

One small area was found in which the fibrous tissue was much more cellular and contained multinuclear giant cells.

In the fibrous tissue there is a small cyst which communicates with the main cyst. It has no epithelial lining. Its wall is in part well defined, but not bounded by trabeculæ of osteoid tissue such as are present in the margin of the main cyst. The rest of its wall is ill defined and consists of an area of the fibrous tissue which has been destroyed by hæmorrhage.

Remarks.—The relative scarcity of the cells in the fibrous tissue, their uniformity and the structure of their nuclei exclude the presence of sarcoma. The small cellular area which contains multinuclear giant cells might, if seen alone, suggest giant-cell sarcoma. But here also there is little polymorphism in the cells, and no atypical nuclei are seen. The presence of giant cells and the increased number and younger form of the connective-tissue cells are explained by the active resorption and formation of membrane bone which are seen in this area.

In its structure and in its mode of transition into the normal marrow the fibrous tissue resembles that of a myelitis rather than that of a benign neoplasm. The narrow, denser zone at its periphery has not the characteristics of a pressure capsule. It is well defined only where it separates the fibrotic area from the subjacent medulla; it is very ill defined on the lateral aspect. Further, where it is well defined, its convexity is directed towards the centre of the fibrotic area. The increased density may possibly be due to the irritation of the abundant pigment. It is more probably due to mechanical influences; either to slight lateral movement of the fibrotic area upon the subjacent medulla, or to partial or complete separation at this point. The arrangement of the trabeculæ on its superior surface and the destruction of small vessels within it are in favour of such a mechanical origin.

The general arrangement of the abnormal fibrotic area suggests a chronic inflammation with the point of maximum intensity in the situation of the cyst. The formation of the osseous trabeculæ is greater in the periphery—that is, in the third zone. Such a picture may be seen where an area of medulla has been destroyed by a known inflammatory process. But the minute histological structure affords no evidence of any specific inflammation. A few plasma cells and eosinophil leucocytes were found on careful search, but these are not present in sufficient numbers to justify a diagnosis of chronic septic inflammation. Moreover, cysts due to chronic infection by pyogenic organisms (osteitis albuminosa) have been found in the medulla of the long bones and these differ in structure markedly from this cyst. Braun,[17] for instance, described a cyst from which staphylococcus pyogenes albus was cultivated. The cyst had caused a local swelling in the tibia of a girl, aged 18 years, and had been present for several years. Its presence was not accompanied by fever. But in this case the corticalis was thickened and the cyst was lined by a whitish membrane. The microscopic structure was typical of chronic septic inflammation; the wall of the cyst consisted of granulation tissue which contained numerous fat-granule-cells and was extensively infiltrated by polymorphonuclear leucocytes. Further, diplococci were demonstrated by Gram's method. The abnormal tissue therefore appears to be a fibrosis of the marrow of inflammatory origin, but there is no evidence of any specific irritant. The structure of the trabeculæ in the third zone witnesses to the chronicity of the process. The portions of membrane bone within them show that they originated in an abnormal process of ossification. Their large size and their division into lamellar segments show that they have been present for a long time.

Hyaline cartilage is present. The extreme length of the

[17] Professor Dr. Braun: Beiträge zur Klinischen Chirurgie, Band III., 1907, S. 476, Fall 1.

strands of this cartilage and their disposition show that they are not connected with the normal endochondral ossification. But the structure has no resemblance to an ordinary enchondroma. The cartilage is either the remnant of a large mass which has been almost completely replaced by the fibrotic marrow or it has been formed by the fibrotic marrow. From the histological appearances it is impossible to decide with certainty which of these processes has occurred. The margins of the cartilage are rarely well defined; fine fibrillar brushes pass into the bone or osteoid tissue which has been deposited upon them. They have not the sharply-cut appearance which is seen in the cartilaginous remnants in normal endochondral ossification or in the ossification of ecchondroses. This indicates that the cartilage has not been eroded by the fibrous marrow. But such frayed edges might be the result of degenerative dissolution. It may be said that the histological appearances are in favour of the view that the cartilage has been formed by a metamorphosis of the fibrotic marrow analogous to that which has led to the formation of the osteoid tissue and membrane bone.

The formation of cartilage might be an accidental complication due to the healing of a fracture or infraction. But this explanation is inadequate in other cases of bone cysts in which cartilage was present. Again, cartilage has been found rarely, if ever, in cases of osteitis fibrosa (von Recklinghausen,[18] Rehn,[19] Mönckeberg,[20] Gaügele[21]) in which there has been a similar rarefaction leading to fracture of the long bones. In this connexion it may be mentioned that the structure of the wall of the recent accessory cyst suggests that the main cyst has been formed by solution of the fibrotic marrow and not by degeneration of any cartilaginous remnant or growth.

The structure of that portion of the medulla which is not involved in the fibrosis shows that no general disease of the skeleton is present. Thus the narrowness of the osteoid zone upon the trabeculæ excludes active rickets and osteomalacia.

It may therefore be concluded that the formation of the cyst is associated with a local process which is of the nature of an inflammation. This process has led to fibrosis of the marrow with destruction of old bone and the formation of recent osteoid tissue, membrane and lamellar bone. The process is of long duration. The process has also led to the formation of hyaline cartilage; or possibly the process has been provoked by the degeneration of an abnormal deposit of cartilage.

It is impossible to make a more precise conjecture as to the nature of the morbid process without first analysing the other reported cases of bone cysts, of osteitis deformans, and of osteitis fibrosa. Owing to want of space here this analysis has been reserved for publication elsewhere.

[18] Von Recklinghausen: Festschrift. Rudolph Virchow zu seinem 71 Geburtstage gewidmet von den früheren und jetzigen Assistenten. Berlin, 1891.

[19] Rehn: Verhandlungen der Deutschen Gesellschaft für Chirurgie, Band xxxiii., 1904, S. 424.

[20] Mönckeberg: Verhandlungen der Deutschen Pathologischen Gesellschaft. 7 Tagung. 1904, Heft 1, S. 232.

[21] Gaügele: Langenbeck's Archiv für Klinische Chirurgie, Band lxxxiii., 1907, S. 953.

ANAPHYLAXIA IN HAY FEVER, NETTLE-RASH, AND ASTHMA.

BY G. BILLARD,

PROFESSOR TO THE MEDICAL COLLEGE OF CLERMONT-FERRAND; PHYSICIAN AT THE HÔTEL-DIEU.

IN a memoir published in conjunction with L. Maltet in the *Journal de Physiologie et de Pathologie Générale*[1] I have set forth a very ingenious theory advanced by Professor Langlois: "Hay fever is a good example of anaphylaxia so closely studied by Ch. Richet; a first attack, far from imparting immunity, renders the subjects extremely susceptible." Thus, for several years an individual is attacked by continual catarrh to which he does not attach any great importance; anaphylaxia does its work, and eventually the patient is exposed to infection and has a fit of asthma.

I wish to place special emphasis on this theory, that all persons attacked by hay fever are anaphylactised persons. I will proceed, first of all, to reproduce the observation of my co-worker, Maltet. This observation shows very clearly the successive steps in the strides of the disease from nasal catarrh to a bad attack of asthma.

M—— is asthmatic, periodically asthmatic. At first qualifying for a doctor in pharmacy, from 1894 to 1897 he suffered very frequently from nasal catarrh when handling the drugs, but he took no notice of it and never felt difficulty in breathing. During his year of military service the colds in the head disappeared, although he frequently slept amongst the hay, but in very airy spaces. M—— then passed four years at the Medical College of Lyons, and the symptoms of catarrh only appeared at rare intervals, in spite of his assiduous work at first in Professor Grola's and afterwards in Professor Lepine's laboratory.

He went, as a young practitioner, to live, in 1902, at Clermont-Ferrand in a workshop close to the house of a herbalist. After a short time frequent attacks of the catarrh appeared, then one day shortness of breath came on unexpectedly: M—— was very asthmatic.

He prescribed at first for himself with old drugs ready to hand. The attacks became more frequent, more acute. His doctor advised a season at Mont-Durant, and during this time there were no attacks, but the return to the pharmacy brought on the complaint afresh.

After visiting a specialist for nasal disorders, who cauterised, performed resection, and removed certain portions of the mucous membrane, he felt no relief; the disease lay in wait for him at his doorstep. The attacks became terrible and alarming. The patient was compelled to leave his home in order to obtain relief and a return to a normal state; he did not dare to return home. He went to Dr. Garel, who advised him to give up the pharmacy.

M—— then commenced his medical studies. He had no longer the fits of asthma, but he was always very sensitive to a large number of pollens and germs whenever he happened to be in their presence in a confined space where they were in suspension.

This observation, then, is most instructive and shows in a striking manner the progress of anaphylaxia. As a result of my own research and study in this direction for a period exceeding six years, I could bring forward a great number of similar observations, and all whom this question interests can recall identical facts in their practice or from their medical memoranda. At the present time it seems to me irrefutable that all the asthmatic symptoms of hay fever, or rather that those which began by a hay-fever cold and which have increased to fits of asthma, have been thus evolved by an anaphylaxia peculiar to pollens and germinating dust.

In the memoir previously quoted I mentioned that, as an explanation of this peculiar sensitiveness of certain subjects to pollens and germinating dust, I had adopted the hypothesis of Withehill Hinkel of Buffalo, who recognises three conditions essential to the production of hay fever: (1) A nervous temperament, hereditary or acquired; (2) a sensitiveness, or a peculiar morbid excitability of the mucous membrane, or indeed a nasal complaint; and (3) an external irritant. I now extend these three conditions to hay asthma and to ordinary asthma. After very close observation of my patients I have come to this conclusion, that the majority of subjects attacked by hay fever or asthma are persons hereditarily anaphylactic, or have during their life acquired anaphylaxia. As a result of Professor Richet's remarkable discovery, that certain poisons injected in animals are capable of altering the organisms of the latter to such an extent that they become more and more sensitive to these poisons, it would appear that a whole series of inexplicable disorders find an easy explanation if anaphylaxia is taken into consideration.

In a recent clinical lecture[2] Professor Hutinel says "that acetonæmic vomiting may be considered a sort of digestive asthma. The bilious headache represents, on the other hand, a kind of nervous asthma; eczema, a cutaneous asthma; and gout, an asthma of the joints. The common ground of arthritis brings these diverse complaints into close connexion. Thus it is common to find amongst the ancestors of asthmatic persons nervous troubles, gout, diabetes, obesity." In my opinion, all these manifestations depend on anaphylaxia.

A manifestation of anaphylaxia which in my eyes ranks prominently amongst the neuro-arthritics is nettle-rash, which is frequently observed in the course of anaphylactic accidents such as poisoning by shell-fish, by certain fruits such as strawberries, and certain medical products such as antipyrin. For some years I have been struck with the fact that it is rare for a neuro-arthritic in the course of his life not to have had nettle-rash of some sort. Not only does one discover this nettle-rash among the individuals affected, but almost always in their hereditary family antecedents.

Dr. I. N. came of ancestors suffering from arthritis in an

[1] Essais de Sérothérapie contre le Rhume des Foins et contre l'Asthme, par G. Billard et Maltet, Journal de Physiologie et de Pathologie Générale, March, 1907.

[2] Le Correspondant Médical, January, 1910.

acute form, but he only of the family had had poisonous nettle-rash. During his childhood he ate daily, and in considerable quantities, all kinds of sea fish and crustacea without any apparent change in his health, which up to then was excellent. At 18 years of age certain things happened. 1. When 18, at an evening meal, he partook of skate; at the end of the meal, left alone by the guests, he was affected with inconvenience in breathing, with a generalised form of nettle-rash, and afterwards with asphyxia; ipecacuanha was given, and a complete cure effected in one night. 2. Some months later at the evening meal he ate some mussels. At the end of the repast the same acute symptoms occurred, and the same cure was effected by an emetic. 3. When 19 years, he partook of some sea-crayfish at the evening meal. Towards 11 o'clock cutaneous nettle-rash appeared with hissing noises in the bronchial tubes. Of course, after each occurrence he gave up the incriminating food. 4. When 25 years old, one evening he was tempted by some very fine mussels. He ate one only. In the night he was attacked by a mild form of nettle-rash. 5. When 50 years of age, he ate oysters in the evening; in the night nettle-rash and hissing noises in the bronchial tubes ensued. 6. At 56 years, he ate a little red mullet from the Mediterranean, and this caused a mild fit of asthma and some irritation in the chest in the night.

Here, then, was a patient who, by means of successive nettle-rash producing reagents, was brought to an asthmatic condition. This picture, unless one is mistaken in it, resembles the notes on M. reproduced above.

If nettle-rash is really an anaphylactic manifestation we ought to find it in cases of asthmatic patients. There does not appear a doubt that nettle-rash is a manifestation of anaphylaxia, as the works of Bruck witness.[3]

It is known that Wolf Eisner has expressed the hypothesis that nettle-rash is an anaphylactic phenomenon connected with the foreign albumins in the organism. In order to prove this theory the author has carried out research work to see if substances which are known to excite nettle-rash in man are capable of giving rise to anaphylaxia in animals, such as rabbits and guinea-pigs, which have been injected previously with the serum of the pig or the extract from the muscle of the crab. Now these animals present, after renewed injections from these substances, typical phenomena of anaphylaxia; again, the injection of the serum from these anaphylacticised animals into other animals was found to render them hyper-sensitive.

The author has been able to establish, moreover, that in the case of man alimentary nettle-rash was an anaphylactic reaction. A young man could not for two years after having eaten a pork sausage, which produced morbid effects, partake of any pig meat without suffering immediately from an extended eruption of nettle-rash. Now the injection of the serum from this man into a guinea-pig excited immediately an extremely clear anaphylaxia with regard to the pig's serum.

It is generally known that the treatment introduced by Dr. Rowland (of East Corinth), who recommended the injection of anti-diphtheric serum as an antidote to hay-fever and obtained at first excellent results, has had to be given up on account of very serious, and sometimes fatal, accidents of anaphylaxia amongst those predisposed. I have, on my part, observed a nettle-rash and grave anaphylactic accidents in the case of a young child (asthmatically) predisposed, following an injection of Roux's serum in the course of diphtheria.

What are the substances which can cause anaphylaxia? I cannot do better than refer to the work of Armand-Deville,[4] from which I extract the following law:—

> There exist a certain number of organic substances which, introduced for the first time into the organism, in innocuous doses, have the property of producing in the organism, after a fixed period of incubation, anaphylaxia—that is, an extreme sensitiveness to minimum doses of the same substance, which produce no trouble in an organism not so treated. This anaphylactic condition appears to be connected with the development in the organism of a body, or of a special property which exists, amongst others, in the serum of the blood, since by introduction of this serum into another individual of the same species this person is immediately plunged into a state of anaphylaxia.

These substances, of organic origin, are derived either from the animal or the vegetable kingdom. They are introduced usually by the digestive tract. Others, on the contrary, penetrate through the respiratory tract or through the mucous membranes of the eye.[5] It is especially these last which interest us here. The toxic albumins, pollens and germs, which reach the mucous membranes of the eye or of the upper respiratory tracts cause there what I have called up to the present nettle-rash in the upper respiratory tracts.

In the memoirs published in conjunction with Maltet, at first in the *Journal de Physiologie et de Pathologie Générale*, then in the *Gazette des Hôpitaux*,[6] I have said that essential asthma, irregular in its recurrences, can be excited by the toxic albumins, pollens and germs. I am obliged to recognise to-day that these last toxic substances are not the only ones to provoke the fits of asthma, and with certain of my patients I have seen these appear as a sequel of indigestion from high game, and also following the indigestion from sea fish, crustacea, &c. And thus, as the data I published quite recently indicate, very slight proportions of substances introduced into the stomach are able to cause the attacks. I am convinced that it is for this reason that diet-tables have been established empirically at the spas where neuro-arthritics are treated. These diet-tables have, in effect, as their aim the suppression, as far as is possible, of anaphylactic substances. Now, even there individual susceptibilities are not taken into account, so that a patient who would never have an asthmatic attack in eating sausage would show symptoms of such an attack if he had taken an oyster. There are, I believe, few persons who have not observed for themselves that certain foods and certain substances do not "pass," causing various forms of indigestion, regarded as trivial, which are in reality nothing less than anaphylactic manifestations of the organism. Moreover, certain poisonous foods, and in particular the poisons conveyed by certain kinds of fish, by crustacea or molluscs, and even the nettle-rash produced by strawberries,—all these, it seems, can legitimately be placed under the phenomena of anaphylaxia, although it has not been possible, experimentally, to obtain the anaphylaxia with serum. It is, however, in consequence of the possibility of this process that Hutinel has been led to hold the view that intolerance to certain nutriments, both in the maternal milk and in cow's milk, is a true manifestation of anaphylaxia in milk. Again, we are certainly entitled to place in the category of anaphylactic reactions, although the intimate mechanism of them may be slightly different, the phenomena that the inoculation of tuberculin produces in a tuberculous subject.

Everybody is aware to-day that in hereditary neuro-arthritis different conditions are transmitted which constitute varying manifestations of neuro-arthritis. It is known, for instance, that a corpulent person will have a gouty son; that this gouty son may have an asthmatic or diabetic son, or one subject to gravel, &c. In a family that I attended for four years in the south I was able to state the following facts: a grandfather with thickened arteries and chronically rheumatic; a grandmother literally poisoned every time she ate sea fish or crustacea, having, moreover, eczema in the hands every time she touched primroses, the cause of which was for long unknown; a daughter, cholo-lithic; grandsons, the first asthmatic, the second tuberculous, the third attacked by manifestations of poisoning following on indigestion from sausage and oysters.

From the whole of the facts that I have cited above I am able to conclude that neuro-arthritics, and especially asthmatics and those predisposed to hay fever, are victims to anaphylaxia, either acquired or hereditary.

[3] Contribution Expérimentale à l'Étiologie et à la Pathologie de l'Urticaire, Archiv für Dermatologie und Syphilis, vol. xcvi., p. 41. Analysé in Biologie Médicale.

[4] L'Anaphylaxie, Masson and Co., Paris, 1910.

[5] I would add, indeed, that certain of these penetrate through the skin. Certain neuro-arthritics contract eczema in contact with primroses, chrysanthemums, &c.

[6] Billard et Maltet: Gazette des Hôpitaux, 1909, No. 52, p. 651.

TUNBRIDGE WELLS GENERAL HOSPITAL.—Sir David Salomons, Bart., has just presented to the Tunbridge Wells General Hospital some radium, an installation of the Roentgen rays, and a Finsen lamp. The radium will remain in the custody of the hospital authorities, but will be available for private practitioners on payment of a small fee. The Roentgen rays apparatus will amplify that at present in use. The hospital has previously benefited by gifts from Sir David Salomons.

THREE CASES OF THROMBOSIS OF THE LATERAL SINUS

BY J. WALKER WOOD, L.R.C.P. & S. EDIN., L.F.P.S. GLASG.,

FORMERLY HOUSE SURGEON, CENTRAL LONDON THROAT AND EAR HOSPITAL.

THE following three cases occurred during my recent term of office at the Central London Throat and Ear Hospital, and were all under the care of Dr. Percy Jakins, to whom I am indebted for permission to publish them.

Thrombosis of the lateral sinus is one of the complications of middle-ear suppuration that practitioners always have to be on the look-out for. It may show itself as a perfectly clear clinical picture presenting no great difficulties of diagnosis, or, again, should it be masked by signs and symptoms of some other intracranial complication, such as meningitis or brain abscess, it may be a very difficult task to decide the exact lesion with which you have to deal. Haseler's figures show that in 81,684 cases of chronic middle-ear suppuration 116 deaths took place from intracranial complications, and of these 48 were due to thrombosis, 40 to meningitis, and 28 to brain abscess. Figures obtained from the hospitals of London by Pitt show an almost exactly similar proportion. Thus it is evident that thrombosis of the lateral sinus is one of the most frequent, if not the most frequent, complications of a suppurating ear. When the prevalence of chronic suppurative catarrh and the proximity of the lateral sinus to the mastoid antrum (for the antrum is always involved in chronic suppurative catarrh, if not the prime cause of persistence of suppuration in the ear) are considered—it may be the sinus forming one of the antral walls—it is surprising that thrombosis is not more common than it is. I can recall several cases when on opening the mastoid the sinus was found lying bare in the posterior wall of the antrum, covered with granulations and exposed to absolute direct infection. When thrombosis does take place the infection is brought about more frequently through intercommunicating venous channels than by direct extension. This is quite easily understood when the great resisting power of the dura is considered—a resisting power much greater than that of bone; the presence of granulations on the dura in some cases is in reality an additional protection against infection of the sinus.

In all cases of chronic middle-ear suppuration the surgeon ought ever to be on the *qui vive* for symptoms which indicate intracranial trouble. Patients should be warned of the dangers which they run; urgent symptoms should be explained to them, as headache, vomiting, giddiness, shivering fits, mastoid pain, &c. In addition they ought to be impressed with the necessity of immediately reporting themselves to the aural surgeon should one or all of these symptoms become evident. The onset and symptoms of thrombosis are more easily explained by a consideration of the following cases.

CASE 1.—The patient, a male, aged 14 years, was on Sept. 6th, 1909, admitted to the Central London Throat and Ear Hospital with a history of a discharge from the right ear of three months' duration. The discharge ceased suddenly a week previously to admission, and two days later the lad complained of severe pain in the head. The pain was located principally behind the right ear, and was very severe and constant. Since the discharge ceased the patient had had several rigors. There was marked tenderness in the occipital region over the site of the mastoid emissary vein (Griesinger's symptom) and along the line of the internal jugular vein. The head was bent over on to the right shoulder and supported with the patient's right hand. There was no mastoid swelling or tenderness. The temperature was 100·8° F., and the pulse 120, small and weak. Shortly after admission the patient had a severe rigor, the temperature rising to 104°. The tongue was coated and furred. The pupils were equal and active and the discs normal. There was no nystagmus, nor was there rombergism, and the reflexes were normal. Dynamometer: right hand, 50; left, 40. There was no vomiting or nausea, and consciousness was clear and unimpaired. The right meatus was full of inspissated pus and no view of membrane was obtained. A diagnosis was made of thrombosis of the lateral sinus.

Operation.—On Sept. 6th the right mastoid was exposed by the usual incision behind the ear. The mastoid cells were opened and were found to contain pus. The antrum also contained pus and cholesteatoma. The bridge and ossicles were removed. The lateral sinus was next exposed, and as soon as the bony wall was broken through pus welled up into the wound (peri-sinus abscess). The sinus contained a large whitish clot, very offensive, not broken down but firmly adherent. The clot was partially removed with spoon and curette (but not until fluid blood was reached), and the sinus was plugged with iodoform gauze. At this point there was troublesome hæmorrhage from the mastoid emissary vein. The upper flap, which had been cut previously, was stitched into place, a large rubber tube was inserted in the meatus and partial closing of the post-auricular wound completed the operation.

A pathological report of the pus by Dr. Wyatt Wingrave stated that it contained almost every variety of known organisms with the exception of the tubercle bacillus, the predominating ones being the streptococcus, the staphylococcus, the bacillus proteus vulgaris, and the bacillus pyogenes fœtidus.

On Sept. 7th the patient's condition had improved slightly. The temperature was subnormal, and the pulse was 78 and very irregular. Vomiting and rigors were absent. There was slight head retraction. Kernig's sign was present but not marked. When the wound was dressed the discharge was principally blood-stained serum. On the 8th the patient's general condition had greatly improved and the pulse was more regular. There was a slight rise of temperature at 2 P.M., but no rigor. The head retraction had disappeared. The urine contained a trace of albumin. The wound was dressed. The discharge was very fœtid, and on this account a dressing of chlorinated soda was used; the plug in the lateral sinus was also changed. On the 9th the general condition remained good, the pulse being 86 and the temperature 98°. The tongue was coated, but there was no sickness or nausea, and no rigors or headache. There was now no pain on pressure over the internal jugular vein. From the 10th to the 21st there was steady convalescence. The wound was dressed daily, being sponged out with hydrogen peroxide and plugged with plain sterile gauze. The patient was allowed to get up on this day. On Oct. 11th he was sent home. The wound had healed, but there was a slight discharge through the meatal canal. On March 7th, 1910, the discharge had quite ceased and the hearing was good.

This was a fairly typical case of thrombosis of the lateral sinus. The following are the main points of importance:—(1) Cessation of discharge; (2) sudden onset of pain behind the ear; (3) tenderness along the internal jugular vein; (4) shivering (rigors); (5) Griesinger's symptom (tenderness and slight œdema over the site of the emissary vein, although no tenderness or swelling over the mastoid antrum); (6) the discs normal; and (7) consciousness unimpaired.

The next case illustrates well the difficulties of diagnosis. From the history, the examination of the patient, and the lumbar puncture, a diagnosis of meningitis was quite justified.

CASE 2.—The patient, a married woman, aged 28 years, was sent by Dr. J. Read Pooler to the Central London Throat and Ear Hospital to be placed under the care of Dr. Percy Jakins on Dec. 28th, 1909. There had been discharge from the left ear all her life, increasing during the last three weeks. A week before admission there had been a sudden onset of high temperature, ranging from 101° to 103° F., accompanied by a dull, drowsy condition, with head retraction and severe frontal and occipital headache. There was occipital pain radiating down the spine, with marked tenderness in the region of the occiput and over the site of the mastoid emissary vein on the left side. The slightest movement of the head caused severe pain. The patient could be roused to answer a question, but would immediately lapse into a dull, drowsy condition. The face was alternately flushed and pale. The temperature was 100° and the pulse was 100 and irregular. There was obstructive deafness. The meatus was full of inspissated pus; no view of membrane obtained. The tongue was coated and furred. There was no paresis of the ocular muscles or nystagmus, and the pupils reacted to light and accommodation. Slight optic neuritis was present on both sides. The knee-jerks were sluggish, the left one being almost absent. There was ankle clonus on both sides, most marked on the left side. Dorsiflexion on both sides; Kernig's sign present. Lumbar puncture was performed, and 15 cubic centimetres of fluid were

extracted under low pressure. Cells present included polymorphonuclear leucocytes 80 per cent., lymphocytes 20 per cent. Bacteria present were bacillus proteus vulgaris, bacillus pyogenes fœtidus. A culture from the cerebro-spinal fluid showed the same bacteria. An examination of the aural discharge revealed the presence of the bacillus proteus vulgaris, the bacillus pyogenes fœtidus, and staphylococci. There was no sickness, or rigors, or giddiness. A diagnosis of meningitis was made, and it was decided to explore the mastoid.

Operation.—On Dec. 29th the radical mastoid operation was performed by Dr. Percy Jakins. The bridge contained a large cell which was full of pus. A large quantity of pus was also found in the antrum. The lateral sinus was completely thrombosed, and an abscess was found between it and the bone, communicating with an extra-dural abscess in the posterior fossa. Another extra-dural abscess was found above the tegmen antri, which was carious. The dura of the middle and posterior fossæ was carefully examined, but no opening was found. In the course of the operation the external semicircular canal was obliterated. The wound being very fœtid it was dressed with chlorinated soda and hydrogen peroxide, the post-auricular wound being plugged and left open. Towards the end of the operation, whilst on the operating-table, the patient had a severe rigor. On the 30th another severe rigor was experienced and the temperature rose to 105°. The patient was very dull and drowsy and the pulse and respirations were rapid. On Jan. 1st, 1910, the temperature was somewhat pyæmic in type. Lumbar puncture was performed, but no fluid could be got out. On the 3rd the patient's condition was about the same. She could be roused to answer a question, but otherwise she remained in a semi-comatose condition. She had less pain than on admission, and the deafness was less marked. There was a tendency to left-sided facial paralysis. The wound, in spite of daily dressings, was still very fœtid, and the tendency of the temperature was to go up. On the 4th the pus from the wound was examined and was found to contain staphylococci, streptococci, the bacillus proteus vulgaris, and the bacillus pyogenes fœtidus. The patient's general condition showed slight improvement. The temperature varied from 100° to 101°. On the 5th the general condition was about the same. The patient expressed herself as feeling much better. The temperature varied, but the tendency was to keep up. On the 6th the general condition was not so good. The patient complained of headaches and was much duller, and had slight head retraction. The discs were examined again, and the edges were found to be very indistinct. There was marked engorgement of the veins, especially in the right eye; the temperature was still up. On the 15th the temperature gradually became normal and then sub-normal, the pulse remaining rapid. Consciousness became quite clear and the patient's condition was greatly improved. The wound was granulating well, but was discharging freely. On the 17th the temperature was subnormal, with a rapid pulse. The tendency to left-sided facial paralysis was more marked. There were paresis of the left external rectus and marked ankle-clonus, especially on the left side. The left knee-jerk was more active than the right. The left-hand grip was weaker than the right. Giddiness was experienced on sitting up in bed and was rotatory in type, objects appearing to go to the right. There was slight spontaneous nystagmus to the right side. Associated movements could be performed as well on the left as on the right side. There was extreme somnolence, but the patient could always be roused. On the 23rd the patient remained in the same condition, with a subnormal temperature and a rapid pulse, and she complained of headache. The reflexes and the nystagmus were as on the 17th. The patient had vomited twice. The amount of discharge from the wound varied—one dressing would be saturated with discharge, while another would be quite dry. On the 24th the headache had become very severe. Otherwise the patient's condition was unaltered. The giddiness was much less. On the 25th the headache was very severe and was referred principally to the frontal and occipital regions. The vomiting continued. The patient was very dull and sleepy, with a temperature of 97·8° and a pulse-rate of 100. The reflexes were the same as a week ago. An examination of the optic discs revealed a large flame-shaped hæmorrhage on the right side. On account of the headache and the vomiting, and the state of the pulse and temperature, Dr. Jakins decided to explore the temporo-sphenoidal lobe. On the 27th a second operation was performed. The old wound was opened up, an incision was carried up vertically behind the ear, and the periosteum was elevated. A trephine opening was made half an inch directly above the meatus and the middle fossa was opened. The meninges appeared to be quite normal. The dura was incised. The temporo-sphenoidal lobe was explored with the "pus-seeker," but no abscess was found. A small fistula was found in the tegmen antri; this was well opened up. On the 28th, following upon the operation, the patient was very dull and collapsed, the temperature being 96° and the pulse 40. She was semi-conscious, cold, and in a condition of extreme shock, with feeble, irregular pulse and dilated pupils. Brandy, strychnine hypodermically, hot water bottles, and hot saline enemata were freely used. She remained in this condition for two days, when, suddenly becoming fully conscious, alert, and brisk, she desired to sit up in bed to read, and was able to answer any questions intelligently. The sudden change in the condition of the patient was associated with an increased discharge of pus from the mastoid wound. The slight paresis of the face and eye had improved, and the wound was granulating well. On the 31st Dr. Purves Stewart kindly saw the case with Dr. Jakins. He could find no local lesion, only general meningitis. The wound granulated well and the patient made an uninterrupted recovery, leaving the hospital with the wound closed on Feb. 28th, the facial and ocular paralyses having entirely disappeared. When seen on March 12th the patient appeared to be in splendid condition. She had been staying at Bournemouth for 14 days and had not had, she said, a headache since the last operation.

How far the diagnosis was at fault will be readily seen from the subsequent history of the case as narrated above. Meningitis was present, but in addition there was a completely thrombosed sinus, a peri-sinous abscess and an extra-dural abscess. The points in favour of meningitis were: (1) continuous high fever and no rigors until after the operation; (2) the dull and drowsy condition of the patient; (3) the head retraction with pain on movement; (4) the lumbar puncture; and (5) optic neuritis.

During the further progress of the case several points suggested either an extra-dural abscess or a brain abscess. They were: sub-normal temperature and pulse; the ocular paresis; the condition of the reflexes; headache and vomiting; hæmorrhage into the left optic disc; and the variable amount of discharge from the mastoid wound. The giddiness and nystagmus were most likely due to a localised labyrinthitis caused by an injury to the labyrinth during the first operation. The absence of rigors with a totally blocked sinus is worthy of note.

The last case is a further instance of diagnostic difficulties.

CASE 3.—The patient, a male, aged 4½ years, was sent to hospital by Dr. G. Thomson of Ealing. The boy had been operated upon at another hospital for tonsils and adenoids. Fourteen days later the maxillary glands on the right side of the neck commenced to swell and eventually they broke down, forming an abscess, which was opened. During the following week both ears began to discharge. The patient was on June 1st, 1909, admitted to the Central London Throat and Ear Hospital under the care of Dr. Jakins. He was evidently in great pain and was extremely restless. The face was drawn and pinched, and the cheeks were flushed. The temperature was 100° F., and the pulse was 120 and irregular. There was profuse discharge from both ears, with some tenderness of the right mastoid, but no swelling or redness. A large mass of broken down glands in the neck was still discharging freely. There had been no rigors or sickness. Consciousness was quite clear, but the child complained of pain in and behind the right ear.

Operation.—Cortical mastoid right. A post-auricular incision was carried down into the neck to include the old incision made for the abscess. The bone was soft and carious. The antrum when opened was found to contain pus under pressure; the lateral sinus was exposed and was found to be completely thrombosed with granulations all round. As the thrombus consisted of a healthy clot it was not removed, nor were the granulations over the sinus curetted. The bridge was not removed. The wound in the neck was laid freely open and the glands were well scraped. The whole wound was then plugged and left open. On June 2nd the temperature was rising, and the patient was still very restless and in pain. His

general condition remained the same. The wound when dressed discharged freely. Ankle clonus was present on both sides. On the 3rd the temperature was oscillating and the pulse was rapid and irregular, but there were no rigors. The discs were normal. On the 10th there were no rigors but great oscillations of temperature, an evening rise to 103° or more, falling in the morning to normal. The patient complained of headache and of pain in the left ear, but there was no sickness. The chest was examined with a negative result. On the 12th a second operation was performed, Dr. Jakins deciding to explore the left mastoid. The usual incision behind the ear was made and the bone was exposed. The antrum was opened and was found to contain pus under pressure, the surrounding bone being soft and carious and easily removable with a sharp spoon. The lateral sinus was not exposed. The wound was plugged and left open. There was a rise of temperature in the evening to 104°. On the 13th the temperature was still remittent in type but there were no rigors. There was slight head retraction. The patient complained greatly of headache, which was principally occipital. There was no impairment of consciousness. On the foregoing symptoms it was decided to investigate the condition of both sinuses. A third operation was performed on the 14th. The sinus of the right side was first examined and was found to be perfectly patent, although only a fortnight previously it was completely thrombosed. After plugging the right wound the left sinus was investigated, and as its wall appeared to be healthy and as it pulsated freely it was not interfered with. There was great sickness for several hours after the operation with subnormal temperature and pulse. On the 16th the sickness continued, but with no rigors, and there were profuse and marked perspirations, which were limited to the head. Tache cérébrale was well marked; Kernig's sign was present. Ankle clonus was present on the left side. The knee-jerks were inactive and the urine contained a trace of albumin. The child was perfectly conscious and bright. From the 17th to the 27th the temperature continued to oscillate, the oscillations gradually getting less. The lungs were again examined with negative results. The temperature slowly sank to normal. On July 1st the temperature was normal and both wounds had practically healed. The patient now returned home. When seen on Dec. 28th the boy was found to have gained greatly in weight and the hearing on both sides was normal. He looked the picture of health.

The principal points here are: (1) the remittent temperature with free perspiration, but absence of rigors; (2) the headache and sickness; (3) the absence of optic neuritis; (4) the presence of Kernig's sign, but no symptom of meningitis beyond this; and (5) the absence of Griesinger's symptom.

In conclusion, I should like to point out that in none of these cases was the internal jugular vein tied. Should rigors continue after opening the lateral sinus and the removal of clot, whether septic or not, then, and not before, is the time to ligature the vein.

Devonshire-street, W.

THE TREATMENT OF CHOLERA ASIATICA WITH AN ANTI-ENDOTOXIC SERUM.

BY R. TANNER HEWLETT, M.D. LOND., F.R.C.P. LOND., D.P.H.,

PROFESSOR OF GENERAL PATHOLOGY AND BACTERIOLOGY IN KING'S COLLEGE, LONDON; AND LECTURER ON BACTERIOLOGY, LONDON SCHOOL OF TROPICAL MEDICINE.

VARIOUS attempts have been made to prepare an anti-cholera serum for the treatment of cholera asiatica. Under ordinary conditions the cholera vibrio produces little or no toxin, and an anti-microbic serum prepared by immunisation with cultures has been found to be of no practical value.

Some years ago Metchnikoff, Roux, and Salimbeni [1] found that by cultivating the cholera vibrio in a medium consisting of a gelatine-salt-peptone mixture a feeble extracellular toxin is formed. With this toxin horses were immunised and the serum obtained was proved to possess immunising and curative properties experimentally when tested on young suckling rabbits which were found to be susceptible to infection with the cholera vibrio. In the epidemic of cholera in Russia last year Salimbeni [2] employed this serum and considers that it is undoubtedly of value. The dose was 50–100 c.c. administered intravenously in salt solution (150–500 c.c.).

Bran and Denier [3] also obtained a cholera toxin by the use of a medium consisting of horse serum with an addition of 10 per cent. defibrinated horse blood.

The late Dr. Allan Macfadyen [4] found that by the trituration of cholera cultures in the presence of liquid air the intracellular cholera juice or "cholera endotoxin" possessed decided toxic properties and by the immunisation of animals an anti-endotoxic serum was obtained which possessed considerable protective power as well as agglutinative and bacteriolytic properties. Through the kindness of Mr. Wellcome, I was able last year, at the Wellcome Physiological Research Laboratories, to immunise a horse by the Macfadyen method with cholera endotoxin prepared by the trituration of virulent cholera cultures obtained through Dr. Haffkine from India.

This anti-endotoxic serum experimentally possessed considerable protective and curative powers tested on guinea-pigs. Thus 0·0001 c.c. and 0·5 c.c. of serum protected against 10 and 50 lethal doses respectively of living cholera culture injected simultaneously intraperitoneally into guinea-pigs. Curatively 1 c.c. of the serum saved the life of a guinea-pig inoculated intraperitoneally with four lethal doses of living cholera culture six and a half hours previously.

Through the kindness and interest of Madame Sieber, of the Imperial Institute of Experimental Medicine at St. Petersburg, a trial of this serum was made on nine cases of cholera which occurred during the epidemic of last year in Russia. The patients were in the Obuchar Hospital, St. Petersburg, under the care of Dr. Stühlern, and I am indebted to him for notes of the cases and for permission to publish them. The following is a record of the cases (a verbatim translation of Dr. Stühlern's notes):—

CASE 1.—Cabinet-maker, alcoholic subject, aged 40 years. Suffered from premonitory symptoms for a fortnight, then acute onset, with cramps, pulsus parvus, and cyanosis. *First infusion*, 24 hours after the commencement of the attack. 3 litres of 0·7 per cent. salt solution with 50 c.c. of serum given intravenously (42° C.), together with 25 c.c. of serum subcutaneously. *Second infusion*, 24 hours after the first infusion. 200 c.c. of salt solution with 25 c.c. of serum, subcutaneously. *Third infusion*, 24 hours after the second infusion. 300 c.c. of salt solution with 25 c.c. of serum subcutaneously. The first infusion produced decided improvement. The patient recovered.

CASE 2.—Goldsmith, alcoholic subject, aged 48 years. Acute onset, with pulsus parvus, vox choleraica, cramps, and cyanosis. *First infusion*, 18 hours after the commencement of the attack. 3 litres of salt solution with 50 c.c. of serum intravenously, together with 200 c.c. of salt solution with 25 c.c. of serum subcutaneously. *Second infusion*, six hours after the first infusion. 2·5 litres of salt solution with 25 c.c. of serum intravenously. *Third infusion* (time not stated). 300 c.c. of salt solution with 25 c.c. of serum subcutaneously. *Fourth infusion* (time not stated). 2 litres of salt solution with 25 c.c. of serum intravenously. The patient passed into a comatose typhoid condition, developed facial erysipelas, and died on the sixth day of the disease.

CASE 3.—Agricultural labourer (*Erdarbeiter*), aged 28 years. Acute onset, pulseless, with cyanosis, vox choleraica, and cramps. *First infusion*, 20 hours after the commencement of the attack. 3 litres of salt solution with 50 c.c. of serum intravenously, together with 100 c.c. of salt solution with 25 c.c. of serum subcutaneously. *Second infusion*, six hours after the first infusion. 2·5 litres of salt solution with 50 c.c of serum intravenously. *Third infusion* (time not stated). 150 c.c. of salt solution with 25 c.c. of serum subcutaneously. The patient recovered.

CASE 4.—Cabinet-maker, aged 33 years. After premonitory diarrhœa lasting for 48 hours the cholera attack commenced, with cyanosis and small pulse. *First infusion*, 20 hours after the commencement of the attack. 2·5 litres of salt solution with 50 c.c. of serum intravenously, together with 150 c.c. of salt solution with 25 c.c. of serum subcutaneously (hæmorrhagic fæces). *Second infusion* (time not stated). 3 litres of salt solution with caffeine (*no serum*) intravenously. The patient died on the seventh day of the disease. Diphtheritic colitis was found post mortem.

CASE 5.—Waiter, aged 26 years. Cholera acutissima. *First infusion*, eight hours after the commencement of the attack. 3 litres of salt solution with 25 c.c. of serum intravenously, together with 25 c.c. of serum subcutaneously. *Second infusion*, seven hours after the first infusion. 3 litres of salt solution with 25 c.c. of serum intravenously, together with 25 c.c. of serum subcutaneously. *Third infusion*, 12 hours after the second infusion. 2·5 litres of salt solution with caffeine (*no serum*) intravenously. *Fourth infusion*, 12 hours after the third infusion. 2 litres of salt solution with 25 c.c. of serum intravenously, together with 25 c.c. of serum subcutaneously. The patient died (time not stated). Hæmorrhagic enteritis was present.

CASE 6.—Labourer, aged 20 years. The attack commenced 12 hours after premonitory symptoms. The patient was pulseless at the commencement of the treatment. *First infusion*, 12 hours after the commencement of the attack. 3 litres of salt solution with 25 c.c. of serum intravenously, together with 25 c.c. of serum subcutaneously. *Second infusion* (time not stated). 3 litres of salt solution with 25 c.c.

[1] Annales de l'Institut Pasteur, vol. x., 1896, p. 257. See also Salimbeni in Bactériothérapie, Vaccination, et Sérothérapie (J. B. Baillière et Fils, Paris, 1909), p. 347.

[2] Annales de l'Institut Pasteur, vol. xxiv., 1910, p. 34.

[3] Ibid., vol. xx., 1906.

[4] THE LANCET, 1906, vol. ii., p. 494. Also "The Cell as the Unit of Life" (J. and A. Churchill, 1908).

of serum intravenously, together with 25 c.c. of serum subcutaneously. *Third infusion* (time not stated). 3 litres of salt solution (*no serum*) intravenously. The patient recovered without "typhoidal" symptoms.

CASE 7.—Shoemaker, aged 15 years. The treatment was commenced six hours after the beginning of the attack. *Infusion*, six hours after the commencement of the attack. 2 litres of salt solution with 25 c.c. of serum intravenously, together with 25 c.c. of serum subcutaneously. The patient made an uncomplicated (*glatte*) and speedy recovery.

CASE 8.—Tradesman (*Händler*), aged 16 years. At the commencement of the treatment the patient was pulseless. *First infusion*, 24 hours after the commencement of the attack. 2 litres of salt solution with 25 c.c. of serum intravenously, together with 25 c.c. of serum subcutaneously. *Second infusion*, seven hours after the first infusion. 1 litre of salt solution with 25 c.c. of serum intravenously. *Third infusion*, 12 hours after the second infusion. 25 c.c. of serum subcutaneously. The patient made an uncomplicated and speedy recovery.

CASE 9.—Master shoemaker, alcoholic subject, aged 43 years. Cholera acutissima. At the commencement of the treatment the patient was pulseless. *First infusion*, 12 hours after the commencement of the attack. 3 litres of salt solution with 25 c.c. of serum intravenously, together with 20 c.c. of serum subcutaneously. *Second infusion*, six hours after the first infusion. 1 5 litres of salt solution, with 25 c c. of serum intravenously. *Third infusion*, eight hours after the second infusion. 2 litres of salt solution with 25 c.c. of serum intravenously, together with 25 c.c. of serum subcutaneously. The patient died on the third day of the disease.

It will thus be seen that of the nine cases four died and five recovered. The number is too small to base any conclusion as to the value of the serum, but it seems worthy of more extended trial. It will be noted that not more than 75 c.c. of serum was given at one time. This was because the serum contained 0·3 per cent. of trikresol, and Dr. Stühlern feared that the preservative might give rise to toxic symptoms if larger doses of the serum were given. The dose employed by Salimbeni was 50–100 c.c., and one would like to see a similar dosage of the anti-endotoxic serum employed.

King's College, London.

THE ACTION OF CHLORINE UPON WATER CONTAINING THE CHOLERA VIBRIO.

BY H. W. HARDING, M.D. LOND., D.P.H.,
ASSISTANT MEDICAL OFFICER, BOROUGH AND PORT OF YARMOUTH.

AT the suggestion of Dr. J. C. Thresh and under his direct supervision I have carried out in the public health laboratories at the London Hospital Medical College a series of experiments to ascertain whether the cholera vibrio was as susceptible to the action of chlorine as Dr. Thresh has shown the bacillus coli and the bacillus typhosus to be.

The results of these experiments, which have extended over a period of more than three months, are embodied in the subjoined table and require but little explanation. In each case one or two drops of a 24 hours' broth culture of the cholera vibrio were added to 1 litre of the water used. The requisite quantity of solution of chlorine was then added, and at definite intervals of time 1 c.c. of the solution was used for making an agar plate, and 100 c.c. were poured into a flask containing 11 c c. of a concentrated peptone salt solution. If any turbidity occurred in this broth within 48 hours it is indicated by the first + sign in the appropriate columns in the table. Subcultures were then made, sometimes a second and a third, in order to ascertain whether the cholera vibrio were present. If present it is indicated by the second + sign. This portion of the investigation was more difficult than had been anticipated, since the very dilute chlorine solution fails to kill certain spore-bearing organisms which grow with great rapidity in peptone water and produce a pellicle. Their presence also prevents the characteristic cholera-red production, but under the microscope they are readily distinguished from the cholera vibrio. Where any growth occurred upon the agar plates, these were used for inoculating gelatin and peptone solution. In no instance was the vibrio obtained from such a plate, even when 10,000 or more had been added to each cubic centimetre of the water. In about half the experiments a filtered cholera broth was used; in the others the broth was unfiltered.

Some experiments made by Dr. Thresh appeared to show that except in waters of a high degree of organic purity, 1 part of chlorine in 2,000,000 of water was not to be depended upon to destroy the cholera vibrio, but that 1 part per 1,000,000 seemed to be effective in ordinary waters. For this reason smaller quantities than 1 per 1,000,000 were rarely used. The results were not positive in all cases; it will be observed that in four instances in which 1 part per 1,000,000 of chlorine was used the cholera vibrio was recovered from 100 c.c. of the treated water, and in one of these cases it was found in the sample which had been in contact with the chlorine for 30 minutes, whereas it could not be found in the 10 and 20 minute samples from the same flask; these isolated instances were probably associated with the introduction of portion of the pellicle from the broth culture, for in that particular case in which the three flasks remained

The Action of Chlorine on the Cholera Vibrio.

Water used.	Bacteria in 1 c.c. of water used.	Number of cholera vibrios added to each c.c.	Chlorine added per litre.	Bacteria from 1 c.c. of treated water after—			Growth from 100 c.c. in peptone water.		
				10 min.	20 min.	30 min.	10 min.	20 min.	30 min.
			mgr.						
Boiled tap water.	0	3,810	1	0	0	0	– –	– –	– –
,,	0	4,300	1	1	0	0	– –	– –	– –
,,	0	5,650	1	0	0	0	– –	– –	– –
,,	0	1,265	1	0	0	0	– –	– –	– –
,,	0	5,540	1	1	1	1	+ –	+ –	+ –
,,	0	4,720	1	0	0	0	– –	– –	– –
,,	0	8,040	1	0	0	0	– –	+ –	– –
,,	0	1,990	1	0	0	0	– –	– –	++
Boiled distilled water.	0	4,140	1	1	0	1	+ –	+ –	+ –
Tap water.	?	710	1	0	0	3	+ –	+ –	+ –
,,	?	5,140	1	0	0	1	+	+ –	+ –
,,	?	10,000	1	0	0	0	++	++	++
,,	9	7,920	1	0	0	0	+ –	+ –	+ –
,,	4	18,000	1	0	0	1	+ –	+ –	+ –
Boiled tap water.	13,400 B. coli added.	10,300	1	1			+ –		
,,	,,	,,	0·5	46			++		

infected, and in that case only, the culture was added by means of the platinum loop, to which the pellicle readily adheres. Disregarding this and recognising the fact that no potable water is ever likely to contain more than a small fraction of the number of vibrios introduced into the waters examined, I conclude that most waters, if treated with 1 part of chlorine per 1,000,000 for 15 minutes, would be free from the cholera vibrio. Where water contains so much organic matter as to consume this amount of chlorine, then more will be needed, sufficient to oxidise the organic matter, and leave 0·5 to 1 part of chlorine available for sterilising purposes.

The addition of a little sodium bisulphite, or of sodium thiosulphate, instantly destroys the excess of chlorine, but in most cases it would probably be preferable to remove this excess by filtering through iron filings, or, better still, agitating with iron filings and then passing the water through some kind of filter to remove the trace of oxide of iron formed and any suspended organic matter contained in the water.

Yarmouth.

NEW EDITION OF THE RUSSIAN PHARMACOPŒIA.—The Russian Medical Council has issued a new (6th) edition of the Russian Pharmacopœia, which is to be the governing work for pharmacists, medical establishments, and medical men in European Russia from Dec. 1st (14th) next, and in the Siberian governments and in the Caucasus from Jan. 1st (14th), 1911.—The *Gazette* of the Russian Distillers' Association says that the Russian Medical Council is examining the question of freeing from excise spirits required in medicines. It is shown that Russian pharmaceutical factories use but little alcohol. But there is a very large importation of medical preparations from abroad, where they are made with "excise free" spirit. Now in Russia, owing to the heavy excise on alcohol, many pharmaceutical products are made up with wood spirit, which is very injurious to health.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

PATHOLOGICAL SECTION.

Presidential Address.

A MEETING of this section was held on Oct. 18th, Dr. F. W. MOTT, the President, being in the chair. Dr. Mott opened the session by a demonstration and address upon the Comparative Neuro-pathology of Human Trypanosomiasis and Syphilis. He referred to the close biological relationship of trypanosome and spirochæta infection: the primary sore at the point of inoculation, the period of incubation, the local gland enlargement followed by a general infection first of the lymph stream, then of the blood associated with erythematous rashes due to migration of the parasites, fever, and constitutional disturbances. Dr. Mott then referred to the mode of transmission of human trypanosomiasis and the researches of Kleine, confirmed by Bruce, concerning the glossina palpalis and the multiplication of the parasite in the gut of the fly, so that it seems there is not only a specific trypanosome, T. gambiense, but a specific fly, the glossina palpalis. The mal de coit or dourine of horses was next alluded to as showing that a trypanosome—the T. equiperdum—had acquired a habit of multiplying in the mucus of the mucous orifices, and so perpetuating the species by transmission from one animal to another by coitus. He hinted at the possibility that the spirochæta pallida might have once been conveyed by a biting insect (we know the spirochæta of tick fever is), but, like the T. equiperdum, it had acquired a new mode of transmission and thus of perpetuating the species. The affections of the nervous system produced by human trypanosomiasis and syphilis are especially interesting, for they present many points of similarity in their clinical symptoms and morbid histological changes; moreover, it is known that the drugs which can avert affections of the nervous system in the one disease, syphilis, can avert in rare circumstances the other disease. The first most striking point in human trypanosomiasis (and he used this term instead of sleeping sickness, which he said should be abolished) is the fact that on the one hand practically all cases of human trypanosomiasis, whether treated or untreated, end sooner or later in a chronic inflammatory affection of the lymphatics of the central nervous system, giving rise to a characteristic train of symptoms progressive in their course and fatal in their issue, whilst on the other hand spirochæta infection produces disease of the nervous system in only about 5 to 10 per cent. of the cases of syphilis even untreated, and considerably less if treated. We may speak of two forms of nervous lesions: (1) the true syphilitic due to the action of the specific organism; and (2) the parasyphilitic due to a bio-chemical change in the body whereby the neurons die prematurely. Whereas it may be affirmed that in every case of sleeping sickness there is invasion of the subarachnoid space by the trypanosome, in only about 4 or 5 per cent. is there invasion of the subarachnoid space by the spirochætæ, and then in all probability they are confined within the lymphatics and do not become free in the cerebro-spinal fluid as do the trypanosomes. Whereas it appears that neither arsenic, antimony, nor mercury preparations will cure a patient who is suffering with sleeping sickness (that is, invasion of the cerebro-spinal fluid by the trypanosomes) in most instances arrest, and in some cases cure, is effected by the same drugs in syphilitic affection of the lymphatics of the central nervous system. Dr. Mott said that if the two organisms be observed by the ultramicroscope it would be noticed that the trypanosomes were extremely active, moving rapidly all over the field, whereas the spirochætæ progressed slowly in a screw-like fashion around their long axis. The former then would easily penetrate the delicate walled capillaries and escape into the cerebro-spinal fluid; moreover, observation showed that whereas trypanosomes could usually be easily found in the blood, spirochætæ cannot; they seemed to be only able to multiply in the lymph spaces and channels. So that the chances of affections of the nervous system in syphilis are infinitely small as compared with the chances in human trypanosomiasis. But in other forms of trypanosomiasis he was not aware that the cerebro-spinal fluid did become infected, and the deadly nature of infection by the gambiense might be due to the fact that it had acquired the habit of migration into the subarachnoid space. In both syphilis and human trypanosomiasis there was a polyadenitis; both diseases were characterised by a lymphocytosis in the blood, and when the nervous system was invaded by a lymphocytosis in the cerebro-spinal fluid. Dr. Mott said that organic arsenical, antimonial, and mercury preparations which had a trypanosomocidal and spirillocidal action might owe that property to either stimulating or phagocytic function, for those metals might have an affinity for the phosphorus containing lipoids of the osmotic membrane forming the periplasium of those organisms. Moreover, it was possible that the toxic effects of organic arsenical preparations so widely used for the cure of those diseases might be due to association of the poison with the lecithins of the nervous system. In trypanosomiasis it was extremely rare to hear of a recovery, but one had probably recovered that he knew of. The lesions of the central nervous system in sleeping sickness resembled in some ways both the lesions of syphilitic meningo-encephalitis and the meningo-encephalitis of general paralysis. But there were striking differences to both. Examination of the lymphatic glands in trypanosomiasis showed the presence of the organisms, and whether it was simply due to their mechanical presence or to a toxic secretion, a chronic inflammatory condition was set up in the glands and lymph channels of the body. The characteristic lesion in the brain and spinal cord was a diffuse infiltration of the perivascular and meningeal lymphatics of the brain with lymphocytes and plasma cells; this was occasioned by a proliferation of the endothelial cells and connective tissue elements of the lymphatic sheath of Robin and the pial sleeve; it is accompanied by a marked proliferation and hyperplasia of the neuroglia tissue which extended from the periphery of the central nervous system inwards. There was some degree of neuronic atrophy, but it was in no way proportional to the chronic inflammatory change. There were little or no naked-eye changes in the brain in uncomplicated cases. Dr. Mott contrasted that with syphilitic meningo-encephalitis where besides the meningo-encephalitis there were endarteritis and tendency to tumour formation. In general paralysis there was a perivascular infiltration of lymphocytes and plasma cells, resembling that of sleeping sickness, except that it favoured the cortex, whereas in sleeping sickness it was much more marked in subcortical structures. In general paralysis there was a neuroglia proliferation and hyperplasia proportional to the neuronic atrophy which was extreme and proportional to the degree of dementia. Rod cells, sprouting capillaries, and new vessels were seen in abundance.

CLINICAL SECTION.

Exhibition of Cases.—New Methods of Reading Arterial Blood Pressure.

A MEETING of this section was held on Oct. 14th, Mr. A. PEARCE GOULD, the President, being in the chair.

Mr. ALBERT CARLESS showed a case of Adiposis Dolorosa (?). The patient was a female, aged 31 years, who came under observation in March last for piles. She was admitted to hospital and operated on satisfactorily. She was always anæmic, with a poor circulation, her fingers and hands readily becoming blue in cold weather. From time to time she had noticed that the tissues beneath her chin became somewhat swollen, but that did not last. At the time of operation she had a small fatty growth in the back of the neck in the suboccipital region, but it caused her no pain or inconvenience. Between the months of April and June a marked fatty development occurred, affecting mainly the shoulders, the back of the neck, the root of the neck, the back, and the front of the abdomen. Those diffuse fatty masses had been decidedly painful and tender, and there had been some degree of neuralgic pain in the arms. The progress was very rapid up to June, but had been slower since. The most marked development had been around the shoulders and upper parts of the arms, and the disproportion between those regions and the parts below was very great. The periods had been regular and not specially painful, but the loss was not great; she missed one or two periods after the operation. The thyroid body appeared to be atrophied. The skin acted well, especially the arms and

hands. The patient generally felt languid and unfit for work. She had taken thyroid tabloids and pituitary extract. The former seemed to do her good and control the increase in size, but worried her eyes somewhat; the latter had no effect. She had increased recently in weight by five pounds.

Dr. H. D. ROLLESTON showed a case of Symmetrical Lipomatosis. The patient was a man, aged 45 years, without a history of syphilis. He was admitted for distension of the abdomen and some ascites, which had since passed off. There were almost symmetrical fatty masses over the clavicles, neck, the shoulders, arms, elbows, the lower abdomen, sacral region, and the upper and inner aspects of the thighs; some of them were large and diffuse, others small and circumscribed. The veins over the chest and the lipomas in the neighbourhood of the clavicles were dilated. The mammæ were considerably enlarged. Some of the large fatty masses appeared to be diffuse, others to be composed of separate tumours which were becoming confluent. Except in one or two spots there was no tenderness. The tumours were not spontaneously painful, and there had not been any local pain before the appearance of the tumours. The condition, therefore, was not adiposis dolorosa nor Dercum's syndrome. It approached but did not accurately correspond with Lyon's group of "diffuse symmetrical lipomatosis, with predilection for the neck." The fatty mass about the left clavicle was larger than its fellow, and was the first to appear. Knee-jerks, normal; sensation, normal; pulse, 70; temperature, 97° F.; blood pressure, 110 mm. Hg; urine, normal; weight on admission, 13 stones 7 pounds, now 11 stones 9½ pounds. Dr. G. Allpress Simmons reported that the screen examination showed a normal translucency of both lungs; the excursions of the diaphragm on both sides, even on deep inspiration, were not more than half an inch, and the arches did not flatten. A skiagram taken from the front showed some mottling of the inner half of the right lung towards the base. There was, perhaps, slight dilatation of the aorta, but no evidence of any intrathoracic tumour. A lateral skiagram of the neck did not show calcification. In regard to treatment the patient had recently been on small doses of thyroid extract (one and a half grains) and had had X rays to the right side of the body.

Dr. ALFRED M. GOSSAGE showed a case of Adiposis Dolorosa (?). The patient was a woman, aged 54 years, who had always suffered with pains in the legs. Catamenia became irregular at the age of 44 and ceased at the age of 48. From the age of 44 she had become very stout and the legs had become much more painful, so that it was difficult for her to walk. The patient was obese and had numerous fatty swellings on the legs and thigh, which were painful and tender. Over the rest of the body the adipose tissue was evenly distributed, but there was general tenderness. There was not any mental impairment.

Dr. H. G. TURNEY described a case of Physiological Obesity which developed into a case of Adiposis Dolorosa.

Mr. CARLESS, in commenting on the case exhibited by Dr. Rolleston, gave details of a case in which the venous enlargement was ascribed to pressure in the mediastinum.—The PRESIDENT remarked that in Dr. Rolleston's case the blood in the enlarged veins ran from the shoulder to the sternal region, which was against the condition being due to mediastinal pressure.—Dr. F. PARKES WEBER pointed out that typical cases of adiposis dolorosa occurred nearly always in women, whilst diffuse lipomata of the neck were found nearly always in males.—Dr. ROLLESTON referred to the fact that some cases of myxœdema developed an extraordinary degree of adiposity.—Dr. GOSSAGE said that the patient he showed had not improved under thyroid treatment.

Dr. GEORGE OLIVER demonstrated two New Methods (Auditory and Visual) of Reading Arterial Blood-pressure. The auditory method consisted of an air-tight tambour strapped over the brachial artery at the bend of the elbow below the armlet, the compression of which developed a loud throb or thud; and binaural auscultation of the pressure area of throbbing which afforded readings of the diastolic and systolic arterial pressures—half that area indicating the diastolic, and the cessation of the throb the systolic pressure. The readings thus obtained were more delicate, more definite, and more accurate than those afforded by extinction of the pulse (digital) and by the optimum oscillation. The visual method (the development of oscillation in a spirit index and its cessation) was also derived from the auditory tambour. It afforded a reading of the systolic arterial pressure (the armlet being applied to the arm or forearm) as sensitive as that furnished by the auditory method. It was suggested as a corroborative or alternative method, and might be useful when the hearing was impaired or when noises were distracting for auscultation.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Presidential Address.—Adenomatosis Vaginæ.—Vaginal Secretion in Infants.

A MEETING of this section was held on Oct. 6th, when the President, Dr. H. MACNAUGHTON JONES, delivered his Presidential Address.

Dr. VICTOR BONNEY and Mr. BRYDEN GLENDINING communicated a paper on Adenomatosis Vaginæ, a hitherto undescribed condition. A woman, aged 42 years, had suffered for 12 years from a persistent vaginal discharge of a transparent, sticky nature. The entire mucous surface of the vagina and portio vaginalis of the cervix was red and granular, being studded all over with small cysts, varying in size from that of a pin's head to that of a large pea. A continuous stream of mucous fluid like the white of an egg exuded from the diseased surface, in quantity about 6 ounces per diem, specific gravity 1014. Microscopical examination of the vaginal wall revealed numerous glandular spaces lined by a single layer of tall columnar epithelium, actively mucinogenetic, as proved by their reaction to mucicarmine. Here and there the communication of these glands with the surface of the mucosa could be demonstrated. After a careful consideration of several possible explanations of this rare condition Dr. Bonney and Mr. Glendining came to the conclusion that a congenital peculiarity of the cells lining the vagina existed, in virtue of which they possessed facultative gland-forming powers similar to those covering the vaginal cervix in immediate proximity to the external os uteri. This power had remained dormant until excited by inflammation or the effects of child-birth—a process analogous to that by which a glandular erosion of the cervix is formed. The paper was illustrated by drawings and micro-photographs shown on the epidiascope.

Dr. G. DRUMMOND ROBINSON read a short communication on Some Observations on Vaginal Secretion in Infants. The paper was based on the examination of the vaginal secretion of 50 infants varying in age from 30 minutes to 14 days. Within the first 48 hours the secretion was invariably found sterile, and sterile secretion was found as late as the thirteenth day. Dr. Robinson suggests that the organisms found in the vagina during the first fortnight after birth may really have been carried up from the vulva at the time when the cultures were made. Of the 44 cases in which the secretion was found sterile, in 36 (81·8 per cent.) the reaction was acid, in 5 (11·3 per cent.) it was alkaline, and in 3 (6 8 per cent.) it was neutral. The conclusions drawn from these observations are: (1) That the vaginal secretion is sterile for the first 48 hours after birth, and probably for a much longer period; and (2) that the vaginal secretion of infants is acid in the majority of cases, and that this acidity is not due to the action of micro-organisms.

The PRESIDENT then delivered an address on the Lessons of a Session, in which he pointed out the advantages to the section of the publication of a quinquennial digest of its proceedings, so as to rescue from oblivion in the catacombs of the Transactions of the Society the original work done during the previous years. He proposed to illustrate his meaning by giving such a brief digest of one session's work, in the original communications presented, the clinical histories detailed, and the pathological specimens exhibited. Dr. J. Curtis Webb's important review of the whole subject of Electro-therapy in Gynæcological Practice had shown that in ionisation we have an efficient therapeutic agent in cases specially selected for its employment. His paper, however, and the discussions which followed it, tended to prove that such electropathic treatment demands primarily three essential conditions—special training and skill in the applications of the kind of electricity used, its nature and quantity; accurate diagnosis and differentiation of the states in which it is contra-indicated; judgment as to its continuance or abandonment according to the effect it produces. Dr. Comyns Berkeley and Dr. Victor Bonney

drew, for the first time, a clear line of demarkation between the two affections Leucoplakic Vulvitis and Kraurosis Vulvæ. The relation that the pathological processes in each have to carcinoma vulvæ was compared, proving that coitus, sterility in younger women, advanced life, and in his (the President's) opinion prolonged vaginal discharge, are potent factors in causing the malignant change. Once its presence is suspected the landmarks for removal should lie completely outside the diseased area.

Justification for Cæsarean Section in Contracted Pelvis, in Placenta Prævia, and Eclampsia had been most thoroughly discussed through the communications of Dr. Hastings Tweedy, Dr. Henry Jellett, and Dr. F. J. McCann. In addition they had now before them the discussion opened by Dr. Amand Routh as "reporter" at the International Congress just held at St. Petersburg. These views raised the whole question of the indications for, and the relative advantages of, the classical and the extraperitoneal operations, as compared with symphysiotomy, pubiotomy, hysterotomy, and the usual obstetrical methods, such as the induction of labour, craniotomy or cephalotripsy, and high forceps. The Master of the Rotunda was strong in his denunciation of these latter steps in contracted pelvis, and he defined the degrees of deformity in which he considered the various operations were indicated. From the opinions expressed at the meeting of the American Medical Association in 1909, with those declared at the three meetings of this section this year, and at the recent Congress, we can summarise the present views of obstetricians on the indication for Cæsarean section in contracted pelvis, placenta prævia, and eclampsia. 1. Greater care generally should be taken in the early months of pregnancy to estimate approximately the pelvic capacity for labour at full term. 2. The time has come when the general indications for Cæsarean section, symphysiotomy, pubiotomy, hysterotomy, and the ordinary obstetric methods of dealing with contracted pelvis can be more exactly defined. 3. There is still a useful place for induction of labour, craniotomy, or cephalotripsy, and high forceps application. While ever regardful of the life of the child, that of the mother always takes precedence in determining our selection of the manner of delivery. 4. Cæsarean section has a place in the management of placenta prævia only when (*a*) this complication occurs under circumstances that would in any case demand the operation; (*b*) when the character of the presentation and nature of the placental attachment, with other conditions, render the classical methods of treatment impossible to carry out, or their practice more dangerous than operation. It would appear that the risk to the mother, which must be our first consideration, has been exaggerated by those who advocate the step. 5. Cæsarean section has a place in the treatment of eclampsia in exceptional cases, and these are included in the indications suggested by Dr. McCann—viz., the time of occurrence—before or during labour; the severity and rapidity of the fits; considerable disproportion between the head and pelvis; an undilatable cervix; and a moribund mother and a living child. 6. As to the advantages and disadvantages of the symphysic and the classical operations, Professor Bumm at the International Congress summed these up. In the former the avoidance of the peritoneum and easier suture of the cervix, but there is greater difficulty in technique, greater risk to the bladder, and the delivery of the fœtus more difficult.

In the discussion on Mrs. Scharlieb's statistics of Malignancy in Ovarian Tumours, it was shown that out of 3481 cases collected from various clinics 9·9 per cent. were malignant, and that in a fairly large proportion the degenerative change occurred primarily in the ovary. In ten instances remarkable Shrinking of Myomatous Tumours of the Uterus was shown to have occurred by Dr. Arthur Wallace. While this may occasionally happen, the statistics now published of some 8000 tumours prove that degenerative changes and danger to life from these growths increase directly in proportion to the advance in years after 40 to 50.

Dr. Macnaughton Jones concluded by referring to the interesting correlations between the pathological appearances seen in nuclei arising from the syncytium and the cells in chorioepithelioma which were demonstrated from a case of ruptured tubal pregnancy by Mr. T. Carwardine, to the possibility of treating rupture of the uterus successfully by vaginal suture as demonstrated by Mr. Herbert J. Paterson, and to the occurrence of pelvic hæmatocele, apart from ectopic gestation, as illustrated by Dr. Cuthbert Lockyer. Several clinical cases of great interest were referred to by the President; some bore on the question of operation on myoma complicating pregnancy or labour, as in Dr. Philip Turner's case of hysterectomy successfully performed 63 hours after labour for infection arising out of a necrobiotic fibroid, also Dr. H. Russell Andrews's successful myomectomy in the third month of pregnancy, complicated by a retroversion, hysterectomy for an incarcerated necrobiotic fibroid complicating pregnancy (Dr. T. W. Eden and Dr. T. G. Stevens), and the large myomatous tumour distending the vagina successfully removed during labour by Dr. Griffith. One of themost interesting cases brought forward he considered was that in which Dr. Herbert Spencer's posterior Cæsarean section was followed by hysterectomy for fibroids in the thirty-eighth week; the living fœtus and placenta having been extracted the degenerated and greatly thickened uterus was removed with safety to mother and child. He mentioned the following exceptionally interesting specimens: a complete transverse rupture of the fundus uteri (Dr. Lewers), carcinomatous degeneration in an adenofibromatous polypus (Mr. J. H. Targett), spheroidal-celled carcinoma of the cervix (Dr. Griffith), atresia in one-half of a double uterus (Dr. Lewers), abscess of the ovary due to infection from amœba coli (Mr. Barris and Dr. Williamson), ovarian pregnancy (Dr. E. Hastings Tweedy), implantation teratoma (Dr. V. Bonney), and several cases of ectopic gestation and molar pregnancy.

A vote of thanks to the President, proposed by Dr. G. E. HERMAN, and seconded by Mr. W. D. SPANTON, was carried by acclamation, and the meeting then adjourned.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on Oct. 13th, Dr. M. Handfield-Jones, the President, being in the chair.—Dr. E. G. Graham Little showed two cases of Rodent Ulcer, one of which had been treated with ionisation and one with CO_2 snow. The first case, a man about 45, had had the ulcer six years. When first seen it was of about the size of a threepenny-piece, was typical in appearance, and was situated on the cheek near the nose. Two applications of zinc ions, of an average duration of 20 minutes each, had been made with an interval of a fortnight. The result had been very successful, only a faint atrophy being noticeable in the site of the former ulcer. Six months had elapsed since the last treatment, and there was no sign of recurrence. The man had felt very little pain during the applications, for which about 5 to 7 milliampères of current had been used. The second case was in a woman, aged 40; the ulcer was of about seven years' duration, typical in appearance, and seated at the outer margin of the right orbit. Three applications of CO_2 snow had been made, lasting 20 to 25 seconds each and separated by intervals of 10 or 14 days. The last treatment was six weeks ago and there was now no trace of disease, the site being a little red still, but otherwise apparently quite healed. Dr. Little also showed a case of Lupus Erythematosus of long duration; the patient, a man, aged 74 years, had been treated for the complaint 40 years ago by the late Erasmus Wilson. When first seen the face, ears, and backs of both hands were affected. CO_2 snow had been applied for 20 to 30 seconds at intervals of about a week. The result had been strikingly good: the hands had been practically cured as well as parts of the face; private affairs caused a temporary interruption in the treatment, but he had now returned for a further course and a treatment was given three days ago, and the blisters which resulted from the application were still partly unbroken. The method was exceedingly useful, and this case was a good illustration of the success which might be anticipated even in very chronic cases and in elderly persons.—Dr. A. M. Gossage showed a case of Splenomegalic Polycythæmia.—Mr. Peter L. Daniel showed two cases of Hirschsprung's Disease (Idiopathic Dilatation of Colon) Affecting the Rectum. The first case had been operated upon two and a half years ago; she was then 12 years old. She was born with an imperforate anus, and a history of severe constipation from the time this was perforated existed. The rectum and adjacent sigmoid were excised and an end-to-end anastomosis was carried out with excellent results. The second case, also a girl, aged 13 years, in a milder stage of the

affection, was reacting to injections of eserine (grain 1/100) three times a week so well that until this proved ineffective nothing further was intended. Skiagrams of the condition before and after operation were shown, also the excised rectum, which, with contents, weighed 6 pounds.—Mr. L. B. Rawling showed: 1. A case of Tumour of the Lower Jaw with Egg-shell Crackling; a skiagram showed the wisdom tooth (unerupted) situated at the top of the tumour. Mr. Rawling considered the diagnosis lay between a dentigerous cyst and a myeloid sarcoma; he proposed to operate. 2. A Cyst in the Shoulder presenting through the fibres of the deltoid beneath the scar of an old operation incision. It was at first considered that it might be a hernial protrusion of muscle, but an exploratory puncture produced fluid containing some melon-seed bodies. He considered it was a tuberculous affection and probably a protrusion of a pouch of synovial membrane from the joint itself; the nature of the previous operation was unknown. —Mr. J. E. R. McDonagh showed several cases in which marked and intractable syphilis had been treated with an injection of "606," all with surprising and almost immediate success.—Mr. Haldin Davies showed: (1) A case of Tuberculide; and (2) a case of Pigmented Nævus.—Mr. S. Maynard Smith showed a case of Cirsoid Aneurysm of the Scalp; this had been quite small at birth but after a blow on the head had considerably increased in size; he had treated it by multiple ligature, causing its almost complete disappearance.—Mr. E. Laming Evans showed a case of Congenital Upward Displacement of the Right Patella in a little girl.—The President showed some gynæcological specimens, and an interesting discussion followed.

OXFORD MEDICAL SOCIETY.—A meeting of this society was held on Oct. 14th at the Radcliffe Infirmary.—Dr. Tibbs related the history of a case of Lymphatic Leukæmia which had ended fatally in the infirmary. The course had been very acute; there had been high temperature, a septic throat, and the blood picture of the large-celled type. A blood culture was negative. The interest of the case lay in the fact that post mortem the glands and the pericardium were found to contain a Gram-negative diplococcus, which it had not been possible to grow in pure culture. Several preparations from the case were exhibited. The question was whether the case was one of chronic leukæmia with a terminal septic infection, as three weeks previously the patient had been in his usual health, and the patient volunteered the statement that his glands had always been enlarged.—Dr. W. Collier then read a paper on the Therapeutic Use of Alcohol. Pharmacologically it was an irritant, and its action in this respect on the stomach was stimulant. It was doubtful whether, on the nervous system, alcohol stimulated first and depressed afterwards or depressed from the beginning. The essays of Crile and Gairdner had had a very marked effect in altering Dr. Collier's treatment of his own patients and, he thought, that of many other physicians. Preceding the crisis in a fever Dr. Collier thought that ammonium carbonate, digitalis, and strychnine were as efficacious as alcohol. For fainting it was perhaps the most accessible drug, though it possessed no advantages over the preparations of ammonia. As a hypnotic it was doubtful if it was ever as useful as veronal and other similar drugs. As a means of warding off syncope in slight operations such as tapping it was a useful drug. For children with diarrhœa it was a useful adjunct to other methods of treatment, and to the aged it might be given with impunity. In facial neuralgia two glasses of port wine daily often had a marked effect, and during convalescence good wine in moderation more quickly restored the strength of the patient. The present fashion of giving meat-wine was wasteful and expensive treatment, and offered in persons not taking it under medical orders a likely means of developing a habit. The alcohol consumed in institutions had been markedly lessened in the last 15 to 20 years. In the Radcliffe Infirmary in 1889, when 1399 patients had been treated, £117 had been spent on malt liquors and £91 on wine and spirits; 20 years later, when 2257 patients were treated, £9 had been spent on malt liquors and £51 on wine and spirits. The records of other hospitals all showed enormous reductions in the consumption of alcohol.—In the discussion which followed Mr. R. H. A. Whitelocke urged its vigorous use in all cases of septic poisoning.—Dr. F. G. Proudfoot doubted whether in slight operations ammonia preparations had the same effect as alcohol. He mentioned its diuretic action and the varying action of different preparations of alcohol, such as beer and whisky, in this respect. In digestion its action depended entirely on the individual.—Dr. W. J. Turrell urged its value for tiding over a period of great fatigue in long-continued muscular exercise; for instance, towards the end of a long bicycle ride. It was a valuable drug in children and old people. According to Graves, it was valuable if the pulse and respiration remained steady. He also thought that it was a valuable hypnotic and as a stimulant to the appetite in fatigue.—Mr. A. P. Dodds-Parker related that in the records of two physicians at a certain London hospital the percentage mortality in the patients of the one who gave alcohol freely was half that of another physician who withheld it. In septic cases he thought that it was of little use, and much preferred in his own practice to give lactose as a means of keeping the tissues of the body supplied with a minimum of food.—Dr. W. Duigan said that in his experience alcohol in asthenic conditions, as, for instance, bad influenza, was a valuable drug, and in continued fever of an asthenic type.—Dr. W. A. P. Waters mentioned its value in his hands after acute illnesses, especially in children.

Reviews and Notices of Books.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. No. 37, Investigations on Bengal Dietaries, with Some Observations on the Influence of Dietary on the Physical Development and Well-being of the People of Bengal. By Captain D. McCAY, M.B R.U.I., I.M.S., Professor of Physiology, Calcutta Medical College. Calcutta: Superintendent of Government Printing. 1910. Price Rs.2.6, or 4*s.* 3*d.*

THIS volume contains an account of a prolonged and exhaustive investigation into the composition and food value of the dietaries that are in use in the various jails in Bengal, with some valuable observations on the physiology of alimentation, and practical recommendations for improvement in existing conditions. The scope of the inquiry was to investigate the suitability of the diet scales prescribed for prisoners in Bengal. Most of the work done has related to the estimation of the nutritive value of the dietaries in use, and in particular to the determination of the digestibility, or absorbability, of the nutritive principles contained in them. It has been laid down by recent authorities on the physiology of nutrition (e.g., Atwater) that in foods most easy of digestion and absorption, such as meat, fish, and eggs, the protein is utilised to the extent of 97 per cent.; while with other articles, equally nutritious and necessary for the animal economy, such as bread, cereal grains generally, and fruit, its digestibility coefficient is 83 to 85 per cent., and with the leguminosæ about 76 per cent. The most important result of Captain McCay's investigation has been to prove that, as regards the protein of the dietary, the degree of its absorbability depends very largely on the actual quantity or bulk of the food consumed. This question of bulkiness is not of much moment in European and American dietaries, but in many parts of India and the East, and particularly in Bengal, it is of the first importance; the average weight of cooked food consumed in a day by a Bengali prisoner amounts to about 140 ounces, or more than 8½ pounds. (It should be remembered that the Bengali in jail is better fed than his friends and relations outside, but the character of the dietary is the same.) It was found that with this diet protein absorption was barely 55 per cent., instead of the theoretical 76 to 85 per cent. Another factor tends to reduce the net alimentary value of the Bengali's dietary. The energy value of a dietary is the total potential energy of the food minus that of the corresponding fæces and urine. With the dietaries universally in use in Bengal excessive fermentative changes take place in the carbohydrate

constituents while passing down the alimentary tract; sugar and starch are converted into carbon dioxide and fermentation products (acetic and lactic acids, &c.) of low caloric value, and a great deal of potential energy is lost. Moreover, intestinal troubles are extremely prevalent, leading to malnutrition.

After an introduction giving a *résume* of work that had been previously done in regard to Indian jail dietaries, and of the methods employed in the present investigation, the author describes the dietaries at present in force and gives their chemical composition; also their energy value as determined by means of the calorimetric bomb by Professor Benedict of Washington, an act of international scientific courtesy that is gratefully acknowledged. Then follows a detailed account of the experiments on the nutritive value of the dietaries, first in Lower Bengal jails, then in those of Behar. The Lower Bengal dietary consists of 26 ounces rice, 6 ounces *dal* (pulse), 6 ounces green vegetables, and condiments; it contains 93 grammes protein, 693 grammes carbohydrates, and 30·5 grammes fat, yielding 3508 Calories, a higher value "than any of the standard diets that have been formulated for Europeans," but the author shows that, by reason of the excess in carbohydrate (leading to excessive fermentation), the absorption of the protein is so much interfered with that its value is reduced to 60 or 65 grammes. This was proved by very numerous experiments. Batches of five or ten or more men were carefully observed, their urine analysed in five-day periods, and the metabolism calculated. In some series of observations not more than 50 per cent. of the nitrogen ingested was metabolised. The carbohydrates were gradually reduced in amount and a succession of observations made on the nitrogen excretion under the altered conditions. It was found that when the rice ration was 18 ounces (instead of 26 ounces) the nitrogen absorbed amounted to 8·5 grammes (instead of 7·5). "Any rice in the dietaries in excess of 18 ounces per man daily is not only useless but actually clogs the absorption of protein, so that the amount of nitrogen undergoing metabolism actually falls."

In the jails in Behar (which is Upper Bengal) the quantity of rice allowed is only 16 ounces, the same amount of pulse (*dal*) is given as in Bengal—viz., 6 ounces, and either 10 or 12 ounces of *ata*, a flour prepared either from wheat or maize, which contains protein. The value of this diet is approximately 105 grammes protein, 650 grammes carbohydrate, and 38 grammes fat. The diet is less bulky than the Bengal diet, but there is too much carbohydrate to permit of the best use being made of the protein element. The recommendations made are: for Bengal jails a diet of rice (Burma or country) 18 ounces, pulse 4 ounces, wheat ata 4 ounces (or fish 4 ounces in its stead twice a week), and vegetables 6 ounces; for Behar jails: rice 12 ounces, *ata* either 10 ounces (from wheat) or 12 ounces (from maize), pulse 5 ounces, vegetables 6 ounces, and on two days a week 5 ounces of fish or goat's flesh in place of 2 ounces *ata* and 1 ounce *dal*. The general effect would be to decrease the quantity of rice all over Bengal by 6 ounces daily, which would work out to a saving of 75,000 rupees (£5000) per annum. It seems strange to read (p. 44) that "it was found practically impossible to get the prisoners (in the Presidency jail, Calcutta) to consume the full diet (26 ounces) of Burma rice for more than a day or two;" the same was found at Buxar jail (p. 102). There must have been a great accumulation of surplus stores in these institutions. Country rice, on the other hand, is consumed in its full quantity.

The general result of the inquiry is to demonstrate that while in chemical value the Bengal diet contains 93 and the Behar diet 106 grammes protein, the nutritive or physiological values are only 49 and 60 grammes respectively—that is, a little over 50 per cent. only of the protein is absorbed, the cause of this low absorption being the excessive bulkiness of the food. By a succession of careful trials it was found that the optimum quantity of rice was 18 (instead of 26) ounces in Bengal and 12 (instead of 16) ounces in Behar.

In the second part of the volume is a very suggestive discussion of Chittenden's views as to the possibility of existing in health on a diet containing less than half the protein content of diets ordinarily in use in Europe and America. In his previous memoir Captain McCay had shown that this is the case in Bengal, the average native reaching an even lower limit of nitrogenous metabolism than any of Chittenden's subjects; many students and fairly well-to-do persons exist on a metabolism of less than 40 grammes of protein daily. But when it came to judging of the effects of such a dietary on physical development, capacity for labour, and resisting power to disease and infection, it was found that Chittenden's standards were not sufficient. The Bengali diet is contrasted with that of the Behari; the latter (in the jails and in the population generally) is about 2 grammes per head higher in nitrogenous metabolism than the former. "In accordance with this we find in the Behari a much better physical development, greater capabilities for muscular exertion, a distinctly greater degree of vivacity, briskness, and sprightliness of manner." His weight is 120 pounds, compared with the 110 pounds average of the Bengali. This results from the 10 per cent. higher nitrogenous metabolism. It is also pointed out that the low nitrogenous metabolism of the Bengali does not secure him from renal disease, the particular condition that Chittenden considers to be most likely to be avoided by protein economy, for renal disease is much more common among the working population of Bengal than in Europeans. A comparison is also made between the hill tribes to the same effect, and the conclusion is come to that "in those races where an assimilable protein, and particularly an animal protein, forms part of the ordinary diet, muscular development and good fighting qualities seem to be intimately related with the level of nitrogenous metabolism attained."

The present memoir by the professor of physiology at Calcutta is of permanent scientific value, and second to none of its predecessors in interest or importance.

Handbuch der Kinderheilkunde. Edited by Professor Dr. M. PFAUNDLER and Professor Dr. A. SCHLOSSMANN. Second edition. Four volumes, with 69 coloured plates and 515 illustrations. (Fifth volume in preparation.) Leipsic: F. C. W. Vogel. 1910. Vols. I. and II. Price each volume, unbound, M.12.50; bound, M.15. Vol. I., pp. 455; Vol. II., pp. 588.

IT is difficult within the limits of a review to do justice to the many additions and improvements which have been introduced in this new edition of a famous text-book. Much has occurred in the domain of pædiatrics since the first edition appeared in 1906, and it is scarce exaggeration to state that no event of importance remains unchronicled in these pages. That this vast and comparatively expensive handbook should have been translated into two languages—English (reviewed in THE LANCET of Feb. 6th, 1909) and Spanish—and yet require a new edition within four years of its first appearance, adequately testifies to the intrinsic merits of the work and to the position which pædiatrics now holds in the world of medicine. In its completed form this new edition will be enlarged by an additional volume and thus consist of five volumes and not four, as in the original issue. The new volume will be concerned with the surgical and orthopædic aspects of the diseases of children and will be the joint work of Professor

F. Lange of Munich and Dr. H. Spitzy of Gratz. The present review is, however, limited to a consideration of Volumes I. and II. only.

The first volume deals with such general subjects as nutrition and metabolism, diseases peculiar to definite age-periods, and with the general pathogenesis, pathology, treatment, and prevention of diseases in children. In only two of the chapters which deal with these subjects is there any noteworthy change—namely, in the one concerned with mortality and morbidity in childhood, written by Professor Prausnitz of Gratz, and in the one on nutrition after the first year, written by Professor Schlossmann himself in conjunction with Dr. P. Sommerfeld of Berlin. The first of these chapters is enlarged and brought up to date, but even in its present form it hardly does justice to the importance of the subject. The second has been entirely rearranged with the change in authorship. This chapter, though an important one, is not likely to appeal to English readers. In the first and theoretical section the feeding of children is expressed in calorie values, a method which, despite its scientific and abstract interests, has few practical applications in the feeding of the human animal, which has tastes, fancies, and idiosyncrasies of digestion and metabolism, all having a way of upsetting the most carefully laid plans. The second section of this chapter, which is concerned only with practical dietetics, also has its limitations, for German foods and methods and times of feeding hardly harmonise with English ideas.

The second volume shows many more important changes. Moreover, it comprises subjects which are of greater clinical interest and importance. The contents of this volume are: Blood diseases, by Dr. A. Japha of Berlin; constitutional diseases, by various authors; acute infections and chronic infections, both written by a variety of distinguished members of the profession. Barlow's disease, or infantile scurvy, if we mistake not, was included in the first edition in the chapter which was devoted to rickets; in this edition it has conferred on it the dignity of a chapter to itself from the pen of Dr. W. Stoeltzner of Halle. The chapter on rickets has itself been greatly enlarged by Professor W. v. Starck of Kiel, and now provides the reader with a more comprehensive account of the etiology and pathogenesis of the disease. The latter elaborates the theory at which he only hinted in the first edition, that the disease is primarily an osseous and muscular dystrophy, and dependent on the factors of domestication and confinement. In this connexion he makes honourable mention of Findlay's experimental work on puppies. Young animals kept in confinement, and especially under conditions of overfeeding, do not give full play to their natural instincts for muscular exercise. The inaction of the muscles deprives the growing bones of their healthy and natural stimulation. Professor Starck draws attention to the influence of internal secretions such as those by the adrenal organs, and refers to the antagonistic action between their secretion and that of the pancreas.

In a new and very excellent chapter Professor Pfaundler discusses the part played by diathesis in disease, and he reviews the claims of such conditions as neuro-arthritism, lymphatic disease, and the exudative diathesis to be regarded as independent entities, or as merely accidental syndromes of symptoms. He gives full prominence to Czerny's views on the exudative diathesis and his treatment by a restricted diet and unstimulating psychological environment. He also refers at length to the views of Buchard and his school with reference to the part played by a sluggish metabolism in the determination of such dyscrasias as gout, arthritis, and fatty disease (Fettsucht). The prominence given to the views of this French school is in marked contrast to the manner in which they have been heretofore ignored in Germany.

Duke's "fourth disease," which, it will be remembered, was described in a separate chapter in the first edition, receives fuller notice in the present volume, and additional evidence is adduced in support of its claims to be regarded as an independent infectious exanthem. Following on this chapter is another from the pen of Professor Pfaundler on "erythema infectiosum," an infectious exanthem 300 cases of which have been recorded in German literature. This disease has been described under various synonyms; for instance, Plachte originally called it megalerythema epidemicum, while Pospischill gave it the name of erythema simplex variabile; by others it has been called erythema simplex marginatum, erythema infantum febrile, and "the fifth disease." Professor Pfaundler declares for its independent existence as a disease *sui generis*. He describes the symptoms and course of the disease with detailed accuracy. The importance of being able to diagnose this exanthem from scarlet fever, or indeed from measles, lies in the fact that its comparatively harmless character does not necessitate prolonged isolation. The troubles of the practitioner in making a differential diagnosis between scarlet fever, German measles, the fourth and the fifth disease, would be greatly mitigated if it could be shown that they are due to infection by polymorphic varieties of one and the same microbic agent presenting different degrees, or indeed kinds, of virulence. The fact that these diseases are not mutually protective does not entirely dispose of this possibility.

The joint editors of these volumes are to be congratulated on the completion of a task of great magnitude. Not one of the least of their difficulties must have been to eliminate a conflict of opinion between the numerous and distinguished contributors who have taken part in this literary symposium. We notice in these two volumes greater uniformity and less reiteration than in the former edition; such a result implies most careful and painstaking editorship and a broad-minded appreciation of the criticism of reviewers.

Medical Electricity and Roentgen Rays. By SINCLAIR TOUSEY, A.M., M.D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. With 750 illustrations, 16 in colour. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 1116. Price 30*s.* net.

THIS is a voluminous work which will form a valuable, if ponderous, addition to the library of the specialist in medical electricity and radiology. The subjects are from the beginning treated in the most exhaustive manner, and every point is illustrated with suitable diagrams and drawings. The first section deals with the physical problems involved, and runs to nearly 300 pages. Considering that this is a medical work we think that this part might have been very considerably curtailed. The section on electrophysiology is distinctly good and complete. This first portion of the book, consisting of 340 pages, might well form a volume by itself for the more convenient use of those who seek a useful laboratory handbook. In the chapter on electro-pathology the author describes the effects of lightning and high- and low-tension currents on the tissues and organisms as a whole—a subject that becomes of daily increasing importance with the rapidly extending use of electricity for industrial purposes. We note that he makes no reference to the work of Jellinek of Vienna, whose contributions to the study of electric shock are of the first importance. Subsequent sections deal with the subjects of electro-diagnosis, ionic medication, one on general electrotherapeutics being strikingly brief. After a short reference to the effects of the electro-magnet the author passes on to the use of electricity in nervous diseases, but leaves us with the impression of a lack of completeness, and not greatly convinced of the efficacy of the methods advised.

High-frequency currents are treated at some length and

appear to find favour with the author for many conditions. He considers such applications of decided value in cases of pulmonary tuberculosis. On p. 558 is a radiograph of a patient's chest who had been treated by this method among others. He states that after three months the patient had very greatly improved; he has omitted, however, to give a radiograph of the chest before treatment, which would have been valuable for comparison. The patient died about a year later, but the author thinks the case might have been cured had the patient been able to follow up the treatment, a sanguine view which he does not support adequately. When he comes to the treatment of local conditions and skin lesions by high-frequency currents, the author is on surer ground, and records and illustrates some definitely valuable results, though we do not quite see the reason for illustrating a typical case of alopecia areata that is under treatment at the time of writing, and apparently unchanged. He has had excellent results in pruritus, psoriasis, and chronic ulcers.

A short chapter is given on phototherapy, and then follows the section on the X rays which takes up the rest of the volume except for a few pages at the end which are devoted to the consideration of radium. This X ray section has been very carefully prepared, and we notice a novelty in the form of a cellular diaphragm with which the author claims he can get better definition in his radiographs. It has the effect of intercepting the stray rays to an even greater extent than the ordinary tubular diaphragm. The methods advised in radiography call for no special mention, except that the technique employed in any part of the body is fully explained and illustrated. A short chapter is devoted to X ray treatment, which also calls for no special mention. We note that the author does not claim any higher value for the X ray treatment of malignant disease than it deserves.

The book as a whole is a very valuable contribution to the literature of the subjects treated, but we think it might have been condensed in many places with advantage. The work could have been made less unwieldy by issue in two separate volumes. The printing and illustrations are of a high order and leave nothing to be desired.

Uric Acid in the Clinic. A Clinical Appendix to "Uric Acid as a Factor in the Causation of Disease." By ALEXANDER HAIG, M.A., M.D. Oxon., F.R.C.P. Lond., Senior Physician to the Metropolitan Hospital and the Royal Hospital for Children and Women; late Casualty Physician to St. Bartholomew's Hospital; assisted by KENNETH G. HAIG, L.R.C.P. Lond., M.R.C.S. Eng. London: J. and A. Churchill. 1910. Pp. 306. Price 5*s.* net.

IN this book Dr. Haig gives descriptions of cases illustrating his views regarding the pathogenic effects of uric acid. It is to be regarded as a clinical appendix to the well-known book in which he has enunciated his opinions; at the same time he has further developed them in the commentaries he gives upon the cases described. He maintains that the diseases or conditions caused by uric acid fall into two groups, the first being the collæmic group, in which he believes that the blood is thickened and its circulation hindered by floating particles of colloid uric acid; and the second the precipitation or retention group in which local retention of uric acid leads to irritation or pain. The collæmic group is subdivided into conditions due to simple collæmia, such as headache, epilepsy, neurasthenia, mental depression, asthma, insomnia, and various other conditions and groups of symptoms. The second subdivision is described as collæmia complicated by an organic factor, and comprises dyspepsia, chorea, Bright's disease, glycosuria, diabetes, high blood pressure, Graves's disease, Raynaud's disease, &c. In the retention group the ordinary gouty conditions are included, as well as arthritis, endocarditis, catarrhs, and cutaneous manifestations. Dr. Haig insists that these various conditions are not sharply marked off from one another and that they are not diseases, but are in all varieties and combinations the results of food poisoning. He discusses the effects of what he describes as a "uric-acid free" diet on these conditions. He divides drugs into solvents and precipitants, and climates are similarly classified. The data given in this book are for the most part simply illustrative cases, and for critical purposes must be considered in connexion with the original work.

LIBRARY TABLE.

The Expectation of Life of the Consumptive after Sanatorium Treatment. By NOEL DEAN BARDSWELL, M.D. Edin., M.R.C.P. Lond., F.R.S. Edin., Medical Superintendent, King Edward VII. Sanatorium. London, Edinburgh, and Glasgow: Henry Frowde and Hodder and Stoughton. 1910. Pp. 130. Price 3*s.* 6*d.* net.—Few tasks are more difficult than that of appraising the value of any method of treatment in a chronic disease of variable type such as pulmonary tuberculosis. A careful study of the after-histories of cases treated at sanatoriums is calculated to afford useful information in regard to the results of that method of treatment. Dr. Bardswell gives a careful statistical study of 241 patients who were under his care in sanatoriums during the years 1899 to 1905. He classifies his cases according to their condition on admission into three groups—viz., incipient, moderately advanced, and far advanced. He gives the results at the time the patients left the sanatoriums and also in 1909. Of the 241 patients, as many as 101, or 45 per cent., were dead in 1909, while 99, or 41 per cent., were classified as "well," and 15, or 6·2 per cent., as "alive"—i.e., "the patient has to make the care of his health his chief consideration in life, possibly to the exclusion of everything else." When the cases are studied in their respective classes the results are less gloomy, for of the 62 incipient cases, 46, or 74 per cent., were classified as well; 1, or 1·6 per cent., as alive; and 11, or 17 6 per cent., as dead, 4 being lost sight of. Among the moderately advanced cases 36·8 per cent. had died, and among the advanced cases 88 per cent. Dr. Bardswell examines his statistics by various methods and gives an interesting commentary upon the results obtained. His conclusions are temperate and practical and he makes no exaggerated claims as to the value of sanatorium methods. His little book is a useful contribution to a subject which is now widely discussed.

Nursing in Diseases of the Eye, Ear, Nose, and Throat. By the Committee on Nurses of the Manhattan Eye, Ear, and Throat Hospital. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 281. Price 6*s.* 6*d.* net.—This is a good little book upon the nursing of sufferers from eye, ear, nose, and throat diseases. In detailing the general duties of sick-nursing, as well as those called for in special diseases, its range is large, nevertheless it avoids superficiality or tiresome minuteness, and is full of invaluable hints clearly and plainly set down. In the treatment of emergencies there is little or nothing omitted that is likely to prove of use to the attendant, and we would refer to the instructions given for the stilling of epistaxis as particularly serviceable. In the after-treatment of tracheotomy the steam tent is recommended as if it were indispensable. Doubtless climatic conditions render it advisable in many quarters of the globe, but we believe that in London experience has shown that tracheotomy cases do perfectly well, as a rule, when exposed to the ordinary ward atmosphere. We should have been glad of fuller details on the important matter of the procedure and after-treatment of the major operations on the nose and ear. As a rule, purely medical points are wisely omitted, but one among those included—namely, the statement that nasal septal

resection should not be undertaken under the age of 14 years—is inaccurate. Apart from these slight criticisms, we confidently recommend the book as a handy guide in the nursing of the special diseases in question, and much of its contents is worthy of the attention not only of nurses but also of surgeons.

The Law Relating to Pauper Lunatics. By SYDNEY DAVEY, B.A., LL.B., of the Middle Temple, Barrister at Law. Second edition. London: The Poor-law Publications Company. 1910. Pp. 283. Price 6*s.* net.—A law-book naturally has to be kept abreast of legislative change and of the development of the law by judicial decisions, so that a second edition of a convenient manual dealing with the law upon a particular subject may be called for after seven years, even though no new statutes of any importance affect its subject-matter. At all events Mr. Davey has no great legal novelty to record, and the recently decided cases which he now incorporates deal with such questions as the reimbursement of the expenses of maintenance and with other topics of interest to guardians responsible as such for the finances of their union rather than to the officers to whom is entrusted the medical care of the pauper lunatic. Medical officers of unions will, however, find their duties and obligations succinctly stated by the author under appropriate headings, the Lunacy Act of 1890 being the principal source from which these are derived. An appendix to the text contains all necessary forms, and the table of contents and index are such as to render readily obtainable any information that is included and that may be sought for.

The Death-Dealing Insects and Their Story. By C. CONYERS MORRELL. Manchester: H. A. W. Offices. 1910. Illustrated. Pp. 79. Price 1*s.*—This little work, written by a medical man who has travelled much in tropical countries, is intended mainly for the purpose of instructing and educating the laity, particularly those who are about to take up residence in a warm climate. Its object is to explain as clearly and as forcibly as possible, in language free from medical and scientific technicalities, the mode in which certain common but serious tropical diseases are conveyed to man through the instrumentality of insects, and the means by which such transmission may be prevented. A considerable portion of the book is naturally devoted to mosquitoes, the transmitters of malaria, yellow fever, and filariasis, and a full description is given of the malarial cycle. A chapter is devoted to sleeping sickness and the tsetse flies, and another to plague and the rat flea. Finally, a chapter is added on ticks and disease, though, as the author says, the tick is not, strictly speaking, an insect. We strongly recommend the work to those about to reside in the tropics. The author's style is clear and interesting, and his statements are easy of comprehension by non-medical readers. We may, however, be permitted to point out that the description of the measures in connexion with the prevention of plague needs some modification. For example, on p. 72 it is stated that "in cases where a ship is infected she is placed in quarantine and no one is allowed to land until the authorities are satisfied that the vessel is free from infection." In most civilised countries quarantine is now abolished and a more sensible and humane policy is carried out, under which immediately upon the ship's arrival the plague patient is landed for isolation and treatment on shore, the vessel being only detained until disinfection can be carried out, while passengers, under certain safeguards, are free to proceed without delay to their destinations.

JOURNALS.

Paludism: Being the Transactions of the Committee for the Study of Malaria in India. Edited by Major S. P. JAMES, I.M.S. Simla: Government Central Branch Press. 1910.—This new journal is one of the outcomes of the conference convened by the Government of India and held at Simla in October, 1909. At that meeting it was decided to establish an organisation which should deal specially with the difficult problem of malaria in India, including investigation of the epidemiology and endemiology of the disease. In connexion with this organisation a central scientific committee was appointed comprising the following officers—viz.: Lieutenant-Colonel J. T. W. Leslie, C.I.E., I.M.S., the Sanitary Commissioner; Lieutenant-Colonel D. Semple, R.A.M.C., director of the Central Research Institute, Kasauli; Major S. P. James, statistical officer to the Government of India in the Medical and Sanitary Departments; and Captain S. R. Christophers, I.M.S., assistant to the director of the Central Research Institute. It was also resolved to establish a Central Malaria Bureau at Kasauli, and to issue a journal under the title of "Paludism," of which Major James was to act as editor. The first number of this journal is now before us, comprising over 50 pages of printed matter. In an "editorial record" Major James sets out the main circumstances leading up to the appearance of the new periodical, the future numbers of which, it is expected, will be issued every three or four months. Following this editorial is an article on Investigations Relating to Quinine, in which a number of questions are formulated for the guidance of inquirers. These questions are subdivided into those relating to the treatment of primary cases of malaria, the after-treatment (treatment to prevent relapses), the treatment of apparently healthy malaria carriers, and the prevention of new infections. A memorandum is submitted containing questions to which the central committee desire answers respecting endemic and epidemic malaria. Another contribution is a short syllabus of the work done at the malaria classes for medical officers held at Amritsar during March and April of the present year. Captain Christophers contributes a valuable article entitled "Suggestions on the Use of Available Statistics for Studying Malaria in India." These suggestions cannot fail to be of great service to workers on the subject. The editor gives some "Notes on Mosquitoes," including a description, with illustrations, of a new anopheline, *Christophersia halli*; he also furnishes some observations on the generic position of the anophelines *stephensi*, *willmori*, and *rossi*, and also on the prothoracic lobes or patagia of anophelines. The number concludes with a digest of recent literature on malaria in India and in other countries. This new periodical should have success, for there can be little doubt of its proving of great use not only to the workers in India for whom it is primarily intended, but also to investigators in other parts of the world where malaria prevails. It seems to be the intention of the central scientific committee to make the Central Malaria Bureau at Kasauli and its quarterly journal *Paludism* achieve for malaria in India what the Sleeping Sickness Bureau in London and its monthly bulletin have done in advancing the study of trypanosomiasis.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

A QUARTERLY meeting of the Council was held on Oct. 13th, Mr. BUTLIN, the President, being in the chair.

The SECRETARY reported the death, on Sept. 11th, of Mr. John Langton, past Vice-President, and past member of the Council and of the Court of Examiners. It was resolved—

That the Council hereby express their deep regret at the death of Mr. John Langton, past Vice-President of the College, and their sincere sympathy with his widow and family in the loss which they have sustained.

That the Council do also record their appreciation of the services rendered to the College by Mr. Langton as a Vice-President and member of the Council and of the Court of Examiners, and their respect for

the devotion which he displayed in the work which those offices imposed upon him.

The best thanks of the Council were given to the President for the gift of his collection of sketches of early cancer of the tongue and conditions which may be mistaken for early cancer. The best thanks of the Council were given to Professor F. W. Bird of Melbourne for the gift of his collection of stereoscopic radiographs of anatomical and pathological subjects, and also to Dr. C. G. Seligmann for presenting a number of New Guinea skulls.

Mr. RICKMAN J. GODLEE, on behalf of the Committee on the Annual Report of the Council, submitted a draft copy of the report to be presented to the Fellows and Members at the annual meeting on Thursday, Nov. 17th. The report was approved and adopted.

Mr. J. F. Colyer was elected a member of the Board of Examiners in Dental Surgery, and Mr. Godlee was reappointed a member of the Committee of Management.

It was resolved to recognise the Great Northern Central Hospital as a place of instruction for the Final Fellowship.

Mr. Gerald Gibbon, till lately a student of Epsom College and now of St. Bartholomew's Hospital, was nominated the Eighteenth Jenks Scholar.

A vote of thanks was given to Dr. Amand Routh for representing the College at the recent International Congress on Gynæcology at St. Petersburg.

THE NEW CALENDAR.

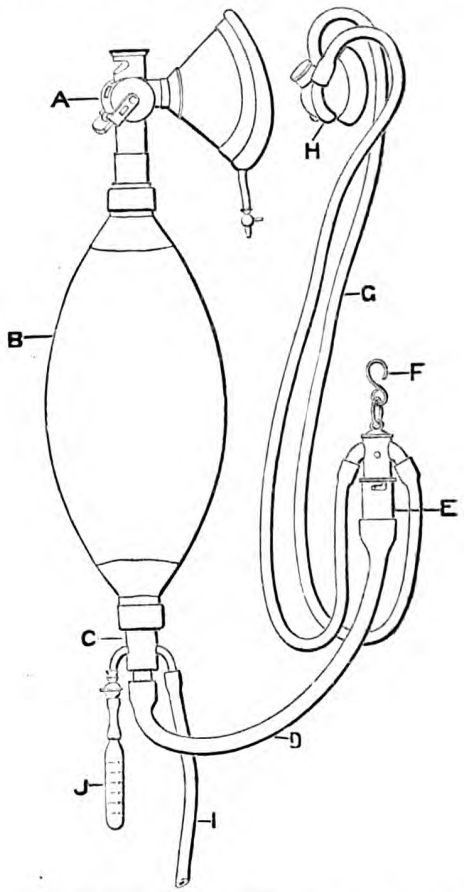
The Calendar of the Royal College of Surgeons of England for 1910–11 has been published by the Council of the College. There is now included in the Calendar a list of the trustees of the odontological collection which is housed at the College, whilst lists of the Masters of the Company of Surgeons, of the members of the Court of Assistants, and of the Court of Examiners from 1745 to 1800 have also been added. Considerable alteration in the text of the regulations for the examinations for the various College diplomas has been necessitated by the admission of women to the examinations. The Fellows of the College now number 1487, an increase of 30 over that of last year. There are 1449 Fellows admitted by examination, 29 elected as Members of 20 years' standing, eight "Fellows by election," and only one Fellow now remains "elected ad eundem." The number of Members on the roll is 17,030, an increase of 73, whilst there are 2263 Licentiates in Dental Surgery and 674 Diplomates in Public Health. The number of Licentiates in Midwifery is getting smaller each year and only 323 now remain. Mr. G. Carrick Steet, aged 92 years, the oldest Fellow of the College, is, and has been for a considerable time, a resident of London. The oldest Member, Mr. Edgar Jones, who is in his 101st year, resides in Essex.

The Secretary's report of the proceedings of the College Council during the past year occupies many pages of the Calendar and contains much interesting matter concerning the proposed combination with the University of London, the jubilee of the College Licence in Dental Surgery, and the administration of anæsthetics. With regard to the Museum, the superintendence of which is entrusted by the Council to a committee of its members, a summary of the progress made in the preservation, arrangement, and augmentation of the collection is contained in the Calendar. The institution of a historical collection has been carried out, and it contains preparations from the general collection which illustrate the diseases of eminent and famous personages or illustrate past medical and surgical methods and beliefs. The new card catalogue has now been instituted and four cabinets have been specially constructed for the same and placed in the entrance hall of the Museum. The large and important pathological department and also the gynæcological section are now being re-catalogued, and the new illustrated guide to the Museum has already been sold to a large number of visitors. The library of the College has had many valuable donations made to it, including 18 works published by the professors and distinguished alumni of the University of Geneva on the occasion of its 350th anniversary; a reproduction of the "Tabulæ Anatomicæ Sex" of Vesalius, privately printed for Sir William Stirling Maxwell in 1874 and now presented by his son, Sir John Stirling Maxwell; and the manuscripts of the late Sir James Paget from his son, Mr. Stephen Paget. Sir John Tweedy has also made many valuable presentations to the library numbering some 21 volumes, and has also been the means of acquiring for the College three very rare early printed books. The number of readers who used the library during the year was 10,413, a considerable increase on the number for the previous year. Particulars of the various prizes offered for competition by the College are given in the Calendar in full, together with a list of the several recipients since they were instituted.

New Inventions.

A COMBINED ORAL AND NASAL NITROUS-OXIDE INHALER.

I HAVE designed this inhaler and find it of great use in nervous patients and in those with nasal obstruction who cannot breathe through the ordinary nasal inhalers; also in hairy subjects, those with short upper lips, and the edentulous,



A, 3-way stop-cock and face-piece. B, Gas-bag for N_2O. C, Valved outlet tube supplying gas to nose-piece tubes. D, Flexible tube connecting portions C and E. E, Metal terminal with side outlets connecting with nasal supply tubes. F, Hook for suspending inhaler at side of chair. G, Supply tubes to nose-piece. H, Metal nose-piece with expiratory valve. I, Supply tube from cylinders. J, Graduated glass tube for use with ethyl chloride.

on whom it is difficult to fit other nasal apparatus accurately. It is quite simple to use and gives excellent results where prolonged gas anæsthesia is required. It can be used for ether and ethyl chloride with or without gas. It has been manufactured for me by Messrs. C. Barth and Co.

T. GRAHAM SCOTT, M.R.C.S. Eng., L.R.C.P. Lond.,
Senior Anæsthetist, Great Ormond-street Children's Hospital; Senior House Anæsthetist, Royal Dental Hospital, London.

THE LANCET.

LONDON: SATURDAY, OCTOBER 22, 1910.

The Catholic Spirit in Scientific Inquiry.

IT is a striking tribute to the profound genius of WILLIAM HARVEY that in the long series of distinguished physicians who have been called on to deliver the oration commemorative of his fame, so many should have dwelt on the remarkable manner in which the most recent pre-occupations of modern biology are often foreshadowed in the writings of the great English physiologist of the seventeenth century. The Harveian orator for this year, Dr. H. B. DONKIN, whose address, delivered before the Royal College of Physicians of London on Oct. 18th, is published in full in our present issue, has followed this precedent, while selecting as the material of his excellent oration a subject on which he is particularly fitted to speak. Dr. DONKIN'S official work of late years has been much concerned with such matters as crime, inebriety, and mental defect, and this fact led him to select for the matter of his discourse the evolution and inheritance of mental characters with special reference to the influence of heredity in the causation of anti-social conduct; and he has had an easy task in showing that such a choice of subject, so far from being alien to a Harveian oration, is peculiarly fitting to the commemoration of the great master who thought nothing in nature more marvellous than that law by which, to quote his own words, "the son is born like his parents, and virtues which ennoble and vices which degrade a race are sometimes passed on to descendants through a long series of years." The lucidity and conciseness with which Dr. DONKIN has treated this vast question will excuse us from all attempt to condense his remarks; but the salient lesson of his discourse may perhaps be dwelt upon briefly with advantage to our readers.

Dr. DONKIN'S address is essentially a plea for a more catholic spirit with regard to scientific methods of inquiry. As he rightly insists, we are nowadays in some danger of adopting a too exclusive attitude in this matter, and we are apt to pin our faith to some one particular form of investigation instead of following that comprehensive method which takes into account all authentic and relevant facts, by whatever way the knowledge of them may have been acquired. And no better proof of the soundness of this view could be furnished than the recent history of one of the subjects to which Dr. DONKIN refers, and on which, indeed, he speaks with exceptional authority. We allude to the study which it is now customary to designate by the term "criminology"—a hybrid term of barbarous sound which Dr. DONKIN reprobates by the gentle censure of inverted commas. The study of crime has necessarily attracted attention from the first institution of society, and theories of crime and conceptions of the nature and temperament of criminals are implicit in many of those primitive generalisations which have come down to us as proverbs. And from those early days down to the time of learned Congresses of Criminal Anthropology the question of the etiology of crime has been discussed with a great expenditure of zeal and industry and with extremely little practical result. And if we ask the reason of this unsatisfactory issue we shall find it in that tendency to narrow and one-sided inquiry which Dr. DONKIN so justly criticises. Of the earlier theories regarding the criminal individuality it is needless to speak; they made no pretence to a scientific origin. More instructive from our present point of view are those doctrines of later date which are associated in the popular mind with the conception of criminology, and which, as they are supposed to be the outcome of inductive investigation, are presented by their adherents as in a special degree scientific. These doctrines of hereditary criminality, which Dr. DONKIN stigmatises as "a mass of imperfect and unclassified observations linked together by untested hypotheses," are, surely, an excellent example of the dangers against which he seeks to warn us in biological and sociological inquiries, and the evils which they illustrate on a somewhat magnified scale are met with also in a less marked, and therefore more insidious, form in other investigations of a similar order. When we examine these doctrines more closely we are immediately struck by the fact that, despite their avowedly inductive origin, the hypotheses of a congenital criminal organisation are based on an *à priori* assumption of a kind with which some biologists have made us familiar in recent years. That assumption is to the effect that modes of social conduct can be reduced to the expression of simple inborn traits; the "criminal" is a law-breaker by virtue of his innate anti-social disposition, the "inebriate" drinks to excess because of an innate susceptibility to the charm of alcohol, and so on. This method of explaining criminal conduct—a method which we can hardly call original, for it was anticipated by MOLIÈRE'S doctor when he accounted for the action of opium by ascribing to it a *virtus dormitiva*—would not, perhaps, have gained acceptance had it been so crudely stated, but when it was presented with the support of an imposing array of anthropometric observations its inherent fallacies were disguised, and it took on an imposing scientific air because, as Dr. DONKIN points out, we are prone to attach exaggerated importance to the data ascertained by experiment or by the application of special methods of research, while we undervalue those facts which we can discover by the exercise of our intelligence and our unaided senses. We have, in fact, so thoroughly taken to heart HARVEY'S exhortation "to search out and study the secrets of nature by way of experiment" that we are in some danger of exalting this method into a fetich. Heaven forbid that we should belittle whole and excellent schools of hard and acute work; but we must try gallantly to relegate that work to its proper place.

Another lesson, and a lesson which Dr. DONKIN has been careful to inculcate throughout his discourse, is that we are perhaps too ready at the present time to ignore the influence

of the environment in determining the direction of individual development. This tendency, which the doctrine of hereditary criminality displays in an extreme form, is implicit in a great deal of that biological discussion of social problems which enjoys so wide a vogue nowadays. The biometrician with his mass statistics and the Mendelian with his pedigrees, however much they may be at variance on other matters, appear to be agreed not infrequently in assuming that the social value of the adult individual can be taken too completely as a measure of his germinal endowment. When we bear in mind how large a part gratuitous assumptions of the same sort played in the theories of LOMBROSO the analogy may perhaps inspire us with a distrust of such generalisations, doubly dangerous because they are offered to us as motives for immediate actions and abstentions which may have far-reaching effects on the well-being of the race. Meanwhile, we shall do well to remember that the study of the criminal by the methods which are now at length beginning to be adopted—that is to say, by the psychological examination of individual criminals—by no means confirms any view that the rôle of the environment is negligible; on the contrary, it tends more and more to show that, to quote the apt language of MANOUVRIER, in most instances the delinquent differs from the law-abiding citizen mainly in his acts and little in his aptitudes, and that criminal conduct is far more a result of unfavourable environment than of abnormal organisation. It does not, of course, follow that this is equally true of the relation of organisation and environment in other bio-social phenomena; but it is certain that we cannot accept the contrary view until we have confirmed it by applying to the examination of these phenomena the same method of individual study which, as has been so rightly urged by Mr. J. LIONEL TAYLER, is the essential foundation of sociological inquiry.

Anaphylaxis.

THE phenomenon of anaphylaxis or hypersensibility to serum or protein injections is one with important practical bearings in connexion with the treatment of disease in man by the injection of alien serums. The term "anaphylaxis" was originally introduced by RICHET as an antithesis to prophylaxis, and is in some sense a misnomer, since anaphylaxis may be of value to the organism as a protection. VON PIRQUET introduced another term—viz., "allergie"—to express the altered power of an organism to react to a foreign protein. The ordinary diagnostic tuberculin and mallein reactions are instances of anaphylaxis. No reaction is produced in normal persons by these substances in moderate doses, whereas in those suffering from tuberculosis or glanders a reaction is produced owing to the increased susceptibility. Experimental anaphylaxis can be readily studied in the guinea-pig owing to its sensitiveness to substances such as horse serum, white of egg, and milk. The so-called "serum disease" which sometimes occurs in man after the injection of horse serum was studied by VON PIRQUET and SCHICK, who suggested that the immunity given by vaccinia and other infections may be due to a power of rapid or immediate reaction acquired by the organism, and that the property of anaphylaxis, so far from being a danger, may sometimes be a factor in protection.

An interesting review of the literature of this subject was published in the *Archives of Internal Medicine* of June 15th, 1909, by Dr. JOHN F. ANDERSON and Dr. M. J. ROSENAU, who have in collaboration devoted much attention to the investigation of anaphylactic phenomena. We have recently received an interesting report of further researches upon this subject by Dr. ANDERSON and Dr. W. H. FROST.[1] They point out that DOERR and RUSS have introduced a method enabling a quantitative study of anaphylaxis to be carried out, and that they have demonstrated a definite quantitative relation between antigen and sensitive antibody. Dr. ANDERSON and Dr. FROST give details of their own experiments and arrive at some interesting deductions from them in regard to the nature of hypersusceptibility, anti-anaphylaxis, and immunity. They used horse serum and white of egg as antigens, and they studied especially the anaphylactic antibody, for which they have introduced the new term "allergin." They believe that hypersusceptibility to a foreign protein consists in an increase in the normal power of assimilating this protein, especially an increase in the rapidity of the reaction. This is due to the formation of a specific antibody demonstrable in the serum of sensitive guinea-pigs and in somatic tissues such as smooth muscle. It is also suggested that the action of this antibody upon its antigen is quantitative and is probably primarily proteolytic. Anaphylactic shock is in their opinion a disturbance of metabolic equilibrium rather than the effect of a specific toxic action. Anti-anaphylaxis is the condition which immediately succeeds anaphylactic shock in an anaphylactic animal, in which it is in a condition of immunity to anaphylactic shock from a further injection of the same antigen. Anti-anaphylaxis may, however, be induced by injection of antigen in repeated small doses. It is explained as due to saturation of the anaphylactic antibody with antigen. Anti-anaphylaxis is a temporary condition, which passes gradually into a condition of relative insusceptibility, which is distinguished as "immunity" proper. Anaphylaxis may be transferred passively to a normal guinea-pig by injection of serum from a sensitised animal. This passive transfer, as also the hereditary transmission of anaphylaxis, consists in a transfer of the anaphylactic antibody according to Dr. ANDERSON and Dr. FROST. They conceive anaphylaxis as a step toward immunity which is an increased capacity for safely and rapidly eliminating the specific antigen protein.

An interesting paper from Professor G. BILLARD, of Clermont-Ferrand, is published this week, in which he suggests that hay fever, asthma, nettle-rash, and the idiosyncrasy possessed by some people towards certain articles of diet are all manifestations of anaphylaxis. He gives details of a case in which he was able to trace the successive steps in the progress of the patient's condition from nasal catarrh to a bad attack of asthma. He believes also that some asthmatics are hereditarily anaphylactic. In regard to nettle-rash, he quotes a case of a young man who always developed nettle-rash after

[1] Studies upon Anaphylaxis. Bulletin No. 64, Hygienic Laboratory, Public Health and Marine Hospital Service of the United States, Washington, 1910.

eating pork. His serum injected in a guinea-pig induced a clear anaphylaxis towards pig's serum. The attacks of asthma induced by articles of diet Professor BILLARD explains in a similar manner to those induced by pollen, and to the urticaria induced by shellfish or similar articles of diet—viz., as manifestations of anaphylaxis. He sums up his views in the following sentence: "I am able to conclude that neuro-arthritics, and especially asthmatics and those predisposed to hay fever, are persons victims to anaphylaxia, either hereditary or acquired." His observations, though suggestive, hardly afford convincing proof of the thesis he champions, since the absolute experimental demonstration of the anaphylactic nature of some of the conditions he refers to is, as he admits, at present wanting. It is also noteworthy in this connexion that the majority of observers have failed to induce experimental anaphylaxis through the alimentary canal, the antigen protein apparently having to be given by subcutaneous, intravenous, or hypodermic injection to be successful. Until the possibility of successful production of anaphylaxis through the absorption of the antigen by the alimentary canal has been incontrovertibly established Professor BILLARD'S views must remain unconvincing.

It is difficult at the present time to determine the exact rôle of the phenomenon of anaphylaxis in the general process of immunity. As our knowledge of the reactive process of the body develops it becomes increasingly obvious that immunity is a highly complex process, and that the relative importance of humoral or chemical, and of phagocytic or cellular, reactions is difficult to appraise. The question of anaphylaxis in relation to immunity was discussed at some length by Dr. F. W. ANDREWES in the Croonian lectures, which were published in THE LANCET of June 25th, July 2nd, 9th, and 16th. He demonstrated that the phenomena of anaphylaxis are not entirely humoral, and that the leucocytes are profoundly affected during certain phases of the reaction between antigen and antibody. The initial leucopenia which occurs after the injection of living or dead bacteria or after the injection of antigen in an anaphylactic animal is, he maintains, an anaphylactic phenomenon. It is in effect an immunity reaction, and is, he further suggests, a more delicate test of the reaction between antigen and antibody than the occurrence of the clinical symptoms of anaphylactic shock. The dangerous and sometimes fatal nature of these symptoms seems difficult to interpret on the view that anaphylaxis is an immunity reaction, and therefore useful to the organism, but, as Dr. ANDREWES points out, under natural conditions it is highly improbable that so large doses of alien protein or of bacterial agents will suddenly gain entrance as those given under experimental conditions. His conclusion is worth quoting. "We must not," he says, "deny the right of the anaphylactic animal to be termed immune merely because we can make it ill or kill it by an artificial procedure which has no parallel in ordinary life." There can be little doubt that the property of anaphylaxis is one of great importance to the organism and that its careful study will yield valuable information and probably important practical applications. The literature of the subject is already considerable and its developments will be watched with interest by all who are engaged in the therapeutic applications of immunity reactions.

Bone-setting.

WE venture to deal somewhat plainly with certain utterances of Mr. W. T. STEAD in the *Review of Reviews* for October, and we are sure that he will not resent our plainness, for he has alluded to THE LANCET in epithets so uncomplimentary that he must have been seeking a straight reply. In the last number of the *Review of Reviews*, then, there is an account of the doings of a well-known bone-setter, and to his achievements in what Mr. STEAD terms a "hinterland of surgery," meaning, it would appear, a department of surgery which, formerly practised chiefly by persons described as "bone-setters," was prominently brought before the medical profession in our columns, 40 years ago, by Dr. WHARTON HOOD, who more recently, and shortly before his retirement from practice, published a treatise on the manner in which recent injuries should be dealt with, in order to avoid the occurrence of the conditions which he had previously shown the way to cure. We will not attempt to follow Mr. STEAD through a discussion in which a fertile imagination is drawn upon for an account of the position which we have assumed; but we may point out that the present support of Mr. H. A. BARKER is not more emphatic than that which he accorded, a few years ago, to Count MATTEI and variously coloured "electricities." There is no doubt that Mr. STEAD is very imaginative. We do not suggest that Mr. BARKER belongs to Count MATTEI'S category; and if it be true, as more trustworthy people than Mr. STEAD have said, that he is a skilful manipulator, we can only regret that he has not enjoyed the benefit of a professional education which would have shown him certain pitfalls to be avoided, and would have enabled him to turn his natural gifts to the best account. We do not feel sure whether the description of his achievements in Mr. STEAD'S journal is entirely his own, or whether it has been partially refracted in its passage through the medium of Mr. STEAD'S consciousness, but there is one part of it on which we feel inclined to comment. We are told that Mr. BARKER has "cured" 27,000 cases which, according to the methods of the "recognised practitioner," were incurable; that he has failed, or so it is implied, in 3000 more which he took under treatment; and that he "selected" the 30,000 from among "a much greater number" who were brought to him. He would be compelled to make a careful examination in order to decide that a given case was unsuitable for his methods; and he speaks of requiring from five to twenty manipulations for a single patient, not to mention the time needed "for the production of temporary anæsthesia." It is not too much to assume that every case, taking one with another, would occupy him for an hour. But Mr. BARKER has only been at work, according to Mr. STEAD, for nearly 20 years, so that recently he must have been very busy, almost busier than it is possible to conceive, as a simple sum in arithmetic will show. The neglect of the medical profession cannot have hurt him materially.

Turning to the essential conditions of the problem which the discussion on the merits or demerits of Mr. BARKER has brought forward, they are, in truth, sufficiently simple. What is known as "bone-setting" arose as an industry in certain thinly populated parts of England, largely among the dalesmen of the north, where medical or surgical aid was often difficult to procure, where the sports and labours of herdsmen and shepherds entailed considerable liability to injury; and where domestic medicine, supported by the sensations of the sufferer, prescribed that an injured part should be kept at rest, and not infrequently that it should be comforted by hot fomentations. The hot fomentations promoted a flow of arterial blood to the injured part; the quiescence of the muscles withdrew the force by which this blood would normally have been pushed on into the veins; extensive transudation of blood fluids occurred, and this transudation, as time went on, hardened and contracted into crippling adhesions. The muscles, wasted and weakened by quiescence, were no longer able to perform even their normal functions, were utterly unable to overcome the new resistance opposed to them, and resented by pain any effort to force them into renewed activity. The result was a fixed and useless joint or limb, until the bone-setter, by more or less skilful manipulation, ruptured the adhesions and restored mobility, with the consequence that the muscles, unless hopelessly atrophied, regained in time their normal vigour. The type of the whole matter is furnished by a sprained ankle, which, 50 years ago, was treated by rest and hot fomentations, and was justly regarded as a more serious injury than a broken leg, while to-day, treated by support and movement, it speedily recovers. The conditions tending to produce disability of joints and muscles received, unfortunately, a new lease of life in this country from a misinterpretation of the teachings of the late Mr. HILTON, whose famous prescription of rest for pain, too faithfully followed, has furnished hundreds of cases to the bone-setter. Those who followed Mr. HILTON'S recommendations were apt to forget that rest implies eventual atrophy of muscle, with consequent venous congestion and plastic effusions into the surrounding tissues; and that pain, arising from the fact that a weak muscle is called upon to exert itself, is not only as harmless as the pain of parturition, but is certain to bring about its own cure by the mere continuance of effort in disregard of it. The improved results now obtained in the treatment of fractures, which are largely due to Dr. WHARTON HOOD'S teaching and example, are mainly dependent upon rubbing to prevent stagnation of the venous current, and upon sufficient action of the muscles of the limb to preserve them from undue wasting during the period of reunion. The business of scientific surgery is not so much to become skilful in manipulations which ought not to be necessary as to treat injuries in such a way that prompt recovery may ensue, and that no manipulations will be required. The cases following injury in which the bone-setters achieve success will be found, on inquiry, to resolve themselves into two categories: those in which an injury, such as a rupture of muscular fibres, received during some active game had been originally treated by mere rest at home, under the belief that it would "soon get well," and those in which the natural desire for rest had been encouraged by some practitioner, who, in this respect, had suffered himself to remain somewhat in the rear of the modern developments of surgery. There is, in reality, no "hinterland," unless such a name can be given to a number of cases due to ineffective treatment of recent and comparatively trifling injuries, injuries of a class which has been rendered numerous by the modern devotion of youth to the pursuits of athleticism, and to the often untrained condition of those by whom these pursuits are undertaken.

Whether Mr. BARKER'S practical knowledge of anatomy, which appears, according to Mr. STEAD'S article, to have been gained independently of dissection, from the perusal of two excellent manuals, can be sufficient to furnish safe guidance in his manipulations, is a question highly interesting to his patients, but one which we do not propose to discuss. The point of chief importance to the profession is whether the supposed hinterland has any real existence other than as a residuum left behind by domestic medicine, or possibly, in some cases, by methods of treatment in which rest has been carried to excess, and the sensations of the patient indulged without due reference to the effect of the indulgence upon his permanent welfare. Nothing in Mr. STEAD'S words, convincing as he has tried to make them, leads us to suppose that we have taken up an illiberal attitude in this matter, or that bone-setters, individually or as a class, ought to be regarded as on the same scientific plane as fully qualified medical men. His article, to which he has invited our attention, ends with an appeal "made with the utmost confidence" to leading surgeons and others to constitute a committee of surgeons, whose names would command the respect of the public, to investigate Mr. BARKER'S methods. We think that Mr. STEAD'S utmost confidence may be betrayed, and that he himself has, not for the first time, written about what he does not understand.

Annotations.

"Ne quid nimis."

THE PRICE OF PROGRESS.

IT was a well-known custom amongst primitive peoples to assure the stability of any undertaking by the sacrifice of life. In the earliest times the life was human; in later and more merciful days an animal was substituted, and still later an image was used, or sometimes the shadow of a man was allowed to fall over the foundation trench, and was thereby symbolically buried, but in all these rites the sacrifice was voluntary. The human victim was sometimes willing, sometimes drugged, so as at least to be non-resistant, and the animal was bought with a price. Even now it is no uncommon thing in India to hear that a bridge or other structure will stand because certain lives have been sacrificed during the course of construction, and it is only too certain a fact that any advance in human invention is always accompanied by the payment of a heavy toll in human life. Only by this can the successors of the pioneers get the mastery over the new forces which have been discovered. To go no farther back than 15 years ago, the study of the Roentgen rays has led to the death or mutilation

of more than one investigator, but their sacrifices have not been in vain, for we have now learned much of the powers and the management of the new form of energy. But the most recent discovery, that of flying, is still in the stage of demanding life as a price, and during this year only we believe that 19 lives have been lost, while the motor-car, although now a common-place, has also a grim record behind it. Surely we may ask ourselves whether enough lives have not been sacrificed and whether needless risks are not being run. Wellman and his party have escaped destruction, but Chavez is dead, killed, if we may credit reports, on the practical completion of an undertaking into which he entered with great misgivings; Dickson is seriously injured. To pass to motor-cars, the Vanderbilt Cup race held on Long Island has resulted in four persons being killed, two of them competitors, and in 20 persons being injured. In this instance there was a competition, but an absolutely useless one—namely, a speed competition. Everybody nowadays knows that a motor-car can go at 60, 70, or even 80 or 90 miles an hour, so why demonstrate the fact again? The utility of the motor-car is beyond dispute, that of the aeroplane is still in a debateable stage, but in our opinion the time has arrived when useless competitions or exhibitions should be sternly put a stop to. We do not for one moment suggest that aeroplaning trials should be done away with. Unavoidable accidents may and probably will still occur and human lives may still be sacrificed in the pursuit and for the increase of knowledge, and the price, if necessary, will be willingly paid. But it is time that unnecessary risks should be forbidden. No goal was ever yet attained without the expenditure of toil and pain, the conquest of the air and the perfecting of rapid modes of locomotion may be necessary from a patriotic as well as a commercial point of view, and yet the counsel of an easy-going man of the world who was yet a true patriot is still good for us to remember:—

> Expertus vacuum Daedalus aera
> Pennis non homini datis;
> Perrupit Acheronta Herculeus labor;
> Nil mortalibus arduum est,
> Caelum ipsum petimus stultitia; neque
> Per nostrum patimur scelus
> Iracunda Jovem ponere fulmina.

Horace doubtless had something else in his mind when he wrote the word "scelus," but foolhardiness and unnecessary risks, run in many instances solely for gain, are no bad translation thereof.

HEART DISEASE IN THE HOME ARMY.

IN the *United Service Magazine* of Sept. 14th is an interesting article under the above heading by Dr. W. Hill Climo, lieutenant-colonel Army Medical Staff (retired). He asserts that heart disease in the British army has been for many years a byword and a reproach to the medical and military authorities, for it is associated in the public mind with the soldier's life and with service conditions which are believed to be detrimental to health. Dr. Climo maintains that these are erroneous views, but he believes that the fault does not rest so much with the public as it does elsewhere. He believes that to a certain extent the Army Medical Department is responsible, partly, he says, because for many years departmental opinion has been influenced by the fact that a post-mortem examination is made in the case of every death which occurs in a military hospital, so that every lesion of the heart and of the blood-vessels is recorded, whereas in the case of the civil population there is no means of obtaining like information. He proceeds to advance arguments in support of his belief that military service, instead of being a cause of heart disease, offers the best means for its prevention. In order to arrive at a conclusion statistical considerations naturally have to be carefully studied. On the one hand, the incidence of diseases of the heart and of diseases of the blood-vessels as occurring in soldiers has to be made out, and then the incidence of the same diseases amongst the general population must be ascertained. From the Army Medical Department reports the former information can be obtained, but it is practically impossible to so calculate the latter with any degree of exactitude. But by reference to the Registrar-General's annual returns of deaths the general mortality can be found for any particular year. In this way results can be arrived at that go a long way to substantiate Dr. Climo's contention. He shows (1) that, taking the whole population in England and Wales, there were 3110 more deaths from diseases of the heart and from diseases of the blood-vessels in 1907 than there were in 1906, while in 1906 the deaths from these diseases exceeded those in 1905 by 1968; (2) that the percentage of deaths in 1907 was 6 60 greater than in 1905; (3) that the combined death-rate of diseases of the heart and of diseases of the blood-vessels is the greatest of any group of diseases, and is at the present time only a little less than one-sixth of the total mortality from all causes; (4) that the death-rate in the army from these diseases is decreasing with a corresponding number of invalids, whilst the rejections on enlistment, with fluctuations, show a progressive increase (this statement is founded on statistical evidence); and finally, (5) that the services of France and Germany, the two countries which have adopted universal military service for the longest period, have of all armies the lowest admission- and death-rates for cardiac affections. Dr. Climo deals mainly with statistics, but there are some clinical points which have a bearing on heart disease in the army; for instance, diseases of the blood-vessels, aneurysms particularly, are of syphilitic origin, and it would be interesting to obtain observations as to the incidence of aneurysm in relation to that of syphilis amongst soldiers. The question discussed in the article under consideration is an important one, and Dr. Climo's suggestion that an "inquiry should be made by the Army Medical Department in association with the General Staff of the Army" is one which should receive attention.

CAN FISH CONVEY THE BACILLUS OF CHOLERA?

TO answer this question, Professor Gosio of Rome, the State bacteriologist, has begun a series of observations on the Apulian and Neapolitan littoral, a torpedo-boat having been placed at his service by the Admiralty, with all the resources of his office, in *personnel* and equipment, on board. That typhoid fever can be conveyed by fish, particularly by the *frutta di mare* (shell-fish) so largely consumed on the Italian sea-board, is a well-authenticated fact. Sewage still finds its way into those waters, and the oyster dredged off Santa Lucia is notorious as a cause of gastro-enteritis. So common, in fact, is intestinal disturbance, in the late summer and early autumn, among the Neapolitans with whom at that season "la zuppa marinara" and fish diet generally are in special favour, that, when the cholera appeared three weeks ago, its presence was masked by the symptoms all too familiar among the consumers of such fare—the initial vomiting and abdominal malaise, characteristic of the Asiatic disease, being vaguely set down to the "sturbi intestinali" endemic before and after the dog-days. Imported from the Russian shores of the Black Sea, the cholera numbered many victims at the Apulian ports, and their dejections, whether on shipboard or on the littoral, may have passed into the digestive apparatus of the fish—the crustacea, in particular—with the possible multiplication of the "vibrioni colerici specifici." Now, says Professor Gosio,

"the problem before us is to ascertain whether, having effected their way into the intestine of the fish, the said 'vibrioni' multiply in large numbers? Again, in what other fish, besides the molluscs, do they seem to find a lodgment? And, further, do they take most kindly to migratory fish, when they would constitute a serious danger by transporting the infection to a distance?" Professor Gosio adds that, in the process of cooking, and in frying rather than in boiling, the cholera bacillus may be rendered innocuous; but no one familiar with the perfunctory cuisine of the Neapolitan poor will place much reliance on this safeguard. Besides, the oyster, the most suspected of the "frutta di mare," is almost invariably eaten raw. Professor Gosio's researches come not an hour too soon and their results are awaited with interest, not only by the pathologist, but by the public, the northern section of it in particular, which seeks health and warmth and distraction in the sun-traps of Italia Meridionale.

ENGLISH URBAN MORTALITY IN THE PAST SUMMER.

UNTIL the results of next year's census are known medical officers of health, and all interested in public health, are practically bound to accept the vital statistics issued by the Registrar-General as the best available test of local sanitary condition, although these statistics are hypothetically calculated on estimates of population based on the rates of increase or decrease that prevailed during the ten years ending in 1901. There are many undoubtedly good grounds for the opinion that at the present time the populations of our large towns (residing within their arbitrary boundaries), taken generally, and of London in particular, are by the official method of estimation considerably over-estimated, resulting in the under statement of their current annual rates of mortality and in the exaggeration of the persistent decline of their birth-rates. Some of the medical officers of health of our largest towns express in their reports a conviction that the official estimates considerably over-state the true populations of their sanitary districts, but, failing any more trustworthy method of estimate (in the absence of a quinquennial census), they naturally accept the official estimates, which imply a too favourable test of the sanitary condition of the over-estimated towns. As it is, however, quite possible that by the official method the present population of some of our large towns may be under-estimated, it may be assumed that the value of official statistics relating to the 77 largest English towns, in the aggregate, is not seriously affected by the want of more accurate information as to their present population. The official estimate of the population of these 77 towns, in the middle of this year, is very close upon 17 millions. Accepting this estimate, the 13 weekly returns issued by the Registrar-General during the three summer months of July, August, and September last show that the annual rate of mortality in the 77 towns during that period was equal to 11·8 per 1000, against 13·4 during the corresponding periods of the four years 1906–09 in the 76 towns to which the official reports related in those years. These figures imply that the death-rate in our largest towns during the past summer was no less than 12 per cent. below the mean rate in the four preceding summer quarters. It is satisfactory to feel assured that, after full allowance for the more than probable over-estimate of the population of these towns, the official mortality statistics indicate a real and substantial improvement in the health condition of our largest urban sanitary districts. Using the same official estimate of population, it appears that the mean annual birth-rate in the 77 towns during the three recent summer months was equal to 24·7 per 1000, against 26·5, 26·9, and 25·3 respectively in the three preceding summer quarters; thus it may safely be assumed that the urban birth-rate continues to decline. We are fortunately able to measure the recent rate of infant mortality free from the disturbing factor of untrustworthy estimates of population. During the 13 weeks of the past summer quarter, ending on the 1st inst., the deaths of infants under one year of age registered in the 77 largest English towns were equal to 113 per 1000 of the births registered in the same period, against 109 in the corresponding period of 1907, 145 in 1908, and 119 in 1909. Thus the rate of infant mortality during the past summer in these large towns was 11 per 1000 below the mean rate in the three preceding summer quarters, showing a decline of almost 10 per cent. It cannot be doubted that the recent awakening of the public conscience respecting the waste of infant life, and the simultaneous weakening of later child life by neglect, ignorance, and sanitary shortcoming, is already yielding substantial results, as the decline in the rate of infant mortality is now being persistently maintained. The death-rate of infants under one year of age during the first nine months of this year in the 77 largest English towns was equal to 108 per 1000 registered births, against 119, the mean rate of infant mortality in these towns in the corresponding periods of the three preceding years, 1907–09. This encouraging result of increased and sustained action by sanitary authorities, in order to cope with the evil of excessive infant mortality, should stimulate to further action the authorities of those towns in which the excess of infant mortality does not at present show the average proportion of this encouraging reduction.

PROFUSE HÆMATURIA THE FIRST SYMPTOM OF HYPERTROPHY OF THE PROSTATE.

IT is well known that hæmaturia may be due to prostatic hypertrophy, but profuse hæmaturia as the first symptom of the disease is a rarity. In the *Gazette Hebdomadaire des Sciences Médicales de Bordeaux* M. E. Loumeau has reported the following case. A man, aged 46 years, who now lived a sober, regular life, and whose previous illnesses consisted of a transient attack of gonorrhœa at the age of 21 years and a mild attack of syphilis, which was well treated, at the age of 25 years, noticed with surprise on Feb. 12th, 1910, that the first urine passed in the morning had a slightly rosy tinge. This colour deepened progressively until the morning of the 17th, when the urine was distinctly bloody. During the day the hæmaturia became still more marked and large clots were passed, causing micturition to be more and more difficult and painful. In the afternoon M. Loumeau saw the patient in consultation. He was pale and uneasy, and was passing reddish-purple urine. A No. 18 bent (*béquille*) catheter was easily passed and much liquid and coagulated blood was evacuated from the bladder, which was then washed out with warm boric lotion until blood ceased to flow from the catheter. Rectal examination showed the presence of a doughy mass in the bladder. In consequence of the spontaneity and abundance of the hæmaturia, which was not preceded by any renal colic, the mass was thought to be a tumour. The intensity of the hæmorrhage rendered it impossible to verify the diagnosis with the cystoscope. About midnight the bladder became distended with clots which could not be passed. Catheterism was attempted by a practitioner, but he could not pass an obstacle deep in the urethra, and M. Loumeau was again summoned. He found the patient in great pain from the retention, and the bedclothes soaked by the uninterrupted flow of blood. A No. 20 bent cathether was passed, after momentary arrest due to slight urethral spasm, and the patient was relieved. The catheter was retained in the bladder. On the 18th the hæmaturia was unabated, and as it had proved intractable to medical treatment and threatened the patient's life M. Loumeau

decided to operate at once. He performed laparotomy under chloroform in Trendelenburg's position. A large opening was made in the bladder and much blood and blackish clots were removed, but no trace of a tumour or ulcer could be found. A citrine fluid was emitted by the ureters, which showed the integrity of the kidneys. The mucous membrane of the bladder was much congested in its whole extent, raised by large sinuous turgescent veins, and coated by an abundant serous transudation. Evidently the mass taken before operation for a tumour consisted of clots. The wound was sutured, drainage-tubes being inserted. For some days drainage was maintained. Recovery was uninterrupted and the hæmaturia ceased. What was the source of the hæmorrhage? For eight years the patient had noticed some difficulty in beginning micturition, and for some months micturition was frequent and painful in the morning. Though the hæmaturia ceased after the cystotomy the urine remained a little turbid, and during the night micturition was difficult and took place twice or thrice. Moreover, there was residual urine which varied in amount between 20 and 100 grammes. After complete emptying of the bladder with the catheter rectal examination showed two indurated nodules in the prostate of the size of an olive. Evidently the hæmaturia was the first sign of a slight and unsuspected hypertrophy of the prostate. It was presumably due to congestion developed around the nodules, which apparently were adenomata. The congestion extended to the whole of the vesical mucous membrane. M. Loumeau suggests that the prostatic hypertrophy was due to chronic prostatitis which was a sequel to the attack of gonorrhœa. The case also illustrates a fact which he has often observed—the onset of prostatic hypertrophy before the age of 50 years, the age given by writers. At this age difficulty in emptying the bladder may be first observed, but the hypertrophy of the prostate must have preceded this by some years.

ULSTER AND EMBASSIES TO CHINA.

THE freedom of the city of Belfast was recently conferred upon Sir John Jordan, K.C.B., His Majesty's present representative at Peking, and the ceremony was the occasion for the appearance of an interesting article in *The Northern Whig* of Sept. 28th from the pen of Sir John Byers dealing with the careers of three eminent Ulster men who were ambassadors to China. Sir John Byers is interested in all matters that belong to the history of Belfast and the province of which it is the capital, so that it was only natural that he should draw the attention of his fellow citizens to the predecessors of the distinguished man whom the city was honouring. Those predecessors were George Macartney, afterwards Earl Macartney; and Henry Pottinger, afterwards Sir Henry Pottinger. Macartney, who was sent out in 1792 as our first ambassador, was the great-grandson of "Black George Macartney," who went to Belfast from Scotland between 1642 and 1649. He became chief magistrate, or "Sovereign" as the title then was, and he should be held in honour by all medical men, for it was through his instrumentality that Belfast obtained a supply of "good and wholesome water"; for, as he mentioned in a proclamation dated July 29th, 1678, "the River which runneth through the Town is very much defiled and abused ..... whereby the water is made altogether unfit for the use of man in meat and drink." Even Belfast of to-day may remember these words with profit. His distinguished descendant's mission, though not successful in establishing a permanent resident at the court of Peking, yet brought about a prolonged period of tranquillity for commercial transactions. After his return he held other important posts, and died in 1806, leaving no heir. The name of Macartney, however, still has an honourable connexion with China in the person of Sir Halliday Macartney, who is councillor to the Chinese Legation in London, and, moreover, a medical man. Pottinger, who is the second on Sir John Byers's list, was appointed Envoy to China in 1840, and it was owing to his labours that the diplomatic victory was won which included the cession of Hong-Kong and the opening of the five treaty ports. As to Sir John Jordan, the present representative at Peking, his work is his best description, and well might Sir John Byers say of him that "he adds to the roll of the honorary burgesses of the city the name of one of the most distinguished Ulstermen of the present period."

THE SUPPLY OF DIPHTHERIA ANTITOXIN BY LOCAL AUTHORITIES.

IT is quite unnecessary to discuss the value of the antitoxin treatment of diphtheria. It has long passed the experimental stage, and those who neglected to use it in cases of diphtheria would lay themselves open to serious chances of scientific criticism. But, nevertheless, there are grounds for believing that antitoxin, for one reason or another, is not always administered as early as could be wished, and that it is not employed as a prophylactic in invaded houses with the routine regularity which preventive medicine demands. We have often, in reviewing the annual reports of medical officers of health, quoted comments indicating the frequency with which cases of diphtheria arrive at an isolation hospital without having already had the advantage of antitoxin inoculation, even although such cases had been ill for several days. Indeed, so frequent are these occurrences that in certain instances medical officers of health have themselves had antitoxin administered when notified cases of this disease have been visited by the health officers and proper treatment had not yet been applied. This delay in the administration of antitoxin is due partly to the want of facilities for prompt bacterioscopic examination and partly to difficulties in obtaining supplies. It may also be due in some measure to the question of expense. These facts have been so obvious to many sanitary authorities that they have themselves obtained a supply of the antitoxin for the use of local medical practitioners upon patients whose means were small, and within recent years large quantities of diphtheria antitoxin have been thus employed. It appears, however, that there have been legal difficulties in the way of this municipal provision of antitoxin, more especially so in its employment from a curative standpoint, and with a view of placing the matter on a satisfactory basis, both curatively and prophylactically, the Local Government Board has recently issued an Order authorising the provision of antitoxin in both these senses. In the circular letter which accompanied this Order the Board drew attention to the fact that the free provision of diphtheria antitoxin was in no sense to be regarded as a substitute for isolation in hospital, and that the prompt administration of antitoxin before the patient was removed might go far to prevent the attack from proving fatal. It is clear, we think, that the vast majority of local authorities throughout the country will welcome this provision for lessening the fatality rate and prevalence of this fatal malady, but Mr. F. W. Alexander, the medical officer of health of Poplar, draws attention in a recent report to an aspect of the question which should not pass unnoticed. In September, 1907, the sanitary committee of this metropolitan borough presented a report to the council emphasising the enormous advantages of antitoxin treatment as shown by figures derived from the Metropolitan Asylums Board and other statistics. The committee also expressed the opinion that in view of the loss, inconvenience, and suffering occasioned by the erroneous notification and removal of

patients not suffering from the disease notified, diphtheria antitoxin should be supplied for use pending the report of the bacteriological examination in cases where such provision cannot be otherwise made. But the council, after consideration of the report, arrived at the conclusion that it could "not enter into competition on an unfair basis with purveyors of drugs and related preparations," and it emphatically refused "to relieve medical practitioners of their natural responsibilities." This expression of opinion raises incidentally some rather far-reaching issues—so far-reaching that we can only briefly indicate them here. It may suggest, for instance, that the arrangements for medical treatment amongst the poor are so unsatisfactory that drugs and kindred preparations cannot, for the payment available, always be administered; and it might, of course, be contended that all sera and cultures not easily obtainable should be provided for the poorer classes by the sanitary authorities. It may reasonably be urged that such municipal action would only be justifiable in dealing with preventable disease; but here, again, we feel ourselves on the horns of a dilemma, since nearly all diseases may be regarded as more or less preventable. For example, in the case of acute rheumatism the early administration of the specific drugs in proper amount may prevent the dreaded complications, and a similar line of argument may be employed as regards venereal diseases. Probably the answer to these problems may be found when the subject of the relation of the State to the medical profession, which is now in the melting-pot, is receiving final consideration, but in the meantime the poorer classes must have antitoxin in their need, and at the present moment the only feasible method of securing its prompt administration appears to be through the agency of the sanitary authorities.

THE MEMORIAL TO THE LATE MISS FLORENCE NIGHTINGALE AT LIVERPOOL: A REGRETTABLE DIVISION OF OPINION.

THE public meeting held in the Liverpool Town-hall on Oct. 13th, at the invitation of the Lord Mayor, to inaugurate a memorial to perpetuate the memory of the late Miss Florence Nightingale disclosed considerable differences of opinion as to the form the memorial should take. Hitherto it had been the custom at such a meeting solely to decide upon the establishment of a memorial fund in honour of a distinguished person, the direction which the memorial should assume being delegated to a committee of the citizens present. On this occasion a departure from custom was witnessed. The committee of the Queen Victoria District Nursing Association, which body desires to build an additional district nurses' home (stated to be urgently needed), approached the Lord Mayor with a scheme, asking that the memorial should take the form of a seventh district nurses' home, the funds to be applied to its erection and maintenance. No one would deny that what the association seeks to do is very proper and useful, but the claims of nurses in need of pecuniary assistance to the benefits of a memorial fund to their dead leader began to receive attention prior to the date of the town-hall meeting. Letters appeared in the columns of the local press pointing out the needs of many nurses of advancing years, and warmly advocating that the funds of the proposed memorial should be applied in the direction of their necessities. In the face of this correspondence it would have been perhaps well if the Lord Mayor had fallen back upon precedents and had accepted the suggestion of Mr. J. E. Sampson, the city coroner, to refer the details of the memorial fund to a committee of those present at the meeting. This, however, he decided not to do, but put to the general meeting a proposal of the Rev. T. W. M. Lund for the establishment of a memorial fund to be applied in the direction of a "home of rest" or a pension fund for necessitous nurses. This proposal was lost by the bare margin of 2 votes, Sir James Barr and others warmly taking up the cudgels on behalf of the poor nurses. A majority of 2 votes, therefore, stands in favour of the scheme to which Mr. Lund's was an amendment—viz, of founding a seventh district nurses' home. This vote cannot be a matter of congratulation to the committee of the Queen Victoria District Nursing Association, and there is a widely expressed fear that a chilling effect may result on the liberality of the citizens of Liverpool. May there not be yet time to reconsider the position and to allow the needs of the nurses at least to be met by a share in the benefits of the Florence Nightingale Memorial?

SYPHILIS AND MUSCULAR ATROPHY.

OUR nosological conception of that commonest of spinal cord diseases, tabes dorsalis, has been undergoing important changes in recent years. The discovery of the organism of syphilis has sensibly modified our ideas on the whole question of syphilitic infection. If we trace the steps whereby the syphilitic virus establishes its hold on the medullary nervous system, they are found to be constituted somewhat as follows. In a great number of cases secondary syphilis is accompanied by a mononuclear lymphocytosis of the cerebro-spinal fluid—the clinical expression of which is headache—a meningeal reaction on which mercury exerts a suppressing influence. The histological processes in this meningeal reaction of secondary syphilis have been carefully studied by Sezary. He has found subarachnoid infiltrations more particularly on the posterior aspect of the cord and in the lumbar region, vascular lesions, and interstitial changes in the posterior roots and posterior root ganglia. We know that this meningeal condition may be entirely unsuspected, to be discovered only by rachicentesis, or that its sole clinical manifestation, according to Babinski and Charpentier, may be the sign of Argyll Robertson. Should the syphilitic toxin maintain its hold the development of syphilitic meningo-myelitis is most likely to occur. Some of its varieties present a considerable resemblance to tabes; many instances of "pseudo-tabes syphilitica" have been recorded; rarely, symptoms both of tabes and syphilitic meningo-myelitis may occur together. The distance in time which often elapses between the syphilitic infection and the appearance of tabetic symptoms can no longer be justifiably advanced as a criterion to distinguish tabes from other forms of medullary syphilis, nor, indeed, can the difference in the response of the two types to antispecific treatment be so considered. Fournier's "parasyphilis" is losing somewhat of its significance. Syphilis in its attack on the nervous system may reveal itself in most diverse ways, from acute meningitis to general paralysis. We have reached a period when the neurologist is thinking less of systematised diseases and more of clinical syndromes. These considerations apply forcibly to the question of muscular atrophy of spinal origin, as is clearly demonstrated by M. Felix Rose and M. Henri Rendu in *La Semaine Médicale* of May 11th. The Aran-Duchenne type of amyotrophy is not a disease, that is, not a nosological entity, but a clinical syndrome. It may arise in the course of tabes dorsalis, and it may develop by itself where the sole preceding etiological factor is syphilis. In fact, Léri, struck with the frequency with which syphilitic antecedents are noted in the various cases of progressive muscular atrophy of this type scattered through medical literature, goes so far as to say that the commonest cause of the syndrome is syphilitic meningo-myelitis. Pathological evidence is not wanting to confirm this view of many cases of spinal amyotrophy. The occurrence of chronic anterior poliomyelitis of syphilitic

origin is a fact not perhaps sufficiently realised. Tabetic muscular atrophy (that is, of the Aran-Duchenne type) is indistinguishable from that of medullary syphilis. Further, muscular atrophy may appear in the course of general paralysis. The why and the wherefore of the variability in the nervous sequelæ of syphilis is still quite unknown; why tabes should appear in one case and meningo-myelitis in another, why muscular atrophy should sometimes be present, sometimes absent, are problems for the future to decide. The view the authors take is that certain syphilitic lesions, notably meningo-myelitis, alter in the course of their evolution; they lose their specific characteristics and tend to give place to chronic lesions, which in their turn produce definite cord changes, by relative ischæmia or otherwise, such as atrophy of anterior horn motor cells.

A CASE OF LEPROSY TRACEABLE TO INOCULATION.

IN the *South African Medical Record* of Sept. 10th appears an interesting note by Dr. W. Russell. A healthy boy of 14, the son of a Dutch farmer and an Englishwoman, cut his foot with broken glass while bathing. The wound bled freely, and a native suggested the application of tobacco as a styptic, offering a piece which he was chewing at the time. This was bandaged to the wound with a handkerchief and kept on in this way for three days, when the wound seemed to have healed almost completely. During the boy's life at a boarding school the wound kept on breaking out every two or three months for about three years, so that a medical man who saw him, suspecting necrosis of bone, made an incision and scraped the wound. About this time nasal and pharyngeal symptoms appeared and he become hoarse; a rash developed, and the boy became so unwell that his studies were discontinued. He was troubled by fainting attacks and shooting pains in the limbs. After nine months' treatment for syphilis, a diagnosis in which several practitioners concurred, he was taken to Dr. Russell, who found him well nourished, speaking with a husky voice, but showing no pharyngeal ulceration, though the mucous membrane was very congested, and there was a nasal discharge. The wound had healed, no rash was seen, but his hair was coming out. Under further treatment for syphilis he became worse, and Dr. Russell found bacillus lepræ in the nasal secretion. During the following six months the facies of leprosy developed, the hair continued to come out, anæsthetic patches appeared on the body, and an ulcer formed on the right foot, with painful fissures between the toes. He died about 11 years after the inoculation, which was attributed to the tobacco dressing, inquiry showing that the native from whose mouth the plug came was a leper, who had died about four years after his act of mistaken kindness. Moreover, there was no other conceivable source of infection.

THE OILS, FATS, AND WAXES OF THE PHARMACOPŒIA.

MUCH progress has been made since the publication of the 1898 edition of the British Pharmacopœia in the analytical examination of the official oils, fats, and waxes, and the data which have been collected will be of considerable value to the compilers of the next edition. An evening meeting of the Pharmaceutical Society on Oct. 11th was devoted to the consideration of this subject, and Mr. F. C. J. Bird and Mr. E. W. Lucas read communications in which they suggested a basis for the monographs on oils, fats, and waxes for the next Pharmacopœia. They expressed the opinion that the tests in the official monographs should be as comprehensive as possible, since much trouble has been caused in the past owing to the insufficiency of the official tests as a means of ensuring that degree of purity necessary in articles required for medicinal use. They suggest the introduction of methods which, although long practised by analytical chemists, have as yet found no place in the British Pharmacopœia in connexion with the fixed oils and fats. The new analytical figures which these observers think it desirable to introduce are the saponification value, the iodine value, the percentage of free acid, the percentage of unsaponifiable matter, and the refractive index. Mr. Bird and Mr. Lucas, who were requested by the Committee of Reference in Pharmacy to the Pharmacopœia Committee of the General Medical Council, of which they are members, to investigate this subject, submit the suggestions for professional criticism. It may be added that they take the view that the tests of the Pharmacopœia should be so framed that when applied in conjunction with the definition in the context they should make it perfectly certain that the article under examination is of the quality and purity intended by the Pharmacopœia for use in medicine. They regard the Pharmacopœia as a means of ascertaining the suitability of the articles enumerated therein for use in the dispensing of prescriptions and the preparation of medicines, and it is from this standpoint alone that they have drafted the suggested monographs.

SCARES.

IT is difficult to understand why some of our newspapers are so eager to become the bearers of evil tidings to the public, and why they should hasten to announce the bad news before the facts have been properly verified. Last week many persons were startled to find in their morning paper a statement headed in large type "Cholera in London." On looking more closely into the matter we found that the basis for this assertion was the occurrence of a fatal case of gastro-enteritis in a London hospital, the existence of cholera, however, being subsequently disproved by bacterioscopic investigation. Nevertheless, a thrill of needless fear must have been experienced by many nervous people who have a dread of exotic infection. A couple of days later huge posters were issued by a daily paper announcing in large letters "Plague in the Thames." Upon inquiry we discovered that this alarming announcement related to a single ship-borne case of plague, landed from a Bombay steamer, safely isolated by the officers of the London port sanitary authority in its hospital at Denton, from which there could be little possibility of extension of the infection outside. Almost simultaneously another paragraph appeared with the disturbing intelligence of an "Outbreak of Spotted Fever." Upon investigation we found that the so-called outbreak comprised in this instance also only a single case. The use of the term "spotted" fever instead of cerebro-spinal fever is no doubt attended with more alarm, as any illness with an eruption is greatly dreaded. And the use of the term "spotted" may be wrong, since in the majority of cases, in this country at least, the patients attacked by cerebro-spinal fever exhibit no spots at all. It is a misuse of the power of the press to employ it in curdling the blood or making the flesh of nervous or ignorant people to creep. It is, we know, urged in defence that the press must "put the public on their guard." But there can be no excuse for announcing cholera in London when there is none. It cannot be said that if plague has arrived in the Thames the individual readers of the announcement can as a result take any practical steps by themselves to escape from the disease. Rather must they rely upon the sanitary authorities, local and central, to protect them from imported infections. To produce panic in the public mind is not the way, in our opinion, to prevent the spread of exotic disease; and the insertion in newspapers of

alarming headlines based upon very slender foundations seems to be both unnecessary and improper from the medical point of view.

SERO-THERAPEUTIC TREATMENT IN OPHTHALMIC AFFECTIONS.

AN article with the above heading appears in the October number of *La Clinique Ophtalmologique* from the pen of Dr. Alexandroff, who, as ophthalmic surgeon to the "Eugenie" Hospital of Ajaccio, has had large experience. He only gives the results of those cases in which he has followed out this method of treatment for a period sufficient to form definite conclusions in regard to its success or failure in infectious cases. Dr. Alexandroff has invariably employed the anti-diphtheritic serum of M. Roux and has always practised the simple hypodermic proceeding. He has never used more than four injections of 10 cubic centimetres each of the fluid as an injection. He has never seen any untoward accident from the use of the serum. In almost every case he has obtained favourable results, and in some cases the results have been phenomenal, as in the following instance. A lady, aged 42 years, whose state of general health was perfect, consulted Dr. Alexandroff with very alarming symptoms. She had been suffering from severe neuralgia arising from disease of a canine tooth, when after using human milk as a collyrium the eye on the same side became red and extremely painful. On examination it was found that there was a serpiginous ulcer with hypopyon. The healthy condition of the lacrymal passages, with the unusual position of the ulcer, which was seated at the upper border of the cornea near the limbus, led him to conclude that there had been an ulcer of dental origin which had become infected by the milk. The treatment adopted was removal of the root of the canine tooth and three cauterisations, in spite of which the ulcer continued to advance. The upper two-thirds of the cornea became opaque, and the hypopyon filled a large part of the anterior chamber; perforation seemed to be imminent, and a Saemisch's keratotomy was proposed, but was strongly objected to by the patient. Under these conditions, although up to that time sceptical, Dr. Alexandroff bethought himself of treatment by serotherapy, and requested his colleague Dr. Pompeani to make an injection of 10 cubic centimetres. The next day the patient failed to present herself, and Dr. Alexandroff supposed that the eye was lost, and was agreeably surprised when on the day following she appeared in good spirits, stating that she had slept well for the first time for 12 nights. Upon examining the eye the hypopyon was in great part absorbed, the cornea was clearing, and the ulcer presented a more wholesome aspect. After two more injections recovery was complete. Several other cases are reported by Dr. Alexandroff: one of a child with infective conjunctivitis, one of a patient suffering from ague, one of keratitis after an operation for cataract, and one of an ulcer of the cornea after a blow with a stone, in all of which a satisfactory result was obtained.

WE hear with regret that the death of Dr. Sydney Ringer has taken place at his country residence at Lastingham, Yorkshire. Dr. Ringer, who was 76 years of age, was a Fellow of the Royal Society, Emeritus Professor of Medicine at University College and consulting physician to the hospital, and the author of the well-known "Handbook of Therapeutics."

ACCORDING to statistics contained in the last report of the Commissioners of Customs and Excise, the net receipts from the Medicine Stamp Duty during the years 1901–10 were as follow: 1901, £297,480; 1902, £306,337; 1903, £333,371; 1904, £323,446; 1905, £331,439; 1906, £324,112; 1907, £327,106; 1908, £334,142; 1909, £315,489; 1910, £313,114.

THE opening lecture of the North-East London Post-graduate College will be delivered at the Prince of Wales's General Hospital, Tottenham, N., on Thursday, Oct. 27th, at 4.30 P.M., by Sir T. Lauder Brunton. Any member of the profession desiring to attend the lecture is asked to communicate his wish to the Dean of the school at the hospital.

THE Page May Memorial Lectures in Physiology will be delivered by Professor C. S. Sherrington at University College, London, on Oct. 24th and 25th, Nov. 7th and 8th, and Nov. 28th and 29th, at 4.30 P.M.

TOWN-PLANNING CONFERENCE AND EXHIBITION.

WHATEVER may be thought of the debates at the Town-Planning Conference or of the exhibtion of drawings and models held at the Royal Academy from Oct. 10th to 22nd, the mere fact that such a conference and exhibition have taken place is a most hopeful sign of the times. It does seem as if we were awakening as a nation from lethargy, but it is sad, particularly at the exhibition, to find that even in our own country nearly all the wall space was covered with maps and drawings of what had been done by other nations. Yet that we should have had the courage to expose ourselves to such unflattering comparisons is surely a wholesome indication of a vigorous desire to set our own house in order. The position was very clearly put by the President of the Local Government Board at the opening of the Conference. Every 15 years, he said, some 500,000 acres of agricultural land were converted into building land. But as all this building is left to mere chance the municipal corporations, at their last annual gathering, estimated that during the recent 30 years from £14,000,000 to £15,000,000 had been spent in undoing mistakes that should never have been committed. For instance, as Mr. Raymond Unwin subsequently pointed out, it may generally be noted that in and near towns the land on either side of railway lines or canals is covered with cottages and dwellings. Obviously these are the sites that should be occupied by factories and workshops, thus reducing the traffic of merchandise through residential streets. But in building towns no one had given a thought to the needs of traffic and its probable developments. Even to-day 5000 houses are being built or rebuilt in London during the course of a year with very little regard to the present and future requirements of traffic. In this respect one of the few things shown by English exhibitors is a bold scheme for removing Charing Cross Station to the Surrey side. A monumental approach would be made by bridging the Thames with a broad roadway protected on each side by a graceful colonnade where people could shop in rainy weather on the model of the rue de Rivoli in Paris. But if, in Paris, this is convenient for the purchaser, the shops are insufficiently lighted by the direct rays of sunlight and have even less air and light at the back. On the proposed bridge the shops at the back would have a splendid look-out over the Thames, and would be much more healthy than the shops, for instance, in the Strand.

Even the most enthusiastic advocates of town planning have not yet fully appreciated the question of direct rays of sunlight. Obviously, in a rainy climate, the street colonnade like that of the rue de Rivoli, reproduced in London in front of the Hotel Ritz, is most convenient, and it lends itself to handsome architectural designs. But, from the health point of view, it cannot be approved unless there is ample compensation of unimpeded rays of light in the rear of the premises, and such would be the case on a bridge. In this respect we are glad to see M. A. Augustin Rey is again to the forefront as an apostle of light. He shows astronomical observations affecting ten of the largest towns, including London, with a total population of 25,000,000, all in temperate climates and with houses of from two to six storeys high. His obvious teaching is that we have

not only to reckon with the width of the street: houses that have their axis directed from north to south will receive the greatest number of luminous rays on their east and west walls, and will be more healthy than those in streets running west to east. The latter streets must, he suggests, be much wider. This question of the width of streets being modified according to the direction in which they run, so that the houses may receive an equal share of sunshine, is not yet included in town-planning schemes, and it deserves very careful consideration.

Town planning, however, is not simply a question of light and air, space, and drainage. Sanitary engineering plays a very important part, but even from the public health point of view art is most essential. We demand the city beautiful not merely because a thing of beauty is a joy for ever, but because joy is essentially a wholesome feeling. Beauty is preventive and curative medicine. It helps to make us happy and therefore to keep us in good health, while if, unfortunately, sickness has successfully invaded our system, we are much more likely to find the necessary vitality to recover in the contemplation of things that are graceful, pleasing, and inspiring than in the contemplation of drab ugliness. Thus, from whatever aspect the question may be viewed, we must congratulate ourselves on the successful gathering of the Town-Planning Conference. We wish that at the exhibition there had been more ample explanations given and better measures taken to interest the general public. It is the general public that will have to pay for town improvements, and, unless it understands, it is apt not merely to grumble but to vote against the promotion of much-needed reforms. Professor G. H. Reilly said that for the former "benevolent despotism of the great landlords ..... we must substitute an organised democracy." That being so, no opportunity should be lost of educating that democracy.

We have made no attempt to review the various utterances of many distinguished persons upon the different subjects that come under the heading of town-planning, but the movement is so essentially one bound up in the closest way with the public health that a brief record of its progress is necessary.

FORTY-SIXTH ANNUAL REPORT OF THE REGISTRAR-GENERAL FOR IRELAND.

THIS report contains a detailed account of the causes of death, as well as of the births and marriages registered in Ireland during the year 1909. In the present instance the Lord Lieutenant has reverted to the custom, temporarily, and perhaps unavoidably, suspended on the occasion of the appointment of the late Dr. Grimshaw's successor—namely, that of selecting for the important office of Registrar-General a member of the medical profession, Sir William J. Thompson, who is a distinguished graduate of Trinity College and a physician-in-ordinary to the Lord Lieutenant of Ireland.

In noticing the appearance of the annual report for 1908 we congratulated Sir Robert Matheson on his promptitude in issuing that useful volume in time to be available for preventive purposes. We have now the pleasure of repeating to Sir William J. Thompson our congratulations; for his report, like that of his predecessor, has been published within little more than six months of the close of the period to which it relates. And we must reiterate the hope expressed in previous numbers of THE LANCET that equal promptitude may shortly be attained in the issue of similar information for other divisions of the kingdom. The assistance rendered by Dr. Ninian M. Falkiner in preparing the statistical portion of their reports has been gracefully acknowledged both by Sir William J. Thompson and by his predecessor. For several years past Dr. Falkiner has bestowed much labour on the analysis of Irish mortality and on the study of its causes, and he merits the praise accorded to him by each of his official superiors.

Vital Statistics.

According to the best available estimate, the population of the sister isle would seem to be decreasing. There is no official record concerning immigration, but the loss by emigration is put down at 28,676, whilst the natural increase of the population by excess of births over deaths did not exceed 27,786. There would therefore appear to have been a decrease of 890 in the population at the end of 1909. Compared with the decennial averages, the rates both of marriages and of births show a slight increase in the year referred to, but the rate of mortality has fallen by 0·6 per 1000 as compared with the same average. In the year 1909 the general death-rate in Ireland was equal to 17·2 per 1000 of the population, which was estimated at 4,371,570 at the middle of that year. As was also the case in England, the death-rates were highest in the more distinctly urban, and lowest in the rural, areas of Ireland. For example, whilst the rates did not exceed 13 1 per 1000 living in County Kerry and 13·5 in County Clare, they rose to 18·2 in Belfast, 18·9 in Armagh, and 23·4 in Dublin. Of the total deaths registered last year, 4·5 per cent. occurred in infirmaries or hospitals unconnected with the Poor-law, and 13·8 per cent. in workhouses or workhouse hospitals.

For several past years a prominent feature in Irish mortality has been the relative lowness of the rate among the younger portion of the community, the death-rate under the age of five years being only 33·16 in each 1000 living at that age. Corresponding data for 1909 in England and Wales are not yet available for comparison, but the average English rate at the same age in the ten years 1899–1908 was 48·9 per 1000.

In the present report the usual interesting table is repeated showing the occupation or social position of the persons whose deaths were reported in Dublin; it also shows the mortality at each of six periods of life, and the number of deaths from specified causes. From this table we gather that among the families of the professional and independent classes the annual death-rate from all causes was 16·5 per 1000 persons living in that class; among the middle-class (consisting of civil servants, clerks, commercial assistants, &c.) the rate was also 16·5; among the artisan class and petty shopkeepers the rate was 16·8; whilst among the general service class (including the army, police, domestic servants, coach and car drivers, and others above the rank of paupers) the rate was 23·0 per 1000 living.

Uncertified Deaths.—Ill-defined causes of Death.

Commenting on the subject of ill-defined and uncertified causes of death, the Registrar-General very properly appeals to the medical profession in Ireland for greater care in filling up their certificates of death. It is the desire, he urges, of all medical statisticians and advocates of sanitary improvement that the diseases and conditions causing death should be definitely and accurately recorded and legally certified for entry in the General Register Office. The high percentage of uncertified deaths is an undesirable feature of Irish vital statistics, and compares unfavourably with the figures for England and Scotland. In Ireland the proportion of uncertified to total deaths still stands at 25 per cent., whilst the percentages in England and Scotland are only 1·4 and 2·3 respectively.

To this report are appended the usual tables of causes of death according to the English model in vogue since 1901. Among general diseases, those which call for especial notice are pneumonia and tuberculosis. From the various forms of pneumonia the loss of life last year was higher than in any other year since 1899, nearly 6 per cent. of the total mortality having been due to that disease. In the year under notice the death-rate from pneumonia was equal to 99 per 100,000 living, having increased from 64 per 100,000 since the year 1888. Of the deaths from lobar pneumonia only 17 per cent., whilst of those from broncho-pneumonia more than 60 per cent., occurred in persons below the age of 20 years.

Decrease of Mortality from Tuberculous Disease.

From tuberculosis in all its forms a still further decrease in mortality is recorded in 1909—the number of deaths in that year having been 10,594, or fewer by 699 than in 1908, a reduction of more than 6 per cent. The Registrar-General attributes this result very largely to the educational work of the Countess of Aberdeen, as carried on under her patronage by the Women's National Health Association. In the year under notice the deaths from pulmonary tuberculosis numbered 8051; they were fewer by 460 than the number registered in the previous year, and were below the annual average in the decennium ending with 1908 by not less than 1288. It is important to note that according to Irish experience the loss

of life from pulmonary tuberculosis is nearly equal in both sexes, whereas English experience shows the mortality to be at the present time enormously greater among males, although this has not always been the case. In Ireland the greatest fatality from this disease occurs in the age-period 25–35 years, the death-rate among men being 3·78 per 1000 living, and among women 3·29 per 1000. In England pulmonary tuberculosis is most fatal to the male sex at the age-group 45–55 years, and to the female sex at the age-group 35–45 years. A highly interesting table is inserted in this report showing the mortality from tuberculous phthisis among the several social classes in the Dublin registration area. The figures refer to the year 1909. From this table we learn that the rate per 1000 living, represented by deaths from tuberculous phthisis among the families of the professional and independent class was 0·29, among the families of the middle class the rate was 1·76, among the families of the artisan class and petty shopkeepers it was 2·19, and among the families of the general service class it was 2·31.

Infantile Mortality.

In respect of infantile mortality—i.e., the rate of death under one year per 1000 births—Ireland compares favourably with the other divisions of the United Kingdom. The rate last year was 92 per 1000 in Ireland, whilst it was 109 in England and 121 in Scotland. Infantile mortality varies considerably in the urban as compared with the rural parts of Ireland, for whilst it amounted to 123 per 1000 in the "civic areas"—i.e., the unions containing towns with populations of not less than 10,000—it did not exceed 71 per 1000 in the remainder of Ireland. If the mortality in the principal urban districts of Ireland be contrasted with that in the country districts the differences in infantile mortality will be found to be still more pronounced. Thus in the Kilkenny urban district the rate amounted to as much as 155 per 1000 births (which is higher than the Liverpool rate for the same period), whilst in the sparsely-populated district of Tralee the rate was only 70 in each 1000 registered births.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

A MEETING of the General Committee was held on Wednesday, Oct. 12th, in the library of the Royal College of Physicians of London. Sir Thomas Barlow occupied the chair. A brief note of the meeting has already appeared in our columns.

The minutes of the last meeting were read and confirmed. Letters of regret for absence were read from the following: Mr. C. A. Ballance, Dr. J. W. Ballantyne, Mr. Gilbert Barling, Sir John Byers, Dr. W. Collier, Sir J. Halliday Croom, Mr. Clinton Dent, Dr. Gordon Dill, Mr. Frederic S. Eve, Dr. Ferrier, Dr. J. Magee Finny, Dr. G. A. Gibson, Professor J. Glaister, Dr. Dundas Grant, Mr. J. W. B. Hodsdon, Dr. W. Allan Jamieson, Mr. J. C. Keston, Sir Donald MacAlister, Professor Howard Marsh, Dr. J. Marnoch, Dr. Alexander Miles, Sir George Hare Philipson, Professor R. W. Reid, Dr. Lloyd Roberts, Mr. A. W. Mayo Robson, Professor Saundby, Sir James Sawyer, Mr. W. G. Spencer, Professor W. Stirling, Mr. John Lynn Thomas, Sir W. J. Thompson, Professor Arthur Thomson, and Dr. Wethered.

On the report of the Advisory Board, which was appointed on Feb. 7th last,[1] it was moved by Dr. PAVY, and seconded by Dr. NORMAN MOORE, that Sir Thomas Barlow be asked to become President of the next International Medical Congress. This was carried unanimously, and Sir Thomas Barlow accepted the position.

Mr. BUTLIN proposed the next resolution of the Advisory Board, viz.:—

That there be two treasurers of the Congress, of whom one should be a layman of high financial position and the other an eminent medical man.

He said that he felt considerable doubt as to the advisability of appointing a lay treasurer.

Dr. PASTEUR seconded the resolution for purposes of discussion.

Dr. NORMAN MOORE spoke against the appointment of a lay treasurer, although quite willing to invite men of science who were not medical men to take part in the work of the Congress.

Sir MALCOLM MORRIS said that the Advisory Board had had in mind the desirability of inviting laymen to bear some part of the expense of the Congress. There was no doubt that international congresses were of enormous benefit to the public of the countries where they were held, and in other countries were generally supported by public money.

Dr. KNOWSLEY SIBLEY proposed that there should be two treasurers to the Congress, and that they should both be medical men.

Dr. SAMUEL WEST seconded the amendment, which was carried.

Mr. BUTLIN then proposed that one of the treasurers be Mr. G. H. Makins, and in doing so alluded to the work performed by Mr. Makins at the previous international congress held in London.

Dr. PAVY seconded this proposal, which was unanimously carried, and it was agreed to leave the appointment of the second treasurer to the Executive Committee.

Sir RICHARD DOUGLAS POWELL proposed, Dr. HALE WHITE seconded, and it was carried, that Dr. W. P. Herringham be elected honorary general secretary of the Congress.

Dr. HERRINGHAM said that he could not accept that position without publicly expressing his great indebtedness to Mr. D'Arcy Power, who had hitherto been secretary of the National and General Committees, for his extreme courtesy and patience in explaining the details and mechanism of the work. He hoped that Mr. Power, who, he supposed, would be promoted to the Executive Committee, would continue to afford him similar assistance.

Dr. PAVY wished to add his testimony to the great amount of labour which Mr. D'Arcy Power had already for many years given to the work of the committee.

Sir HENRY MORRIS proposed—

That an Organising Committee be formed which shall select a smal Executive Committee and shall have power to add to its number.

Dr. NORMAN MOORE seconded.

The following gentlemen were appointed on the Organising Committee:—Dr. T. D. Acland, Sir Clifford Allbutt, Sir W. Allchin, Sir Charles Ball, Mr. C. A. Ballance, Dr. Freeland Barbour, Professor H. G. Barling, Sir James Barr, Dr. A. G. Barrs, Sir Wm. Bennett, Mr. G. A. Berry, Mr. L. A. Bidwell, Mr. A. A. Bowlby, Mr. Stanley Boyd, Dr. J. Rose Bradford, Dr. Byrom Bramwell, Surgeon-General A. M. Branfoot, Sir James Crichton-Browne, Dr. Alexander Bruce, Dr. Mitchell Bruce, Sir Lauder Brunton, Mr. Butlin, Dr. Dudley Buxton, Sir John Byers, Sir H. Cameron, Sir Francis Champneys, Sir Havelock Charles, Sir Watson Cheyne, Sir William Church, Mr. Andrew Clark, Professor Michell Clarke, Dr. T. C. Clouston, Professor James Craig, Dr. P. J. Cremen, Sir Anderson Critchett, Sir Halliday Croom, Dr. H. Davy, Mr. Clinton Dent, Dr. Gordon Dill, Sir Dyce Duckworth, Professor William Dyson, Mr. F. S. Eve, Mr. Harry Fenwick, Dr. Ferrier, Professor D. W. Finlay, Dr. Magee Finny, Dr. J. Kingston Fowler, Sir Thomas Fraser, Professor S. Gemmell, Dr. G. A. Gibson, Professor T. R. Glynn, Mr. R. J. Godlee, Dr. Edwin Goodall, Mr. A. Pearce Gould, Dr. W. S. A. Griffith, Director-General W. L. Gubbins, Dr. F. W. Hewitt, Dr. G. E. Herman, Mr. J. W. B. Hodsdon, Sir Victor Horsley, the President of the Royal College of Physicians of Ireland, Dr. W. A. Jamieson, Dr. Macnaughton Jones, Dr. Robert Jones, Sir Alfred Keogh, Dr. Percy Kidd, Sir Francis Laking, Mr. Ernest Lane, Dr. H. A. Latimer, Professor J. A. Lindsay, Professor James Little, Professor H. Littlejohn, Director-General C. P. Lukis, Sir Donald MacAlister, Sir William Macewen, Professor Dixon Mann, Sir Patrick Manson, Professor Howard Marsh, Dr. C. J. Martin, Dr. Charles Mercier, Dr. Alexander Miles, Sir J. W. Moore, Dr. Norman Moore, Sir Henry Morris, Sir Malcolm Morris, Dr. F. W. Mott, Mr. B. G. A. Moynihan, Professor R. Muir, Sir Shirley Murphy, Sir T. Myles, Professor J. Musgrove, Dr. A. Newsholme, Sir Christopher Nixon, Sir Thomas Oliver, Professor W. Osler, Sir Isambard Owen, Dr. R. W. Philip, Sir George Hare Philipson, Dr. F. W. Pavy, Inspector-General Sir James Porter, Sir Richard Douglas Powell, Mr. D'Arcy Power, Sir W. H. Power, Mr. J. H. Pringle, Professor J. P. Pye, Professor R. J. Pye-Smith, Dr. Guthrie Rankin, Sir James Reid, Dr. C. J. Renshaw, Mr. J. Scott Riddell, Mr. A. W.

[1] THE LANCET, Feb. 12th, 1910, p. 458.

Mayo Robson, Dr. H. D. Rolleston, Professor Ronald Ross, Dr. Amand Routh, Dr. W. Russell, Dr. F. M. Sandwith, Professor R. Saundby, Dr. G. H. Savage, Professor E. A. Schäfer, Dr. S. J. Sharkey, Professor T. Sinclair, Dr. Percy Smith, Dr. Walter Smith, Sir Wm. Smyly, Dr. Herbert Spencer. Dr. Squire Sprigge, Dr. J. E. Squire, Professor A. M. Stalker, Professor E. H. Starling, Mr. H. J. Stiles, Professor J. Swain, Sir Henry Swanzy, Mr. Charters Symonds, Dr. F. Taylor, Professor G. D. Thane, Professor Alexis Thomson, Professor Arthur Thomson, Professor W. Thorburn, Sir Frederick Treves, Dr. Logan Turner, Sir John Tweedy, Dr. J. C. Uhthoff, Dr. C. T Vachell, Dr. Norman Walker, Mr. David Wallace, Dr. W. Hale White, Dr. B. A. Whitelegge, Sir W. Whitla, Dr. Dawson Williams, Sir John Williams, and President Bertram Windle.

Sir DYCE DUCKWORTH then proposed :—

That it is advisable that distinguished laymen be invited to become members of the Congress.

This was seconded by Sir MALCOLM MORRIS.

After some discussion, in which Sir ANDERSON CRITCHETT, Dr. PASTEUR, Mr. MAKINS, Dr. SQUIRE, Mr. PEARCE GOULD, Mr. ARMIT, and Dr. BASHFORD joined, it was resolved :—

That it is advisable that distinguished laymen be invited to associate themselves with the work of the Congress, and that such invitations be in the hands of the Executive Committee.

The date of the Congress led to considerable discussion. The date proposed by the Advisory Board was from July 29th to August 6th, 1913, and a resolution to this effect was formally moved by Mr. MAKINS. He said, however, that the choice of a date was extremely difficult for several reasons, and that he hoped the General Committee would carefully consider the matter before coming to any resolution. On the one hand, the Congress could not be earlier than the date proposed, as our German colleagues could not attend if it were, and, indeed, the date proposed was earlier than that which Dr. Pavy, after conference with the German representatives, had originally proposed in the Advisory Committee; secondly, Bank Holiday came in the middle of the proposed meeting, which might possibly lead to considerable inconvenience; and a third difficulty was that the proposed date clashed with the meeting of the British Medical Association. He therefore moved the resolution rather to open the subject for discussion than to support strongly the date originally fixed.

Dr. NORMAN MOORE seconded the proposal.

Mr. BUTLIN said that he had been present when the date had been fixed by the Advisory Committee, and had himself not realised that the British Medical Association made it so regular a custom to meet at that date as he had since found was the case. He thought it would be a pity if some arrangement could not be come to with the Association.

Sir MALCOLM MORRIS pointed out that if, as was customary, royal patronage was sought for the Congress, the date of the meeting could not be settled without consulting the wishes of royalty.

Several speakers emphasised the extreme undesirability of creating ill-will in a matter of this kind and said that it was of the utmost importance that the spirit in which the Congress was to be got up should not be impaired by any feeling of hostility.

It was officially resolved, on the motion of Sir HENRY MORRIS, that this matter be not decided that day, but that it be left in the hands of the President and of the executive officers to settle the date, and that they be at liberty to receive any communications from, or to confer with, the officers of the British Medical Association.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 7420 births and 4260 deaths were registered during the week ending Oct. 15th. The annual rate of mortality in these towns, which had been equal to 13·3 and 12·8 per 1000 in the two preceding weeks, rose again last week to 13·1. During the last summer quarter the death-rate in these towns averaged 11·8 per 1000, corresponding with the rate that prevailed in the summer quarter of last year. In London the death-rate last quarter, calculated on the probably over-estimated population, did not exceed 11·0 per 1000. The lowest reported annual death-rates last week in these 77 towns were 5·0 in Handsworth, 6·7 in East Ham, 6·9 in Willesden, and 7·0 in Leyton and in Walthamstow; the rates in the other towns ranged upwards to 19·4 in Burnley, 19·5 in Middlesbrough, 20·3 in Oldham, and 23·5 in Warrington. In London the reported death-rate last week did not exceed 12·8 per 1000. The 4260 deaths from all causes registered in the 77 towns last week showed an increese of 97 upon the number returned in the previous week, and included 504 which were referred to the principal epidemic diseases, against numbers declining from 720 to 497 in the seven preceding weeks; of these 504 deaths, 296 resulted from diarrhœa, 51 from measles, 47 from whooping-cough, 43 from enteric fever, 34 from diphtheria, and 33 from scarlet fever, but not one from small-pox. The mean annual rate of mortality from these diseases in the 77 towns last week was 1·6 per 1000, against 2·0, 1·8, 1 6, and 1·5 in the four preceding weeks. No death from any of these epidemic diseases was registered last week in Leyton, Wolverhampton, Handsworth, Hastings, Dewsbury, and Burton-on-Trent; the annual death-rates therefrom ranged upwards, however, to 3 9 in Burnley, 4·3 in Oldham, 4·5 in Wigan, and 5·5 in Tynemouth. The deaths attributed to diarrhœa in the 77 towns, which had declined in the six preceding weeks from 527 to 311, further fell last week to 296; in the several towns, however, they caused annual rates ranging upwards to 2·5 in Oldham, 2·8 in Wigan, and 2·9 in Burnley. The 51 fatal cases of measles were within 2 of the number in the previous week, and showed the highest death-rates, 1·3 in Hartlepool and 1·8 in Tynemouth. The 47 deaths from whooping-cough also showed a slight decline, but caused rates equal to 1·6 in Rotherham and 1·8 in Tynemouth. The deaths referred to enteric fever, which had been 38 and 21 in the two previous weeks, rose to 43 last week, and exceeded the number in any previous week of this year; they included 20 in London and its suburban districts (of which 3 occurred in Tottenham), and 2 each in St. Helens, Bradford, and Hull. The 34 fatal cases of diphtheria showed a decline of 8 from the number in the previous week; 11 occurred in London and its suburban districts, 3 each in Birmingham, Liverpool, and Manchester, and 2 in Middlesbrough. The 33 deaths from scarlet fever showed a distinct increase upon recent weekly numbers; 5 were returned both in London and in Liverpool, 3 in Stoke-on-Trent, and 2 in Manchester and Newcastle-on-Tyne. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had increased in the eight preceding weeks from 1423 to 1706, had further risen to 1745 on Saturday last; 234 new cases of this disease were admitted to these hospitals during last week, against 249 and 245 in the two previous weeks. The 1200 deaths from all causes in London last week included 162 which were referred to pneumonia and other diseases of the respiratory system, showing a further slight decline from the numbers in recent weeks; they were also 16 below the corrected average number in the corresponding week of the five years 1905–09. The causes of 39, or 0·9 per cent., of the deaths registered in the 77 towns during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, Nottingham, and in 52 other smaller towns; the 39 uncertified causes of death in the 77 towns last week included 10 in Liverpool, 5 in Birmingham, 3 in South Shields and in Gateshead, and 2 each in Stoke-on-Trent, Leicester, Warrington, and Barrow-in-Furness.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 878 births and 468 deaths were registered during the week ending Oct. 15th. The annual rate of mortality in these towns, which had steadily increased in the four preceding weeks from 13·0 to 14·4 per 1000, declined again to 12·9 in the week under notice. During the past summer quarter the death-rate in these towns averaged 12·9 per 1000, and exceeded by 1·1 the mean rate during the same period in the 77 largest English towns. The annual death-rates in the eight Scotch towns last week ranged

from 9·8 and 10·6 in Aberdeen and Paisley to 14 9 in Greenock and 17·5 in Dundee. The 468 deaths from all causes in the eight towns last week showed a decline of 53 from the number in the previous week, and included 63 which were referred to the principal epidemic diseases, against 83 and 69 in the two preceding weeks; of these 63 deaths, 29 resulted from diarrhœa, 15 from diphtheria, 10 from whooping-cough, 4 from scarlet fever, 3 from measles, and 2 from "fever," but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the eight towns last week was equal to 1·7 per 1000, the rate from the same diseases in the 77 English towns being 1·6 per 1000. The deaths attributed to diarrhœa in the Scotch towns, which had been 51 and 40 in the two previous weeks, further declined last week to 29; they included 19 in Glasgow, 6 in Dundee, and 2 in Greenock. The 15 fatal cases of diphtheria showed a further slight increase upon recent weekly numbers; 9 occurred in Glasgow and 4 in Perth. The 10 deaths from whooping-cough also showed a further increase, including 4 in Glasgow and 3 in Dundee. Two fatal cases of scarlet fever were returned in Glasgow, and 2 of measles in Edinburgh. The 2 deaths referred to "fever" included 1 each in Glasgow and Edinburgh. The deaths referred to diseases of the respiratory system in the eight towns, which had been 61 and 72 in the two preceding weeks, declined again to 69 in the week under notice, but exceeded by 11 the number in the corresponding week of last year. The causes of 14, or 3·0 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 545 births and 374 deaths were registered during the week ending Oct. 15th. The mean annual rate of mortality in these towns which had been equal to 17·8 and 15·9 per 1000 in the two preceding weeks, rose again to 16·9 in the week under notice. During the summer quarter the annual death-rate in these Irish towns averaged 16 3 per 1000; the mean rate during the same period did not exceed 11·8 in the 77 largest English towns and 12·9 in the eight principal Scotch towns. The annual death-rate during last week was equal to 18·9 in Dublin (against 12·8 in London), 16·3 in Belfast, 14·4 in Cork and in Londonderry, 15·0 in Limerick, and 21·4 in Waterford; the mean annual death-rate last week in the 16 smallest of these Irish towns was equal to 15·8 per 1000. The 374 deaths from all causes in the 22 town districts last week showed an increase of 23 upon the number returned in the previous week, and included 31 which were referred to the principal epidemic diseases, a decline of 9 from the number in the previous week; these 31 deaths were equal to an annual rate of 1·4 per 1000, the rate from the same diseases last week in the 77 English towns being 1·6, and in the eight Scotch towns 1·7. The 31 deaths from these epidemic diseases in the Irish towns last week included 16 from diarrhœa, 5 from measles, 4 from whooping-cough, and 3 both from diphtheria and enteric fever, but not one from small-pox. The deaths attributed to diarrhœa, which had been 45, 43, and 28 in the three preceding weeks, further declined last week to 16, of which 9 occurred in Dublin, 3 in Belfast, and 2 in Waterford. The 5 fatal cases of measles included 3 in Belfast and 2 in Portadown. Two deaths from whooping-cough were returned in Dublin and 2 from diphtheria in Belfast. A death from enteric fever was recorded in Dublin, in Belfast, and in Cork. The deaths in the 22 towns last week included 66 which were referred to pneumonia and other diseases of the respiratory system, against 54 and 44 in the two previous weeks. The causes of 13, or 3·5 per cent., of the deaths registered last week in the Irish towns were not certified; in the 77 English towns the proportion of uncertified deaths last week did not exceed 0·9 per cent., while in the Scotch towns it was equal to 3·0 per cent.

VITAL STATISTICS OF LONDON DURING SEPTEMBER, 1910.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 5·3 per 1000 of the population, estimated at 4,872,702 persons in the middle of the year. In the three preceding months the rates were 4·0, 4·1, and 3·9 per 1000 respectively. The lowest rates last month were recorded in Chelsea, the City of Westminster, Hampstead, Stoke Newington, Camberwell, and Lewisham; and the highest rates in Finsbury, Shoreditch, Bethnal Green, Poplar, Southwark, Bermondsey, and Woolwich. Scarlet fever, which had shown a decreased prevalence in the previous month, was more prevalent in September than in any other month of the current year; among the several boroughs the greatest proportional prevalence of this disease was recorded in Poplar, Southwark, Bermondsey, Lambeth, and Woolwich. The Metropolitan Asylums Hospitals contained 1630 scarlet fever patients at the end of last month, against 1358, 1530, and 1439 at the end of the three preceding months; the weekly admissions averaged 207, against 180, 190, and 160 in the three preceding months. Diphtheria also was more prevalent last month than in any previous month of this year; this disease was proportionally most prevalent in Fulham, Holborn, Finsbury, Southwark, Bermondsey, and Greenwich. There were 746 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 673, 613, and 580 at the end of the three preceding months; the weekly admissions averaged 108, against 80, 85, and 76 in the three preceding months. Enteric fever was much more prevalent than in any other recent month; among the several metropolitan boroughs the greatest proportional prevalence of this disease was recorded in Islington, Stoke Newington, Holborn, Shoreditch, Bethnal Green, Stepney, Poplar, and Bermondsey. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 46, 45, and 58 at the end of the three preceding months, had risen to 141 at the end of last month; the weekly admissions averaged 32, against 8, 6, and 11 in the three preceding months. Erysipelas was proportionally most prevalent in the City of London, Finsbury, Bethnal Green, Stepney, Bermondsey, Battersea, and Deptford. The 28 cases of puerperal fever notified during the month included 3 in Fulham, 3 in Stepney, and 3 in Southwark, and 2 each in Paddington, St. Pancras, Poplar, Bermondsey, and Lambeth. Of the 11 cases notified as cerebro-spinal meningitis 3 belonged to St. Pancras, 2 to Hackney, and 2 to Bethnal Green.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates are further corrected for variations in the sex and age constitution of the populations. During the four weeks ending Oct. 1st the deaths of 4219 London residents were registered, equal to a corrected annual death-rate of 11·9 per 1000; in the three preceding months the rates were 10·6, 10·4, and 10·3 per 1000 respectively. The death-rates last month ranged from 8·0 in Hampstead, 8·5 in the City of Westminster and in Stoke Newington, 8·6 in Woolwich, 8·9 in St. Marylebone, and 9·1 in Lewisham, to 15·2 in Poplar, 15·8 in Holborn, 17·6 in Deptford, 18·4 in Shoreditch and in Bermondsey, and 19·2 in the City of London. The 4219 deaths from all causes included 550 which were referred to the principal infectious diseases; of these, 81 resulted from measles, 13 from scarlet fever, 34 from diphtheria, 48 from whooping-cough, 31 from enteric fever, 1 from ill-defined pyrexia, and 342 from diarrhœa, but not any from small-pox or from typhus fever. The lowest death-rates from these infectious diseases last month were recorded in Paddington, the City of Westminster, Hampstead, Stoke Newington, Wandsworth, and Woolwich; and the highest rates in Finsbury, Shoreditch, Poplar, Southwark, Bermondsey, and Deptford. The 81 fatal cases of measles were 39 in excess of the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Chelsea, St. Pancras, Finsbury, Shoreditch, Southwark, Bermondsey, and Lambeth. The 13 deaths from scarlet fever showed a decline of 22 from the corrected average number; of these 13 deaths, 2 belonged to Poplar, 2 to Bermondsey, and 2 to Lambeth. The 34 fatal cases of diphtheria were 17 fewer than the corrected average

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING SEPTEMBER, 1910.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1910.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.		
LONDON	4,872,702	—	395	472	—	233	2	28	344	11	1985	5·3	—	81	13	34	48	—	31	1	342	550	1·5	4219	11·9
West Districts.																									
Paddington	153,004	—	17	7	—	6	—	2	11	—	43	3·7	—	—	—	—	1	—	—	—	2	3	0·3	105	9·5
Kensington	184,635	—	35	16	—	6	2	—	14	—	73	5·2	—	2	—	3	3	—	1	—	12	21	1·5	144	11·0
Hammersmith	127,413	—	26	8	—	2	—	—	5	—	41	4·2	—	—	—	—	2	—	—	—	5	7	0·7	103	10·9
Fulham	181,282	—	36	30	—	1	—	3	6	1	77	5·5	—	1	—	1	5	—	—	—	14	21	1·5	130	9·7
Chelsea	75,457	—	6	8	—	1	—	1	—	—	16	2·8	—	3	—	—	2	—	—	—	4	9	1·6	61	10·9
City of Westminster	167,233	—	15	9	—	6	—	1	6	—	37	2·9	—	2	—	—	—	—	—	—	2	4	0·3	97	8·5
North Districts.																									
St. Marylebone	125,195	—	16	11	—	5	—	—	13	—	45	4·7	—	—	1	1	1	—	1	—	3	7	0·7	81	8·9
Hampstead	95,729	—	13	4	—	2	—	—	—	—	19	2·6	—	—	—	1	1	—	—	—	1	3	0·4	52	8·0
St. Pancras	237,792	—	43	24	—	6	—	2	14	3	92	5·0	—	13	1	4	3	—	1	—	9	31	1·7	224	12·9
Islington	353,356	—	58	47	—	23	—	—	17	1	146	5·4	—	8	1	2	3	—	3	—	15	32	1·2	293	11·2
Stoke Newington	54,838	—	4	4	—	4	—	—	1	—	13	3·1	—	—	—	—	2	—	—	—	—	2	0·5	34	8·5
Hackney	239,979	—	30	12	—	7	—	1	17	2	69	3·7	—	—	—	—	1	—	1	—	11	13	0·7	186	10·5
Central Districts.																									
Holborn	53,142	—	7	8	—	5	—	—	2	—	22	5·4	—	1	—	—	—	—	1	—	1	3	0·7	60	15·8
Finsbury	94,578	—	17	22	—	2	—	—	16	—	57	7·9	—	3	—	3	1	—	—	1	8	16	2·2	100	14·3
City of London	17,132	—	1	1	—	2	—	—	3	—	7	5·3	—	—	—	—	—	—	—	—	1	1	0·8	23	19·2
East Districts.																									
Shoreditch	114,387	—	24	13	—	13	—	1	12	1	64	7·3	—	4	—	—	1	—	2	—	23	30	3·4	154	18·4
Bethnal Green	131,579	—	19	12	—	48	—	1	18	2	100	9·9	—	3	—	—	1	—	5	—	11	20	2·0	138	13·8
Stepney	314,379	—	45	20	—	27	—	3	37	—	132	5·5	—	3	—	1	—	—	4	—	37	45	1·9	344	14·9
Poplar	172,432	—	41	19	—	14	—	2	16	—	92	7·0	—	1	2	1	3	—	4	—	30	41	3·1	194	15·2
South Districts.																									
Southwark	211,832	—	52	39	—	5	—	3	21	—	120	7·4	—	8	1	6	2	—	—	—	25	42	2·6	213	13·7
Bermondsey	127,238	—	36	19	—	10	—	2	14	—	81	8·3	—	10	2	1	6	—	1	—	24	44	4·5	176	18·4
Lambeth	327,074	—	101	30	—	9	—	2	15	—	157	6·3	—	10	2	3	2	—	1	—	26	44	1·8	291	12·0
Battersea	188,222	—	24	13	—	2	—	1	23	—	63	4·4	—	—	—	1	1	—	—	—	13	15	1·0	138	10·3
Wandsworth	305,838	—	52	20	—	4	—	—	17	—	93	4·0	—	2	1	—	2	—	2	—	8	15	0·6	209	9·4
Camberwell	286,058	—	46	17	—	7	—	—	8	—	78	3·6	—	3	1	3	1	—	1	—	14	23	1·0	229	10·8
Deptford	119,642	—	22	12	—	6	—	1	16	—	57	6·2	—	2	—	—	—	—	3	—	21	26	2·8	153	17·6
Greenwich	112,935	—	8	29	—	6	—	1	5	1	50	5·8	—	1	—	1	1	—	—	—	14	17	2·0	94	11·0
Lewisham	164,899	—	30	6	—	2	—	—	8	—	46	3·6	—	—	1	2	3	—	—	—	6	12	0·9	110	9·1
Woolwich	135,422	—	71	12	—	2	—	1	9	—	95	9·1	—	1	—	—	—	—	—	—	2	3	0·3	83	8·6
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

† The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

number, and included 6 in Southwark, 4 in St. Pancras, and 3 each in Kensington, Finsbury, Lambeth, and Camberwell. The 48 deaths from whooping-cough showed a decline of 22 from the corrected average number; this disease showed the greatest proportional fatality in Fulham, Chelsea, Stoke Newington, and Bermondsey. The 31 fatal cases of enteric fever were eight in excess of the corrected average number; of these 31 deaths, 5 occurred in Bethnal Green, 4 in Stepney, 4 in Poplar, 3 in Islington, 3 in Deptford, 2 in Shoreditch, and 2 in Wandsworth. The 342 deaths from diarrhœa were less than one-half of the corrected average number; this disease was proportionally most fatal in Shoreditch, Stepney, Poplar, Southwark, Bermondsey, Deptford, and Greenwich. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 40·6 per cent. below the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointment is notified:—Surgeon: C. D. Bell to the *Donegal*.

The undermentioned surgeons have been promoted to the rank of Staff Surgeon in His Majesty's Fleet:—William Bastian (dated August 2nd, 1908). Frank Elliott Bolton. Charles Joseph O'Connell (dated June 9th, 1910).

ROYAL ARMY MEDICAL CORPS.

The appointment of Surgeon-General J. G. MacNeece to be Principal Medical Officer of the Eighth (Lucknow) Division has been approved by His Majesty the King. Colonel T. J. R. Lucas has been transferred from Bangalore to Cherat. Colonel W. G. Macpherson, C.M.G., principal medical officer at Malta, has been appointed Principal Medical Officer of the Fourth (Quetta) Division, rendered vacant by the retirement of Colonel D. O'Sullivan. Lieutenant-Colonel J. J. Russell, from Limerick, has taken over the duties of Staff Officer to the Principal Medical Officer of the Southern Command. Lieutenant-Colonel T. W. O'H. Hamilton, C.M.G., staff officer to the principal medical officer of the Aldershot Command, has taken over medical charge of the military hospital at Warley from Major B W. Longhurst, transferred to the Western Command. Lieutenant-Colonel M. O'D. Braddell, from Lahore, has been posted for duty at Rawalpindi. Lieutenant-Colonel R. H. Hall has proceeded on two months' leave from Colchester prior to embarkation as Senior Medical Officer, Bermuda. Lieutenant-Colonel J. Maher has been selected for increased rate of pay under the provisions of Article 317 of the Royal Warrant for promotion. Major E. A. Burnside, from Golden Hill has joined for duty at Tidworth Park. Major J. McD. McCarthy has been transferred from Chester to Chapel Bay Camp. Major S. J. C. P. Perry has taken over duty at Dover from Brighton. Major C. J. Healy has been transferred from Tipperary to Fermoy. Major C. E. P. Fowler, sanitary officer, Gibraltar, has arrived home on leave. An exchange on the roster for service abroad has been approved by the War Office between Major G. T. Rawnsley and Major G. B. Carter, serving in the Dublin District. Major W. Hallaran has embarked for a tour of service in India. Major C. K. Morgan has been appointed Instructor at the Royal Army Medical Corps School of Instruction, Aldershot. Major F. J. W. Porter, D.S.O., late senior medical officer on the West Coast of Africa (Sierra Leone), has taken up duty in the London District as Recruiting Medical Officer. Major W. E Hudleston, from Gosport, has joined at Golden Hill. Captain H. R Bateman, member of the Sleeping Sickness Commission, has returned home from Uganda. Captain J. S. Pascoe has embarked from Alexandria in the *Soudan* for home. Captain J. W. West, at present serving at Queenstown, has been placed under orders to embark for India for duty in the Northern Command, embarking about Nov. 4th next. Captain A. O. B. Wroughton, from Canterbury, has joined for duty at the Military Hospital, Dover. Captain J. F. Whelan, on completion of his course for promotion at the Royal Army Medical College, London, has been posted to Manchester. Captain E. S. Worthington, specialist in advanced operative surgery, has embarked for South Africa in the *Balmoral Castle* as Medical Officer in Charge of H.R.H. the Duke of Connaught. Captain C. A. J. A. Balck has been appointed Specialist in Charge of Physical Efficiency at the Curragh. Captain N. E. J. Harding has joined at Chatham. Captain G. A. Kempthorne has been transferred from Dalhousie to Amritsar. Lieutenant F. Worthington, Haulbowline, has embarked for a tour of duty in Ceylon. Lieutenant F. H. Somers-Gardner, from Rowlands Castle, has been posted to Hilsea.

INDIAN MEDICAL SERVICE.

Colonel R. W. S. Lyons, principal medical officer of the Kohat Brigade, has been granted three months' leave. Lieutenant-Colonel J. C. S. Vaughan, superintendent of the Campbell Medical School and Hospital at Calcutta, has been appointed Civil Surgeon and posted to Bhagalpur. Lieutenant-Colonel J. G. Jordan, Officiating Civil Surgeon of Darbhanga, has been granted six months' leave home from India. Lieutenant-Colonel C. M. Thompson has been appointed to officiate as Principal of the Medical College, Madras. Major S. A. Harris, Deputy Sanitary Commissioner of the United Provinces, has taken over the duties of Sanitary Commissioner of Burma during the absence, on 15 months' leave, of Major C. E. Williams. Major S. Browning Smith, plague medical officer of the Punjab, has been selected to officiate as Sanitary Commissioner of Eastern Bengal during the absence of Lieutenant-Colonel E. C. Hare. Major T. H. Symons has returned to India from leave. Major P. Carr-White, an agency surgeon of the Second Class, has been appointed Agency Surgeon in Kotah and Jhalawar. Major S. Hunt has been granted seven months' combined leave home from India. Major E. Wilkinson, Officiating Sanitary Commissioner of Eastern Bengal and Assam, has been appointed to officiate as Sanitary Commissioner of the Punjab, in place of Colonel C. J. Bamber, who has been appointed Inspector-General of Civil Hospitals, Punjab. The services of Captain W. J. Fraser have been placed temporarily at the disposal of the Honourable the Chief Commissioner of the Central Provinces. Captain E. C. Taylor has been appointed to officiate as an Agency Surgeon of the Second Class and has been posted as Civil Surgeon of Miranshah. The services of Captain J. B. Christian have been placed permanently at the disposal of the Government of Eastern Bengal and Assam. Captain A. Cameron has been posted for temporary plague duty in the Punjab. Captain L. J. M. Deas has been appointed to the medical charge of the Mewar Bhil Corps. Captain H. C. Keates, district plague medical officer, Gujranwala, has proceeded home on one year's furlough. Captain W. L. Trafford has been selected for duty under the Civil Medical Department of the United Provinces. Captain L. Reynolds has taken over duties as Principal as well as Medical Officer in charge of the Lawrence Military Asylum, Sanawar. Captain W. J. Fraser has been appointed Civil Surgeon at Chanda, Central Provinces. Captain N. S. Sodhi has joined for plague duty in the Punjab Captain A. J. V. Betts has been appointed by H E. the Governor of Bombay to act as Deputy Sanitary Commissioner of the Western Registration District, pending the arrival of Major J. H. Marjoribanks. Captain C. A. Gill has been selected to act as Chief Plague Medical Officer of the Punjab, vice Major Browning-Smith. Captain D P. Goil has joined as Civil Surgeon of Rampore Boalia during the absence of Major A. Leventon on deputation.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned Lieutenants are confirmed in their rank: William Darling and John M. Darling.

David Torquil Macleod Large to be Lieutenant (on probation) (dated Sept 23rd, 1910).

John Adams to be Lieutenant (on probation) (dated Sept. 19th, 1910).

TERRITORIAL FORCE.

East Riding of Yorkshire: Surgeon-Lieutenant Robert A. Draper to be Surgeon-Captain (dated Sept. 14th, 1906).

Royal Field Artillery.

1st West Riding Brigade: Surgeon-Captain John Nightingale to be Surgeon-Major (dated August 13th, 1910).

Royal Army Medical Corps.

For attachment to Units other than Medical Units.—William Murray to be Lieutenant (dated Sept. 15th, 1910). Leonard Colebrook to be Lieutenant (dated Oct. 3rd, 1910).

Attached to Units other than Medical Units.—Lieutenant Alexander T. Mulhall to be Captain (dated June 15th, 1910).

Surgeon-Major William Owen Evans, from the 2nd Volunteer Battalion, The Royal Welsh Fusiliers, to be Major, with precedence as in the Volunteer Force (dated April 1st, 1908).

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Surgeon-Captain Sidney Hillier, from the 5th Battalion, The Suffolk Regiment, to be Surgeon-Captain, with precedence as in the Territorial Force (dated Oct. 15th, 1910).

TERRITORIAL OFFICERS DECORATION.

The King has conferred the Territorial Decoration upon the undermentioned officers of the Royal Army Medical Corps, Territorial Force, who have been duly recommended for the same under the terms of the Royal Warrant (dated August 17th, 1908):—Lieutenant-Colonel Thomas Horrocks Openshaw, C.M.G., attached to the Lincolnshire Yeomanry. Major William Crump Beatley, attached to the 6th Battalion, The Northumberland Fusiliers. Major John Tatham Thompson, attached to the 5th Battalion, The Welsh Regiment. Major George Williamson, attached to the 4th Battalion. The Gordon Highlanders. Major Duncan McMillan (deceased).

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on Oct. 11th, Inspector-General W. H. Lloyd, R.N., in the chair, the sum of £50 was distributed among the several applicants.

The *Army and Navy Gazette* of Oct. 15th says: "With reference to some remarks made by Lord Grenfell in an opening speech at the presentation of prizes at the Middlesex Hospital on the 3rd inst. to the effect that during an epidemic of cholera in 1883 a certain amount of compulsion had to be used to get the medical officers of the army to visit the patients in the hospitals, we are authorised to state that the speaker referred to the old Egyptian Medical Department before its reorganisation by British medical officers."

ROYAL COLLEGE OF SURGEONS IN IRELAND: OPENING OF THE WINTER SESSION.—The winter session commenced on Oct. 15th, when the prizes won at the previous session were distributed by the President, Mr. Robert H. Woods, to the following gentlemen:—Barker Anatomical Prize (£26 5*s.*), T. Mather Thomson. Carmichael Scholarship (£15), M. J. Hillery. Mayne Scholarship (£8), J. S. Pegum. Gold Medals in Operative Surgery: J. S. Pegum and F. W. Warren (equal). Stoney Memorial Gold Medal in Anatomy: M. J. Hillery. Practical Histology: G. N. Smyth, first prize (£2) and medal; W. Morrow, second prize (£1) and certificate. Practical Chemistry: C. F. Coyne and M. J. Loftus (equal), first prize (£2) and medal. Public Health and Forensic Medicine: J. C. Sproule, first prize (£2) and medal; Vernon J. White, second prize (£1) and certificate. Materia Medica: M. J. Hillery, first prize (£2) and medal; Vernon J. White, second prize (£1) and certificate. Biology: L. S. O'Grady, first prize (£2) and medal; W. D. G. M'Call, second prize (£1) and certificate. Systematic Anatomy: D. J. Flanagan, first prize (£2) and medal; G. E. Pepper, second prize (£1) and certificate. Descriptive Anatomy: W. I. Adams, first prize (£2) and medal; D. J. Flanagan, second prize (£1) and certificate. Practical Anatomy: First year, W. Morrow, first prize (£2) and medal; R. A. Austin, second prize (£1) and certificate. Second year, J. C. Sproule, first prize (£2) and medal; W. I. Adams and G. E. Pepper (equal), second prize (£1) and certificate. Practice of Medicine: J. T. Duncan, first prize (£2) and medal; T. M. Thomson, second prize (£1) and certificate. Surgery: J. T. Duncan, first prize (£2) and medal; F. W. Warren, second prize (£1) and certificate. Midwifery: J. T. Duncan, first prize (£2) and medal; M. S. Moore, second prize (£1) and certificate. Physiology: J. D. Cherry, first prize (£2) and medal; A. F. Patterson, second prize (£1) and certificate. Chemistry: J. Lanigan, first prize (£2) and medal; L. E. Wigoder, second prize (£1) and certificate. Pathology: Vernon J. White, first prize (£2) and medal; T. T. Buckley, second prize (£1) and certificate. Physics: A. Merrin, first prize (£2) and medal; L. E. Wigoder, second prize (£1) and certificate.

Correspondence.

"Audi alteram partem."

THE MEANING OF THE AUDIBLE SIGNS IN MITRAL STENOSIS.

To the Editor of THE LANCET.

SIR,—Dr. Leonard Guthrie wields so graceful a rapier and lunges so chivalrously that one feels disposed to lower one's guard to experience the pleasure of being run through by so courteous an opponent! To do so would, however, not be regarded by him as a favour, and I therefore crave your permission to endeavour to parry his thrust by replying to some of the criticism in his letter to THE LANCET of Oct. 15th on my paper under the above title which appeared in your issue of Oct. 8th. That title speaks of the physical signs audible *in* mitral stenosis, but all of which are not necessarily indicative exclusively *of* that condition.

Dr. Guthrie selects for comment one of the most interesting of these signs—namely, the apical triple rhythm met with in some phases of the cardiac action in cases of mitral stenosis, but which, I entirely agree with him, is not *only* met with in such cases. Indeed, it may frequently be observed when there is no organic valvular disease whatever, as, for example, in the ventricular dilatation of the yielding "renal heart." I also agree with Dr. Guthrie that it may frequently be observed in early childhood in connexion with mitral regurgitant disease in which there is no suspicion of valvular stenosis. When, however, he places in the same category the significance of the "presystolic bruit," if by this he means a persistent presystolic bruit, I do not see eye to eye with him. Without reference to notes I cannot state the earliest age at which I have met with mitral stenosis. Rarely, if ever, I think, as early as the fifth or sixth year of life, but I have certainly, as I think he must also have done, observed it from time to time in children not much older. Nor can I recollect having noticed a true presystolic bruit in mitral regurgitation at any age. The virtual presystolic of an enlarged heart with stretched mitral curtains, which may be met with in aortic as well as in mitral cases, I do not include in this comment.

With reference to the exception which Dr. Guthrie takes to the term "reduplicated second sound," in so far as it applies to the apical triple rhythm I am again at one with him. If he will refer to my paper he will find that that expression, used in this connexion, was employed by the late Dr. Cheadle whom I quoted without sharing his views. In the text case of my paper the true second sound was reduplicated at the base, but was at no time so heard at the apex. This only leaves as a matter of contention between us the nature of the three components of the apical triple rhythm, which, we are agreed, can by no conception be regarded as the reduplicated second sound of the heart. We are agreed that the first of these three sounds is, to quote Dr. Guthrie, "the heart's first sound," and, he adds, "often accompanied by a systolic bruit." I agree that this is so, but not in mitral stenosis. In taking the view he does he agrees with the majority of those who have considered the subject, some of whom I quoted in my paper. The same difficulty, however, presents itself as in adopting my view—namely, that, of the admittedly reduplicated second sound at the base only one portion, one sound or note, reaches the apex, and of this I have suggested the only solution which occurs to me. The second sound of the triple rhythm or canter, I believe, moreover, occurs earlier than the true diastolic phase, which follows the third sound.

Dr. Guthrie considers this third sound to be a diastolic bruit, and emphasises the point by stating that it "is direct and not regurgitant." He no doubt means by this that the bruit is never aortic, for a direct diastolic bruit must of necessity be atrio-ventricular. I agree with him that the third sound may be blunted by bruit—was so in the text case of my paper; but I fail to see how, on the purely bruit hypothesis, tone, as distinct from murmur, is imparted to the third note in the canter. There are those, moreover, who are under the impression that the apical triple rhythm is at times associated with a palpable diastolic impulse or an impulse following that of the chief ventricular systole. Of

the existence of this, except as the extra-systole of an arrhythmia, I have never been able to convince myself. I confess, therefore, Sir, with every desire to give full weight to the objections urged against the explanation of this sign given in my paper by so skilled an observer as Dr. Leonard Guthrie, that I still venture to maintain the possibility of an audible yet unregistrable ventricular extra-systole constituting the second note in the apical triple rhythm.

I am, Sir, yours faithfully,

ALEXANDER MORISON.

Upper Berkeley-street, W., Oct. 16th, 1910.

OPERATIONS AND MORTALITY.

To the Editor of THE LANCET.

SIR,—A careful perusal of your leading article in THE LANCET of Oct. 15th leads to the conclusion that in your opinion under no circumstances is it advisable that an inquiry of any kind should be made after any fatal operation. You say, "There are ever those who are ready to cry unjustifiable when some new operation is proposed or performed." On Oct. 1st last, however, you also say in a leading article on Fashion in Surgery: "There is, however, no little risk that in becoming accustomed as we are to a rapid progress in our ideas and methods we may from time to time mistake mere change for progress, the mere introduction of a new method for true advancement, a chance which is certainly increased by the fact that many procedures in surgery hold a place in our technique for a very brief period." Now, I agree in its entirety with these remarks of yours, which you further illustrate by reference to Sir James Simpson's method of arresting hæmorrhage by acupuncture, which you rightly say is now "absolutely forgotten." You also mention Calot's method of forcible reduction of angular curvature of the spine, the wonders of which "were proclaimed in nearly every medical periodical," but you further say, "Where is Calot's method now?" "Dangers undreamed of, or unmentioned, at the time soon made their appearance." "A few sudden deaths occurred and the promised improvement in the power of walking never materialised."

I would respectfully ask you, Sir, Do you not think that, say, one or two inquiries into the cause of death in some of these fatal cases would have been proper and to the benefit of the public at large? Not with a view to casting obloquy on an honoured profession, but with a view to the safety of the public and to bring about a discontinuance of a dangerous, and even fatal, operation.

Again, you further on in the same article state that: "In even more recent times still we have had gastro-enterostomy put forward as a panacea for all the ills that the stomach is heir to; for pyloric stenosis, both functional and organic; for ulcer of the stomach and duodenum; for hæmatemesis; for dilatation of the stomach, both with and without pyloric stenosis; for malignant, as well as for simple, affections of the stomach." You then go on to say in most pregnant language: "Time, which tests all our inventions, has shown that this operation does not possess all the powers attributed to it, and at the present day probably the majority of surgeons will agree that gastro-enterostomy is seldom of permanent value unless there is definite obstruction at the pyloric opening." Surely, after this scathing criticism of the operation of gastro-enterostomy, even you would admit that there was at any rate *primâ facie* evidence that, in case of a fatal termination after this operation had been performed, say for gastric ulcer or spasmodic obstruction of the pylorus, there was a reasonable ground for an inquiry, even by a coroner's jury, and that no surgeon should undertake the operation unless he was quite prepared to face an inquest.

In your article of Oct. 15th you say: "Nothing would tend to stem the onward progress of surgery so much as to make a surgeon liable to have his work tried before a coroner's jury." From this proposition I entirely dissent, and to any careful reader of your article on "Fashion in Surgery," already alluded to, it must seem clear that some such controlling influence is required to prevent what we all know is so prevalent: that as soon as any surgeon introduces a new operation a host of imitators arise, and to the great disaster of progressive surgery numerous fatalities occur, due either to the initial unsoundness of the operation, or, in other cases, to the faulty technique of the unskilful imitator.

One more quotation from the same article. You say: "We cannot imagine a tribunal less fitted for deciding questions as to the desirability of an operation, or the capability of a surgeon, than a coroner's jury." In this you are at issue with most eminent members of the legal profession. Henry Edwin Fenn, senior reporter to the Law Courts, in his work on "Thirty-five Years in the Divorce Court," p. 208, says: "Juries are generally right, often more so indeed than judges and counsel, because they judge from a common-sense point of view." Sir Edward Carson, K.C., p. 213, said: "As a rule, juries return good verdicts. I should prefer a jury's verdict to that of a judge." Chief Justice Eve, p. 214, remarked: "A jury is in general far more likely to come to a right decision than a judge." Lord Halsbury says: "As a rule, juries are, in my opinion, more generally right than judges." Lord Russell of Killowen, p. 214, "held a very strong opinion on the value of a jury as judges of matter of fact. He always thought that the average opinion of twelve men of commonsense was at least equal to the judgment of twelve judges on matters of fact."

Provided you have no objection, Sir, I would respectfully ask you to state explicitly that under no circumstances do you consider it advisable that a fatal case after operation should be the subject of an inquiry? If you would not go so far as that, will you state under what circumstances you would consider an inquiry necessary? and, as you object to juries, what tribunal you would suggest as an equitable and proper one for the purpose? This question is coming rapidly to the front and the medical faculty may as well at once make up their minds to face it. Personally, my own opinion on the matter is simple. The present coroner's inquest is all that is needed: the ordinary jury is quite able to adjudicate on the matter. If no operation were undertaken, involving any particular risk, without a deliberate consultation beforehand, with one at least, but preferably two, experienced practitioners, no operator need fear an adverse verdict of the jury in case of a fatal termination. The coroner should have the power, after considering the details of the case furnished to him, to determine as to the advisability of holding an inquest or not. This would at once prevent the holding of needless and vexatious inquests. More than this, I am of the opinion that if the people at large knew that these precautions were taken, they would more cheerfully and voluntarily resign themselves to the surgeon's hands, confident that no merely experimental operations would be undertaken, but only such as were for the undoubted benefit of the patients themselves.

I am, Sir, yours faithfully,

JAMES A. RIGBY.

Preston, Oct. 17th, 1910.

*** In the leading article of Oct. 15th we purposely alluded to the previous article of Oct. 1st. The disuse into which a new and wrong procedure falls is quite rapid, while the tendency of the compulsory inquest would be to prevent any new and right procedure ever being tried. Certainly we do not say that in no case would an inquest be justifiable where an operation had been fatal. Nor have we said that we "object to juries," but only that a coroner's jury is an unfit tribunal to sit in judgment upon surgical methods and results.—ED. L.

EFFICIENT VENTILATION.

To the Editor of THE LANCET.

SIR,—I am glad to see Dr. Leonard Hill drawing attention to the important fact first brought out by the classical experiments of Professor Flügge and his pupils Paul, Heymann, and Erclentz,[1] by Dr. Haldane,[2] and confirmed by himself—namely, that the unpleasant sensation of "stuffiness" or "closeness" induced by air of an occupied room in which the ventilation is imperfect is due to heat retention. I should like to see our sanitary authorities making practical application of this discovery for the benefit of the public health, and apparatus recording the wet bulb temperature of the air in use in all theatres and public places of assembly, such apparatus submitted to regular inspection, and a fine imposed when the wet bulb temperature of the air during occupation exceeds the limit compatible with comfort and health. Why should one be incubated when at the theatre?

[1] Zeitschrift für Hygiene, Band xlix., 1905.
[2] Journal of Hygiene, 1905.

Further, I should like to see the London County Council compel tube railways to keep their air within this limit.

But important though the wet-bulb temperature of the air may be, it is by no means the only factor of importance from the point of view of health and comfort. On the other hand, when investigating the ventilation of the Debating Chamber of the House of Commons I found reason to suspect that much of the discomfort complained of under the old conditions was due, not to excess of wet bulb temperature, but to the air having been over-dried.

In addition to those qualities of the air that appeal more especially to the physiologist, I submit that the bacteriological quality of the air of occupied rooms is also of immense moment. In this sense (*pace* Dr. Hill) the chemical index of expired CO_2 is not necessarily an index of the degree of the important bacterial impurity, for bacteria are not given off from the upper respiratory passages in ordinary quiet breathing, but only in loud speaking, coughing, or sneezing. As most of the bacteria-laden droplets of mucus sprayed out in these acts—though they may be wafted by air currents to considerable distances (70 feet or more)—sink to the floor within 10 to 30 minutes, I see no reason theoretically why with a properly designed and efficiently maintained system of downward ventilation this natural gravitation of droplets should not be made use of and accelerated, and the spread of infection thus curtailed, even though an infectious person possibly be present.

I hope the time may come when the purity of the air in public places of assembly will be as carefully looked to by the public health authorities as, say, the purity of the public water-supply is at present, and I hail Judge Rentoul's decision as of good omen. But before the air in these places, or in ships, is as satisfactory as it ought to be, the architects and engineers who design and maintain the so-called systems of ventilation in use in them will have to be in closer touch with the practical teachings of modern physiology and bacteriology than they have shown evidence of having been in the past. It would appear that too much reliance has been placed on the arrow diagram and cast-iron formulæ, and that too little actual testing of these systems has been done with the anemometer, the smoke test, and—most important of all—the human subjective test.

I am, Sir, yours faithfully,

Harley-street, W., Oct. 17th, 1910. M. H. GORDON.

To the Editor of THE LANCET.

SIR,—Dr. Leonard Hill has written to express his entire dissent from a note published in THE LANCET on Oct. 8th relating to efficient ventilation at sea. He seems to me to have misunderstood the annotation and the best proof of this is that I find nothing in Dr. Leonard Hill's expression of dissent with which I do not agree, while I also agree with the author of the annotation in question. I quite understand that in a very hot, still, and damp temperature the quick movement of air produced by a mechanical fan would be a great relief, helping the circulation of the blood and generally raising the vitality of those concerned. But ventilation was the question at issue, and this is needed in all climates. When the weather is cold not only will fans be useless but the air admitted by the ventilator must travel very slowly, for if people feel a draught they will interfere with the system of ventilation. In pointing out that the public is apt to mistake the movement of the air produced by the rotation of a fan for ventilation, it is not necessary to urge that the use of fans should be abolished. Nevertheless it seems to me that fans have nothing to do with ventilation proper.

Further, Dr. Leonard Hill urges the importance of the bacteriological rather than the chemical test for purity of air and says the open-air man is most exempt from infection. With the mud adhering to our boots we may bring into dwellings or cabins many specific germs. The other day I was in a railway dining-car where the revolving fan above created gusts which blew the menu off the table. Surely it could likewise raise the dust and bacteria from off our boots to mix them with our food. This without ventilation might be dangerous. But the dust thus raised might be at the same time conveyed out into the open air by the steady current of a well-organised system of ventilation. Dr. Leonard Hill insists on the benefit of open air, and I advocate here the necessity of efficient ventilation, so that we may have a sufficiency of open air indoors.

I am, Sir, yours faithfully,

London, Oct. 17th, 1910. ADOLPHE SMITH.

THE PROPERTY IN PRESCRIPTIONS.

To the Editor of THE LANCET.

SIR,—I have read with interest Dr. J. C. McWalter's letter in your issue of Oct. 15th, but he appears to be thinking of the law as perhaps it should be rather than as it actually is. There is nothing in English law to prevent a pharmacist selling a scheduled poison to any person who is known to him, whether such person has a medical prescription specifying it or not, although when supplying in accordance with a prescription the pharmacist is relieved from the necessity of observing certain statutory formalities which are otherwise incumbent upon him.

Again, a prescription, although generally written so that it can be compounded only by a trained pharmacist, is not usually addressed to any particular dispenser, and the fact that it has been presented for compounding to a pharmacist gives no kind of right to him to retain it. I submit that the pharmacist is an independent contractor. He is not in any sense an agent of the doctor, there being no privity of contract between them. Dr. McWalter's analogy with regard to his directions to a nurse hardly supports his contention. It is true that they were given at a certain time to a particular nurse concerning a specific patient in a known condition, but if repeated at other times for other persons, however unsuitably, I doubt if the learned doctor could obtain an injunction to, or in any other way restrain such unauthorised use of his skilled instructions.

I am, Sir, yours faithfully,

Middle Temple, Oct. 15th, 1910. H. WIPPELL GADD.

THE TREATMENT OF UTERINE FIBROIDS BY ELECTRICITY.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Oct. 15th Dr. Agnes F. Savill reports in an interesting way a case of uterine fibroid treated by X rays. It seems to me that if this treatment is to last a year it can never compare favourably with Apostoli's method by the continuous current. Lately I have had a letter from one patient and seen two cases treated by me in 1889–90—20 years ago. In two the course lasted the usual time of three months; in the third, owing to special causes, for nearly twice that time. All were cases where the prominent symptom was hæmorrhage. The first, a lady 36 years of age, was perhaps the most anæmic person I have ever seen, and was doubtless too bloodless for operation; the second was under 30 years of age, and removal of the ovaries had been recommended; and the third declined operative measures. All have now finished with menstruation, have enjoyed good health for 20 years, and in all what was left of the tumours has given rise to no symptoms.

The operation of hysterectomy, formerly so dangerous, is now so safe that I consider operation as a rule the most satisfactory treatment, but occasionally there are cases where surgical treatment is not possible, as when a patient refuses, or when it is essential that the possibility of bearing children should not be lost. In such, Apostoli's method, provided the case is a suitable one, will compare favourably with any other form of non-surgical treatment.

I am, Sir, yours faithfully,

Oct. 17th, 1910. SKENE KEITH.

CÆSAREAN SECTION SUCCESSFULLY PERFORMED TWICE IN THE SAME PATIENT.

To the Editor of THE LANCET.

SIR,—Cæsarean section is not a very common operation, so that a case where a patient underwent the operation twice successfully may be worth recording.

A Chinese woman, aged 26 years, came to hospital in 1908 in the middle of the night in labour and eight months pregnant. I assisted Dr. W. V. M. Koch (assistant superintendent) at the operation, when a dead fœtus was delivered. The woman made an uneventful recovery. In 1909 she returned four months

pregnant, when Dr. Koch dilated the os and emptied the uterus. In 1910 she returned eight months pregnant and in labour. I assisted Dr. W. B. A. Moore (assistant superintendent), who in addition to delivering a dead fœtus removed an inch of each tube. The woman recovered without a bad symptom. All diameters of the pelvis were uniformly contracted.—I am, Sir, yours faithfully,

J. BELL,
Superintendent of the Civil Hospital, Hong-Kong.

OPERATION FOR PROLAPSE OF THE RECTUM.

To the Editor of THE LANCET.

SIR,—With reference to an article by Mr. Leslie W. Dryland in your issue of Sept. 10th, p. 801, on prolapse of the rectum, and your annotation on the same, I write to state that I have performed a similar operation on two occasions.

The first was a middle-aged woman who had suffered from procidentia of the rectum for many years; it was about 6 inches long when fully down. After opening the abdomen in the left semilunar line I divided the peritoneum for about 2½ inches to the outer side of the left external iliac vessels and stripped up an outer flap of peritoneum to make a bed for the colon, removing the extra-peritoneal fat to allow the bowel to come into contact with the iliacus muscle. The edge of this flap was then stitched to a longitudinal band. This was about a year ago, and the result has been quite successful, the bowels acting normally and showing no tendency to prolapse.

Some time after performing this operation I came across a similar one described by Murphy in Kelly and Noble's "Operative Surgery," in which he speaks very highly of the procedure. Murphy makes a nest in the left iliac fossa for several inches of the bowel and stitches the peritoneal flap to the meso-sigmoid as well as to the bowel wall. The success attending the first case induced me to try it again a few months later in the case of a young woman, aged 30 years, who was three months pregnant. She had suffered terribly from the prolapse during her previous pregnancy and confinement and dreaded a repetition of it. At the time of my first seeing her the bowel always prolapsed several inches whenever she walked. A similar operation was performed and she went safely to term. During the latter months of her pregnancy there was a little prolapse of mucosa on defæcation, but if this persists it can be easily dealt with locally.

Colopexy in bad cases of prolapse is undoubtedly safer than amputation of the prolapsed bowel and appears to give quite as good results. Fixation of the bowel in the iliac fossa is unquestionably better than securing it to the anterior abdominal wall, the fixation being firmer, and there is no risk of leaving a weak scar, which is necessarily the case when the edges of the parietal peritoneum are not sutured together. I am, Sir, yours faithfully,

SIDNEY BOYD.
Chandos-street, Cavendish-square, W., Oct. 18th, 1910.

A REMARKABLE CASE OF INJURY TO THE EYE.

To the Editor of THE LANCET.

SIR,—The following account of an accident that is, I believe, unique in the history of the London and North-Western Railway Company, may be of sufficient general interest to make it worth recording.

On Sept. 22nd last an express engine-driver of the London and North-Western Railway Company came to my out-patient clinic at the Liverpool Eye and Ear Infirmary with the following story. Ten days previously he was driving the Irish Mail from Chester to Holyhead, and whilst running at a speed of 60 miles per hour down the line near Flint the window of the engine "cab" was struck by a thrush, which came through the thick plate-glass "like a bullet" and struck him in the left eye. He continued the journey to Holyhead, a distance of over 60 miles, and returned to Chester as a passenger by the next train, and had undergone some treatment at his home in that city.

I need not go into details as to the condition of the eye, but it is sufficient to say that there was a very small punctured wound in the sclerotic in the lower and outer quadrant of the eye and the whole eye was intensely inflamed. The man himself thought that this wound had been made by the bird's beak, but I strongly suspected a fragment of glass, which was not, however, proved by the X rays. The eye improved considerably under treatment, and I decided not to meddle with the wound in the hope that the small fragment of glass would be extruded. This duly happened, and a very small splinter of glass was found lying loose under the lower lid by my friend, Dr. Cyril Dobie of Chester, three days after the man left the hospital, this being the second occasion lately that I have known of a fragment of glass being extruded from the original wound by natural process.

I am told that a cracked window from the impact of a bird is not an uncommon accident to express engines, but that there is no previous instance on record of a bird coming bodily through the window, at any rate, in the history of the London and North-Western Railway. The thrush, which I suppose weighs about 4 ounces, must have been travelling at a good speed in the opposite direction, and they probably met at about 90 miles per hour. Needless to say, the thrush did not survive. I think the man's pluck in continuing the non-stop run to Holyhead is worthy of great commendation.

I am, Sir, yours faithfully,

EDGAR STEVENSON,
Honorary Surgeon, Liverpool Eye and Ear Infirmary.
Liverpool, Oct. 17th, 1910.

FIRST OPERATION UNDER ETHER IN EUROPE.

To the Editor of THE LANCET.

SIR,—I am collecting materials for a description of the first operation under ether in Europe, that performed by Robert Liston, Dec. 21st, 1846, and should be glad to hear from any surviving witness. At present Lord Lister is the only one known to me. The dresser, whose notes of the case are now before me, was Edward Palmer.

I am, Sir, yours faithfully,

F. WILLIAM COCK, M.D. Durh., F.S.A.
1, Porchester Houses, Porchester-square, W., Oct. 15th, 1910.

*** In the *Pharmaceutical Journal*, Vol. VI., No. 7, Jan. 1st, 1847, pp. 337–38, there is the record of two operations under ether by Mr. Liston at the North London Hospital on Friday, Dec. 18th, 1846. The first operation was that on Frederick Churchill, a patient with disease of the knee-joint, in which amputation was found necessary. The operation took place at 2 o'clock on Friday, Dec. 18th. The second operation was on an out-patient with a painful toe. This account was sent in by Mr. Ransome, the house surgeon of the North London Hospital. The medical staff at University College (or North London) Hospital at that time were Dr. C. J. B. Williams, Dr. A. T. Thomson, Dr. John Taylor, Dr. W. H. Walshe, Dr. E. W. Murphy, Mr. S. Cooper, Mr. Richard Quain, Mr. T. Morton, Mr. Durancé George, and Dr. Richard Quain. Surgical clinical lectures were given by Mr. Liston and Mr. Richard Quain.—ED. L.

THE QUESTION OF A COUNTERBLAST.

To the Editor of THE LANCET.

SIR,—Every member of the medical profession must receive a daily shock when he takes up his newspaper and searches for the news amongst the superabundance of quack medicine advertisements, each purporting to be an epoch-making discovery. To those whose sole literature is the newspaper such advertisements actually represent medical views. The readers believe that the statements therein made represent the progress of medical science. Surely some means can be adopted to enlighten these poor people who waste their money on quack remedies. It would be useless to attempt a crusade against these advertisements through the medium of the newspapers which publish them. Surely, however, we could reach a very large proportion of the population of our big cities by making use of the walls of the waiting-rooms of hospitals to issue a counterblast. Without mentioning any names, if this were thought inadvisable, a general warning could be posted up on these walls against the indiscriminate use of such medicines,

denying also any connexion between quack advertisements and the medical profession.

I am, Sir, yours faithfully,

County Hospital, Guildford, Oct. 15th, 1910. H. J. FARDON.

PARIS AND THE RAILWAY STRIKE.

(FROM A SPECIAL CORRESPONDENT.)

Paris during the Strike: The General Food-supply.—The Milk-supply.—The Public Danger.

THE great five days' strike is now practically over as far as Paris is concerned, but it will be some days before the total extent of the damage caused can be estimated. Already the actual loss to commerce is calculated at 50 per cent. of the ordinary daily income, and it is expected that it will take at least a week before a normal rate of business can be carried on.

The General Food-supply.

Owing to the prompt measures taken by the Government as well as by private firms, the threatened danger of a shortage in the food-supply was averted from the first. Three-quarters of the provisions needed daily by the 2,270,000 people in the city comes by rail, but in the last 20 years the river service has increased enormously, as much as 600,000 tons of foodstuff being landed yearly on the Paris quays. The authorities had not waited for the strikers before establishing a plan of mobilisation of the Seine shipping. This, with the coöperation of carts bringing in the country produce and of orders forbidding the re-expedition to the provinces of cattle already in the stockyards at La Villette, put out of the question all cause for alarm on the score of famine.

The Prefecture of the Police requested M. Guichard, the Market Commissioner, to draw up a map of France indicating the points from which the chief supplies were obtained. This map enabled the authorities to direct their energies at once on the most important sources of supplies, and by Thursday night, Oct. 13th, within 48 hours of the commencement of the strike, a system of specially guarded food trains, as well as a boat service by river and canals, was in full working order. The strikers tried to incite to revolt the carters who bring the provisions from the stations to the market, but this attempt met with complete failure, some of the men being engaged for their military service (which seems to have a calming effect), and the others being accompanied on their wagons by an armed soldier.

Prices in consequence of these able measures for the most part remained normal, the only exceptions being butter, eggs, potatoes, and fish. The rise in eggs may be accounted for by the fact that the consignments usually coming in from the foreign markets are a little late this year. The rise in potatoes is attributed to the bad harvest, which has just induced the Government to allow the importation of American potatoes, which have hitherto been excluded from the French markets on account of their fear of the potato blight. The fish market was the only one seriously affected by the strike. On the 12th only 92,000 kilos from the Dutch, Belgian, and French ports arrived at Les Halles instead of the usual amount of 200,000 kilos, and this caused a rise in price of 20 per cent. The non-arrival was not entirely due to the lack of train service, for more than one car load arrived on Thursday at the Gare du Nord, but as no one was admitted to the platforms for fear of *sabotage*, the fish was allowed perforce to rot in the station. The bakers, who number 2200, declared that they had sufficient flour in stock to furnish their customers with bread for at least 11 days, and the supply of fresh fruit and vegetables was assured, to some extent at least, by the market carts which come in from the country every day.

The Milk-supply.

The chief fear was in regard to the milk in view of the dependence on it of the children and the sick. There was a considerable shortage on Wednesday and Thursday. Of the 870,000 litres of milk that come into Paris daily, about 200,000 litres are delivered at the Gare du Nord, and on Wednesday morning the dealers had to face a shortage of 90,000 litres. About 10,000 litres were brought into the city by a temporary cart service, and the Société Maggi made heroic efforts to supply its customers by means of relays of motor drays as well as a boat service. Some of the depôts of the Société Laitière Rothschild were obliged to refuse to sell to everyone, as they had only enough for families with children. At the hospitals Cochin and Lariboisière no inconvenience was felt, but the supply for the maternity hospital Baudelocque was not enough for its needs. There was considerable uneasiness on Wednesday at the different establishments of the Assistance Publique. At the Salpêtrière the daily distribution of 300 litres of milk was reduced to 150 litres. Many of these places, such as Berck, Angicourt, Saint-Firmin-Vineuil and Aulnay-les-Bondy, are provisioned from Paris, and the Assistance Publique was obliged to send 6000 kilos of victuals to the sanatorium of Angicourt by cart and supplies of coal to Brévannes by motor-dray. On the other hand, the directors were obliged to keep in Paris two convoys of sick children ready to be sent off to the sanatoriums of Berck and Romorantin, while it was equally impossible to despatch with their foster-mothers the little ones who were to be established in homes in the departments of the Nord, Pas de Calais, and La Somme.

Dr. Variot, the physician-in-chief of the "Hôpital des Enfants Assistés," in a letter written to the *Éclair* on the 14th expressed his alarm at the non-arrival of the specially prepared (*sur-chauffé*) milk which is sent from Normandy and sold at reduced prices for the benefit of the suffering poor. At the charitable organisation of the "Goutte de Lait de Belleville" they were obliged to send away 200 poor women who had come for the daily distribution of this milk, and the authorities are to be warmly congratulated on the prompt measures taken which caused this distressing state of things to last so short a time. By Saturday morning the milk was once more arriving in the ordinary quantities, though the customers in the Fifth and Sixth Arrondissements had to wait for their supply till 9 o'clock, as the supply had been sent *viâ* the Gare d'Austerlitz instead of the Gare de Vaugirard.

The Public Danger.

In view of the different attempts which were made to endanger the public safety, it is nothing less than marvellous that the escapes have been so many and the casualties so few. Law and order have had to reckon, among the strikers, with a group of irresponsible persons openly glorying in their schemes for endangering the lives of their fellows, and no amount of foresight can entirely cope with the power for harm of the man who fears no consequences. Wherever preventive measures were possible they were quickly taken, and it is largely due to the vigilance of M. Briand and M. Lepine that France has not had to deplore more than one hideous catastrophe. During the strike the many acts of *sabotage*, usually discovered only just in time to avert a terrible accident, have been duly noted in the press. It is, perhaps, not so well known that similar attempts were being made for some months before the strike was declared. Naturally the railway companies do not care to publish abroad the details, but from time to time some indiscreet journalist elicits such facts as the signal cutting at the station of Maison Alfort or the attempted train wrecking at Jonchery, near Chaumont, when the lights were put out and a beam was laid across the track. It is also a fact well known in railway circles that in the suburbs surrounding Paris the cutting of the wires which control the signals, or the points, or the telegraph is a matter of frequent, some say daily, occurrence.

The Government has taken extraordinary precautions from the beginning. Several battalions of soldiers were quickly marched into Paris to guard the railway stations, where the police might be seen loitering about the doors in groups of from 10 to 15. Military engineers were employed in the railway electric works, and detachments of soldiers were distributed along the tracks at regular intervals to guard against the train wreckers. The two big demonstrations of the strikers which took place in Paris were so well guarded that the list of casualties was small, and even the numerous cases where the workers have been assailed by the strikers have not had any serious consequences.

On the whole, Parisians have shown a wonderful amount of *sangfroid*—from M. Lepine, strolling into the office of *L'Humanité* and gracefully introducing M. Hamard with his warrant to arrest the assembled editors, down to the little *midinette* philosophically truding the five miles to her *atelier*. Save the timid souls who thronged the big grocery shops and

repeated their large orders of last January, everyone seemed to recognise that M. Briand has had a firm grasp of the situation from the very beginning.

There is not a little irony in the fact that it is the poorer classes who have been the chief sufferers from the strike. The total losses of the Gravelines fishermen amount to £2000, while the small dealers in Paris suffered considerably from the non-arrival of their wares. The cost of living in the city being prohibitive to many workpeople, a large number live in the suburbs and come in every day by train or tramway. The failure of the electric power made the latter unavailable on many lines, and though a service of vans was soon established many people preferred to walk long distances rather than subtract from their modest daily wage the franc demanded for the drive. At the time of writing more fiendish attempts at bomb-throwing are reported. The bombs aimed at the rich have done no damage beyond wrecking a few windows. The only victim is a poor street cleaner, peaceably doing his duty, whose eyes have been badly burnt by the explosion of a package which had evidently been thrown into the gutter by someone who thought himself pursued.

The history of last week's strike offers many unnoticed details of duty unobtrusively performed. These never get such big headlines as the achievements of the strikers. But pessimists would do well to remember such instances as the linesmen who stuck to their posts and industriously helped the military engineers to repair the acts of destruction, and the driver who stayed 20 hours on his engine in order to pick up and take on to Paris three extra car-loads of provisions which he found abandoned *en route* and which he succeeded in bringing into the city with only 25 minutes' delay. The soldiers contributed not a little to the good humour of the crowds filling the stations by the willing fashion they acted as amateur porters, while if the public are thankful the strike is over the police are no less content. In reply to an inquiry as to whether the trains were running on Saturday night the tall policeman answered, "Mais oui, mais oui, ça marche bien. Il n'y a que nous qui ne marche pas, parce que nous n'en pouvons plus."

Oct. 17th.

NINTH INTERNATIONAL CONFERENCE ON TUBERCULOSIS.

(FROM A SPECIAL CORRESPONDENT.)

THIS year the International Conference on Tuberculosis held its ninth series of sessions at Brussels between Oct. 5th and 8th, under the patronage of His Majesty King Albert of Belgium.

Permanent Commissions.

The first day, devoted to the meetings of the council, though it bulked but little in the public eye, was of importance in so far that a series of permanent commissions were then organised, some of them dealing with entirely new subjects, others continuing subjects already under consideration. The President, M. BOURGEOIS, suggested that these commissions should be made permanent and that they should be asked to report at the Conference to be held at Rome next year. Six of these commissions are to collect evidence on questions of a more or less scientific character, and six are to deal with social questions. In the first group are included such questions as predisposition; channels of infection; milk; methods of treatment, scientific and vaccinal; international methods of notation; and the curative action of the solar rays. In the second group we have the part played by women in the crusade against tuberculosis; child-life and school hygiene; prophylaxis and the part played by the dispensary; the cure of tuberculosis; the public measures to be taken against tuberculosis; and the statistics of tuberculosis. On these commissions are represented, as far as possible, the different nationalities taking part in the work of the Congress. In the evening a reception was given by the Governor of Brabant, M. Beco, who was acting as the President of the Committee of Organisation.

Formal Opening of the Conference.

On Thursday morning, the 6th, the formal opening of the Conference was under the presidency of M. BERRYER, Minister of the Interior, who compared the Tuberculosis Congress to the great Peace Congress at The Hague. Both, he said, were inspired by the same profound thought, and both wished to obtain the same results; in fact, one merged into the other, and the warring of man against man was being gradually replaced, thanks to a more humane sentiment, by a movement in which all men were combining in common action against the universal ills of vice, misery, disease, and death—a sentiment that was echoed most eloquently by M. BOURGEOIS.

Discussion on the Influence of Predisposition and Heredity.

Professor LANDOUZY, introducing the first subject for discussion, the Influence of Predisposition and Heredity, claimed that these were almost as important from the practical point of view as was the bacillus of Koch itself. He maintained that the bacillus tuberculosis in the parent might act in two ways, either by direct passage from the parent to the offspring or by some toxic action on the ovum or upon the fœtus. He pointed out that these two sets of conditions were necessarily perfectly distinct, but maintained that the latter was of far more importance than the former and that it accounted for the peculiar tuberculous diathesis so frequently met with in patients the subjects of tuberculosis. He maintained that they were degenerates who often came into the world before their time, were under weight, short in stature, with thin, delicate bones, flattened chests, a skin delicate and soft, small extremities, pale and sickly face, veins very transparent, hair prematurely developed, long eyelashes, glands easily enlarged, and aspect weakly. Such features he had found specially amongst his patients and, curiously enough, these patients, with their silky, golden, or red hair, their pale, transparent skin, finely spotted with freckles, reminded him of those beauties depicted by the painters of the Venetian School, for which reason he spoke of them as of the Venetian type, or *vir rufus*. Such patients, he thought, were specially subject to tuberculosis.

M. ARLOING (Lyons), following Professor Landouzy, agreed that tuberculosis itself was seldom communicated directly from mother to child, but that a certain functional debility might be transmitted, this leaving the child open to the invasion of various causes of disease and death. In this transmission the mother played a much more important part than did the father. He thought, however, that it would be a very difficult matter indeed to demonstrate experimentally any predisposition, native or hereditary, to tuberculosis, though he believed that the offspring of the tuberculous subjects were more susceptible than those born of normal persons. This, however, was a matter that required further consideration.

Dr. AUFRECHT, speaking of the natural portals of entry, maintained that the most important of these were undoubtedly the following: the mucous membranes of the throat, especially that of the tonsils, the intestinal mucous membrane, and the epidermis. He held that the lymphatic glands played a great part in sifting out and destroying the bacilli and that as these glands became lowered in vitality they might be broken down and become scrofulous. He seemed to lay special stress on the glands and the part they played in the tuberculous process.

Professor CALMETTE, in speaking of the special predisposition of children of tuberculous parents, said that this receptivity was not specific as regards tuberculosis but applied generally to various infections and intoxications. The predisposed of the clinicians he maintained were almost invariably the subjects of infection; they were, he thought, already more or less gravely affected, especially as regards the lymphatic glands and in almost all cases reacted positively to the various tuberculin tests. Again, he found that if in place of tuberculin he injected mallein into such patients he obtained a definite loss of weight, this showing that there was a general as well as a specific predisposition. The stigmata of tuberculosis appearing at certain ages were, he thought, the result of earlier infections. Indeed, he found that of children coming up to be vaccinated 90 per cent. of those from the town of Lille were already infected with the bacillus of tuberculosis, even in cases where no definite lesions were developed, whilst in one lunatic asylum he found no fewer than 87 68 per cent. of the patients giving the skin reaction, so that if they were not already tuberculous they were certainly the carriers of the germs of the disease.

M. C. GUÉRIN agreed that amongst animals those with non-pigmented coats appeared to be more susceptible or had

a greater predisposition to tuberculosis than those of darker skin.

Dr. NATHAN RAW placed on record the result of an analysis of 232 cases of tuberculosis that had terminated fatally and found that pulmonary tuberculosis was most frequently brought about, first by direct inhalation of the bacillus tuberculosis into the bronchioles; secondly, by extension from a bronchial gland to the parenchyma of the lung, this being specially associated with or following an attack of some acute infective fever, such as measles, scarlet fever, or diphtheria; by extension upwards from the abdomen, by the diaphragm to the bronchial glands and then to the lungs; by extension downwards from the glands of the neck directly to the pleura and then to the apex of the lung; and finally, by a general infection by the circulating blood, as in acute miliary tuberculosis.

M. ROBIN believed rather in a tissue or "organ" predisposition, though he agreed entirely with the signs of predisposition given by Professor Landouzy. He laid special stress on the marked respiratory changes that occurred not only in tuberculosis but in other acute diseases.

M. RENON, in connexion with these signs or "stigmata," wished to draw attention to the low arterial tension observed in those predisposed to tuberculosis. He also wished to point out that the question of pigmentation was of the greater importance from the fact, as had been pointed out, that in cases where recovery occurred pigmentation was both rapid and complete, whilst in those that succumbed such pigmentation did not occur at all readily.

M. PIERY agreed very largely with Professor Calmette that the offspring of tuberculous parents were undoubtedly specially liable to tuberculosis and that the types of the disease in these patients were very varied. He thought, however, that a certain proportion of such offspring were actually immune, and that though immune to a grave tuberculosis they nevertheless were just the types in which the so-called stigmata of hereditary predisposition were present. Moreover, he believed with Professor Calmette, that the patients supposed to have these stigmata of the hereditary susceptibility were already suffering from the disease.

There seemed to be, amongst the other speakers, a consensus of opinion that small numbers of non-virulent tubercle bacilli taken into the alimentary canal might in certain cases act as an immunising agent, but that in larger numbers and in virulent forms they might set up typical tuberculous lesions, especially in susceptible animals. In fact, it appeared to be the opinion of some of the speakers that both immunity and predisposition might arise from the same cause, that the bacilli might, in the one case, set up a kind of negative phase or predisposition, in the other a positive phase or immunity, and that until the conditions under which these occurred had been settled it was difficult to determine the part played by heredity.

Dr. C. THEODORE WILLIAMS insisted upon the importance of predisposition and on the wisdom of trying to ascertain the conditions of the human system which caused disposition to tubercle and, conversely, those which conferred immunity from tubercle. Analysing 1000 cases of consumption that occurred in the upper classes he found that the age of attack was earlier amongst females than amongst males, and that amongst males affected by hereditary predisposition it was earlier by three years than among those free from hereditary predisposition and in females by six and a half years. Further, on analysing 400 cases of consumption taken from the out-patients of the Brompton Hospital he found that his earlier conclusion as regards the age of attack being hastened on by family predisposition was confirmed, but here the relative influence on the two sexes differed greatly from what was noted in the richer classes. Among the out-patients the age of attack was about the same for males as for females, the males being attacked earlier than among the rich, the females later. The age of attack in those free from family taint was later in both sexes, and the predisposition influence greater in the male than in the female.

One or two of the later speakers were of opinion that although the points raised in this discussion were of undoubted interest, and of course of great importance to the individual, it was perhaps inadvisable to lay much stress on this question of predisposition, except in so far as it pointed to the importance of keeping these patients out of the range of the attack of the tubercle bacillus. It was useful, of course, in both prognosis and treatment. The real campaign, however, must be carried on, and on a large scale, against the tubercle bacillus and against the conditions under which it did its work most effectively. There seemed to be some danger that the bacillus might be overshadowed in the popular mind, and it appeared to some essential that it be insisted that although the tubercle bacillus does not always set up tuberculosis no tuberculosis is ever set up without the presence of the tubercle bacillus. Were heredity to be put forward too prominently those who are dealing with the question might lose heart. At the same time, should it play any part it should involve a call to the physician to look after the building up and strengthening of his patient.

Other Discussions.

The Friday morning sitting was devoted entirely to tuberculosis in the child and in the schools, and the afternoon sitting to women's work in connexion with tuberculosis. Mrs. NATHAN RAW and Dr. J. WALKER both took part in the discussion and stated the case for England. One of the most interesting contributions made in the afternoon was that by Dr. HERMANN VON SCHRÖTTER, who spoke of the action of sunlight and high altitudes and their relation to the treatment of tuberculosis. Some of his observations on the pigmentation of the skin seemed to bear out Professor Landouzy's thesis. Dr. Schrötter believed that the pigment was formed by the cell, that it did not come directly from the blood, and that the capacity to form pigment under stimulation gave some information as to the activity and stability of the cells. He also spoke of the effect of light, especially of the ultra-violet rays, and of high altitudes upon respiration, circulation, and metabolism. Not only was tuberculosis a disease of obscurity, it was also a disease of concentration of population.

Saturday morning was devoted to the nomination of committees and to reports by the delegates from the various countries represented; from which reports it may be gathered that not only in England, Ireland, and Scotland, but in many continental countries, especially Sweden, tuberculosis was gradually being driven out.

Social Functions.

The social functions held during the Conference were almost as interesting as the scientific sederunts. The reception given by the burgomaster and the town council of Brussels in the Hôtel de Ville was as interesting from the associations of the place as from the people one met there. The annual dinner was also a great success. Amongst the congratulations and messages sent to the Conference was one from King George, dated from Balmoral Castle: "The Queen joins me in thanking you and the members for your kind telegram. We earnestly pray that successful results may attend your labours, and that a further stimulus may be given to the great international campaign that is being carried out against this terrible disease.—GEORGE, R. et I." Telegrams were also received from the Emperor of Germany, the Queen of Denmark, the Kings of Roumania, Sweden, Spain, and Norway, and from President Taft, all of them expressing keen interest in the work of the Conference. Before and after the regular meetings of the Conference excursions were made to the various Belgian sanatoriums and to other institutions in which measures are being taken to prevent the spread of, or cure cases of, tuberculosis.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Strychnine Poisoning in Liverpool.

A PROLONGED investigation by the city coroner and a jury took place on Oct. 12th into the circumstances attending the death of a man, aged 58 years, who died at his residence in the city on Sept. 20th, and on whose remains a post-mortem examination, followed by analysis, had taken place. The widow said her husband had long suffered from an affection of the eye, to which he attributed severe pains in the head, but he had thought the pains arose from brain work. The deceased had had medical advice from time to time. Latterly he had been in the habit of going for medicine to the shop of a local chemist. On the Saturday previous to his death the deceased, after complaining of pains in the stomach, obtained a draught from the chemist, and said it gave him relief. He appeared well on the following Monday,

but on returning home about 6.30 P.M. on Tuesday, he said he had "had a shocking day with his head," and he had called on the chemist who supplied him with a draught. He sat down to tea, but was shortly afterwards heard to scream. His wife inquired what was amiss, and he replied, "What has come to my head and legs?" At the deceased's request his son went for the chemist, who administered an emetic, and as the deceased continued to struggle violently he went back to his shop and fetched something in a glass. On the chemist's advice a qualified medical practitioner was called in, and while he was fetching a stomach pump and an antidote to strychnine the deceased died. The chemist deposed that he had been in business for seven years. The deceased frequently visited his shop to have prescriptions made up, and as he continued of late to complain of pains in the head the witness advised him to again consult a medical man. The deceased, however, seemed satisfied with a weakened and varied form of his own medical man's prescription made up by the witness, which consisted of a draught containing 1-40th grain of strychnine. He also was supplied with tabloids or pills which contained strychnine. In one form or other the deceased had been taking strychnine regularly for several years. If the deceased died from strychnine poisoning he must have taken more than he obtained at the shop of the witness. The deceased could have his prescriptions, which he retained, made up elsewhere, and he might have taken, in order to relieve his pain, any number of the pills, which ought only to have been administered one at a time. Mr. W. C. Williams, city and county analyst, said that he found strychnine in the stomach and liver, while there were distinct traces of strychnine in the other parts of the body subjected to analysis. The bottle containing the remnant of the draught held less strychnine in solution than the prescription, but as the draught contained an alkali, the strychnine would be precipitated and crystallised, so that it would be impossible to secure the right amount of strychnine in each dose. Hence a prescription thus made up with an alkali was extremely dangerous. The amount of strychnine found in the body was consistent with strychnine poisoning. Mr. J. E. Stott agreed with the analyst, and said that the state of health of the deceased made him an unfit subject for a powerful dose of strychnine. The coroner said there was no doubt that the deceased died from strychnine poisoning, but in all the circumstances it would be well for the jury to confine their verdict to the simple fact of poisoning elicited from the medical man and the analyst. The coroner remarked that it was evidently necessary once more to warn both the public and chemists of the danger of administering potent drugs, save on the advice of a medical man who had diagnosed the individual case. He felt he could not do better than draw public attention to the words of Mr. Justice Kennedy, who had pointed out the tendency of the poor to make the druggist into a doctor, and he warned druggists to be extremely careful, as a public duty was cast on them in supplying dangerous drugs.

Yellow Fever on a Liverpool Liner: Two Deaths on Board.

Five cases of yellow fever occurred on a Liverpool liner, which arrived in Liverpool last week, between Brazil and Portugal. One passenger and one of the crew died and were buried at sea. One patient nearing convalescence was conveyed to a Liverpool hospital for detention.

The Care of Feeble-minded Children: West Derby Guardians' New Scheme.

The West Derby board of guardians has decided to embark upon a new scheme for making provision for feeble-minded children. At its meeting on Oct. 12th it was reported that a deputation had recently visited Birmingham, and had gained much valuable information from their inspection of institutions provided by the three Poor-law unions of that city for the care of mentally defective children. The deputation had been greatly impressed with the splendid arrangements made by the Birmingham Poor-law authorities for looking after this unfortunate class of people, and in the West Derby Union they had resolved to make a start on similar lines by adapting one of the cottages at the Fazakerley Cottage Homes to this purpose. Later it was hoped to extend the scheme by providing if possible an institution such as the colony they had seen at Birmingham for epileptics and the feeble-minded. This scheme was the most important that the West Derby board of guardians had yet taken in hand, and it was hoped that the committee would not be tied down to any hard-and-fast regulations, but before any serious expenditure was entered into the board would be made aware of it. The project was heartily endorsed by the board.

Public Hygiene in St. Helens.

At the meeting of the St. Helens health committee held on Oct. 12th the town clerk said that a clause was being put into the new Parliamentary Bill prohibiting spitting in the streets by any person suffering from pulmonary tuberculosis. The corporation had already power to make a by-law to the effect that "No person shall spit on the floor, side, or wall of any public carriage or of any public hall, public waiting-room, or place of public entertainment, whether admission thereto be obtained by payment or not, or in any enclosed or covered market." It would strengthen the hands of the committee if the clause were put in the Bill. The committee agreed thereto.

Oct. 17th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Report on Ptomaine Poisoning at Wrexham.

THE medical officer of health of the Wrexham urban and rural districts (Mr. D. Llewelyn Williams) has reported upon the cases of food poisoning which occurred in Wrexham and the adjoining district in August last. On the 6th and 7th day of that month about 100 persons were suddenly attacked with acute intestinal symptoms, including abdominal pain, vomiting, and diarrhœa, and in some cases there was collapse. Five of the patients died. It was ascertained that all those attacked had eaten a portion of pork pies purchased at one particular shop. Samples of these pies have been examined in the bacteriological laboratory of the Royal Institute of Public Health, and Professor W. R. Smith has reported that there was obtained from them by direct cultivation an organism which both from its varied cultural characteristics and its agglutination results was undoubtedly either the paratyphoid bacillus or the bacillus enteritidis of Gaertner. The same organism was also found in the viscera of one of the patients whose illness terminated fatally, and in the blood of three persons who were in close attendance on this patient and who were attacked with symptoms similar to those in the earlier cases. The organism was also found in the fæces of a man who worked in the shop in which the pies were made. A search for metallic substances in the pies gave negative result.

Cardiff Tuberculosis Dispensary.

A scheme for the voluntary notification of phthisis has been in force in Cardiff for some time, and efforts in other directions have been made to lessen the incidence of the disease. On Oct. 2nd there was opened a municipal dispensary for the treatment of tuberculous patients. It is situated in the basement of the City Hall, where there have been set aside a waiting-room, a consulting room, a weighing room, and a dispensing room. Already some 50 patients have attended, most of them being residents in Cardiff, but a few have come from the adjoining rural districts. The institution is open from 6 to 8 on the evenings of Monday, Wednesday, and Friday, and is under the charge of the assistant medical officer of health (Mr. E. Fairfield Thomas), who is assisted by a nurse who acts as dispenser. Every effort will be made to get in touch with the early cases of consumption through the corporation health visitors.

Open-air School in Monmouthshire.

Early in the present year the Monmouthshire education committee erected an open-air school with accommodation for 40 children at Aberbargoed in the Rhymney valley. It is situated on the side of the hill at an elevation of 700 feet above sea level. In the month of March children who were anæmic or debilitated and who were likely to benefit by the change were selected from the lower standards in the neighbouring schools. After attending the school for several months a marked change has been noticed in them, and the head teacher has reported that they now show an eagerness to join in games where hitherto they had preferred the shelter

of the school walls, and there is a gradual displacement of shyness or of indifference for a brighter and more cheerful countenance. The school curriculum has been modified so that the lessons are shorter, and rambles are taken for nature studies. Twice a day, at 11 A.M. and 3 P.M., there is an interval of five minutes when each child has a glass of milk, most of the parents contributing towards the expenditure involved.

Oct. 18th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

New Clinical Medicine Laboratory of Edinburgh Royal Infirmary.

ON Oct. 13th Sir Thomas Clifford Allbutt, Regius Professor of Medicine, University of Cambridge, formally opened the new laboratory of clinical medicine of the Royal Infirmary, Edinburgh. The ceremony took place in the large theatre of the infirmary. Professor Rankine, in the absence of the Lord Provost, presided. Those present included managers of the infirmary, the Principal and professors of the University, staff of the infirmary, and general public. At the outset Dr. George A. Gibson, with whom originated the idea, explained that through the extreme generosity of an anonymous donor a considerable sum of money had been placed at his disposal for the establishment of a fully equipped clinical laboratory, fitted with the latest apparatus for the study of the phenomena of the heart and circulation and for furnishing graphic records of these phenomena, and with the most recent appliances for the use of the X rays. In declaring the laboratory open, Sir Clifford Allbutt deprecated the tendency to dissociate pathology and clinical medicine, and welcomed such a laboratory as a step towards the integration of pathological research with clinical medicine. Pathology, speaking broadly, was merely one side of medicine, and nothing but evil and arrested progress could result from their separation. The pursuit of medicine, of all callings in life, was the most difficult. Medicine was not an exact science; our knowledge of it was constantly being added to, and the acquisition of this knowledge at all times presented very considerable difficulties, and new facts were only acquired gradually and laboriously. Such a laboratory as was now being added to the infirmary formed one of the means for acquiring such fresh knowledge, and so helped further to forward treatment and relieve suffering. The managers of the great hospitals in the kingdom, he felt sure, were beginning to see that many of these investigations which might seem to them fanciful or merely academic had enormously enlarged medical knowledge within the past few years. These investigations were not completed, but were constantly being added to, resulting in very great benefits to the sick with whom they had to deal. The apparatus that had been put down in the new laboratory recorded those electrical changes in muscle that were proving to be of the greatest importance in investigating the state of the heart. They had for the first time some definite means of ascertaining precisely the functional value of its muscle. After the opening ceremony the company proceeded to inspect the new laboratory. The infirmary managers have provided two rooms on the medical side of the infirmary and close to the medical wards, where patients can be readily conveyed for observation and treatment. In one room there has been installed a powerful apparatus for the screen examination by X rays of various internal diseases. It is so fitted up as to afford perfect security to the patient and observers from any injury by exposure to the rays, and has attached the most modern appliances for moving the patient into convenient positions for examination with the least possible discomfort. The other room contains various instruments for obtaining graphic records of the movements of the heart, a recording galvanometer that registers the electric currents produced by each beat of the heart, various forms of kymographs for the registration of pulsations and other movements which cannot be studied accurately except by graphic methods, and an instrument for the study of small changes in electric potential in living organs. There are also a number of appliances for the study of blood pressure. In addition, in the clinical medicine theatre, there has been fitted up an elaborate Leitz projection lantern for demonstrating microscopic specimens, solid objects, and diagrams, as well as ordinary lantern slides.

Edinburgh Royal Medical Society.

The 174th session of this society was opened on Oct. 15th by Sir Clifford Allbutt. He addressed the students on blood pressure and arterial disease. He first of all traced our knowledge of the subject from the introduction of instrumental means of investigation. He then discussed the production of arterial disease and its relationship to Bright's disease, pointing out the necessity for clearly distinguishing and separating the two. He showed how abnormal blood pressure in course of time, and as the result of peripheral constriction or resistance, produced definite and permanent changes in the arteries. Many other causes might have the same effect. But, on the other hand, elevated blood pressure did not necessarily follow arterial disease. Many cases of calcareous degeneration of arteries showed little or no elevation of blood pressure. Finally, he discussed the condition of elevated blood pressure, which he has called hyperpiesis, pointing out that it was permanently curable, but that it might and did recur, and if it recurred often or was untreated from the start it ultimately ended in arterio-sclerosis. Along with suitable dietetic restrictions he considered calomel the effective therapeutic measure for the treatment of the condition.

Death of Dr. D. H. Stirling, Perth.

Dr. David Halket Stirling, one of the oldest members of the medical profession in Perth, died on Oct. 14th, at his residence, Kinnoull Cottage, Perth. The deceased gentleman, who was in his eighty-first year, was born at Guildtoun, near Perth, and studied medicine at Edinburgh University and in Paris and Vienna. He started practice in Perth about 55 years ago. Dr. Stirling was very well known and highly respected by the citizens of Perth and district.

Aberdeen Parish Council Medical Officership.

The Aberdeen parish council met on Oct. 11th. The inspector said that there were no applications for the post of poorhouse visiting medical officer. In reference to the question asked at a previous meeting as to the power of the parish council to dismiss its resident medical officer, a telegram had been received from the Local Government Board. It said: "The poorhouse medical officer cannot be dismissed without the sanction of the Local Government Board." After much discussion it was finally decided to leave the question of the visiting medical officership to the next council. At the same meeting a letter was read from Dr. W. J. Byres, who recently held the office of poorhouse visiting medical officer, in which he complained of a remark made by one of the council at a previous meeting in reference to his report. The chairman pointed out that the rest of the council did not entertain the same views as the member who had made the remark, and the letter was allowed to lie on the table. A list of unvaccinated children was submitted, and the chairman stated that there were some 19 objectors who had not lodged objections with the registrars in time. The Local Government Board was anxious to prosecute in those cases. It was decided by 16 votes to 15 not to prosecute.

Honour to Professor Ogston.

The ceremony of presenting the portraits of Emeritus Professor Alexander Ogston took place in the Picture Gallery of Marischal College, Aberdeen, on the afternoon of Oct. 14th, one portrait being handed over to the University, the other being a gift to Professor Ogston's family. The ceremony was largely attended by the medical profession; there were also representatives of the Senatus and University Court and of the University, and many others. The portraits have been painted by Mr. Fiddes Watt, A.R.S.A. Professor Findlay presided, and said that when Professor Ogston retired from the chair of surgery last year it seemed to some of his old pupils and professional friends that it would be a fitting thing to promote a memorial of his long and distinguished career as a teacher of surgery, and accordingly, in May last, a committee was formed to carry out this object. The proposal was cordially responded to in all quarters. The Right Hon. Robert Farquharson of Finzean presented the first portrait to the University, and in the absence of Principal George Adam Smith, Professor Matthew Hay accepted it on behalf of the University, in the course of his remarks saying that no one had done more than Professor

Ogston to increase the educational efficiency of the University and to advance its reputation throughout the world. "We are all of us—teacher, graduate, and student alike—proud of Professor Ogston. He is one of our own, the son of a distinguished professor of this University, a brilliant student in its medical faculty, and, finally, the eminent occupant of its chair of surgery." Dr. Farquharson afterwards presented Professor Ogston with the second portrait. Professor Ogston, in the course of his reply, stated how highly he valued the appreciation of his colleagues and pupils. He had been given a place in the Pantheon of the University, which, however little he might deserve, he most deeply appreciated. He remarked upon his close connexion with the University, for at the house which stood where the chemistry laboratory of the University now stands, his first lessons in walking were obtained in the quadrangle of Marischal College. Graduating in medicine and surgery when two days under age, he began at the age of 22 the connexion with the medical school which had not hitherto been interrupted, unless interrupted now. "All that I have I owe to the College and the University, and no one can wonder that my love for it should be so deep, and hence the value of what you have conferred upon me must be tenfold greater than it otherwise would have been." Professor J. Marnoch proposed a vote of thanks to the committee and to Dr. J. Mackenzie Booth, who had spared no effort to achieve success. Dr. Mackenzie Booth replied, and intimated that a photogravure of the University portrait was being prepared and was to be sent, with a *résumé* of the proceedings on this occasion and a list of subscribers, to all those who contributed to the testimonial. He added that a considerable surplus of money was to be handed to the University to provide an annual prize of instruments for the best student in the senior section of the surgery class, to perpetuate Professor Ogston's memory in future generations of the students of his Alma Mater.

Royal Aberdeen Hospital for Sick Children.

A special appeal has been issued by the directors of this hospital for funds to provide a larger building on a new site. The new building will require to contain at the very least 100 beds, and it is estimated that the erection of such a building, capable of ready extension for future requirements, on a suitable site will cost from £30,000 to £35,000. Her Majesty the Queen has been graciously pleased to become patroness of the institution, and it is considered that the new hospital building will form an appropriate and fitting memorial to the late King.

Oct. 16th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Physicians of Ireland.

Dr. J. Hawtrey Benson has been elected President of the College for the ensuing year.

Royal Academy of Medicine in Ireland.

The annual meeting of the Royal Academy of Medicine in Ireland was held on Oct. 14th at the Royal College of Physicians. The report stated that the number of Fellows was 184, of Members 22, and of Associates 9. The credit balance at the bank was £255 9*s.* 7*d.* The annual elections were held, special interest being taken in the election for the general secretaryship consequent on the resignation of Dr. James Craig. No less than six candidates offered themselves, of whom Professor J. A. Scott was elected. The other elections resulted as follows:—Secretary for Foreign Correspondence: Sir John Moore. Medical Section: President, Sir John Moore. Surgical Section: President, Mr. R. H. Woods, P.R.C.S.I. Obstetrical Section: President, Dr. H. Jellett. Pathological Section: President, Dr. A. H. Benson. Section of Anatomy and Physiology: President, Dr. E. P. McLoughlin. Section of State Medicine: President, Dr. E. J. McWeeney. A resolution was adopted that a quinquennial enumeration of the population is most desirable, and recommending the Academy to make representations to this effect "to the Government, and to invite the assistance of the Irish Universities, the Royal Colleges, the Irish Medical Association, and such bodies as the Royal Dublin Society and the Dublin Sanitary Association in attempting to attain so important an object."

Memorial to Dr. Conolly Norman.

Last Tuesday being St. Luke's Day the memorial tablet to the late Dr. Conolly Norman erected in St. Patrick's Cathedral was unveiled by His Excellency the Lord Lieutenant. The memorial, which is erected in the north choir aisle, consists of a bronze relief portrait of Dr. Norman by Mr. J. M. Carré, set in a niche of Bath stone designed by the late Sir Thomas Drew. The plaque is surmounted by a heraldic device in bronze, also by Mr. Carré; while the lower panel of the niche contains a bronze plate bearing the inscription. Later in the afternoon of the same day a deputation of the subscribers presented to the Royal College of Physicians a portrait in oils of Dr. Norman.

Opening of New Dispensaries at Jervis-street Hospital.

Lord Aberdeen attended at Jervis-street Hospital last Monday to declare the new dispensaries open. The Charitable Infirmary, Jervis-street, is the oldest of the general hospitals of Dublin. For some years the out-patient rooms, which were then situated in the basement, were recognised to be inadequate, and the managing committee at length found itself able to undertake rebuilding, with the result that a fine suite has been erected consisting of large, airy reception-rooms for medical and surgical cases and a number of smaller rooms for dealing with special conditions. Some of the funds have been provided by the Pembroke Charities Trustees, but the remainder is still to seek.

Accident to Mr. R. L. Swan.

A serious accident occurred last Saturday to Mr. R. L. Swan, surgeon to Dr. Steevens' Hospital, and ex-President of the Royal College of Surgeons in Ireland. While cycling in the streets of Dublin he fell off his machine, and the wheel of a van went over his chest, breaking three ribs. His many friends will hear with pleasure that his progress has been satisfactory.

Irish County Asylums and the Reduced Grants.

The greatest dissatisfaction has arisen throughout Ireland in regard to the reduced Treasury capitation grants to the county asylums. For instance, in County Cavan the deficit, as compared with the estimate, is £1631 13*s.* 9*d.*; in County Monaghan, the deficit is £1360 2*s.* 9*d.*; in County Sligo, the deficit is £1187 5*s.*; and £996 10*s.* 2*d.* in County Leitrim. In County Tyrone the reduction is £1728; in County Derry, £1100; and in County Fermanagh it is £770 0*s.* 8*d.* It would appear that in the past the Treasury has given a capitation grant of 4*s.* per week to Irish asylums, which was met by an Imperial grant of £79,000 per annum, together with licence duties—not whisky duties. It is strange there is no reduction in this grant towards England and Scotland. It would seem the grant in Ireland has been reduced on account of the increased expenditure in asylums which the county councils made on the faith of getting this capitation allowance. The inadequacy of local taxation to meet its liabilities is said to be due to causes over which the local authorities have no control, such as (1) increase of lunacy, (2) falling-off of revenues from sources of income on that account; (3) a large portion of expenditure on asylums is under the head of repayment of loans which were borrowed under the direction of the Board of Control with the consent of the local authorities; (4) increased cost of upkeep through general rise of market prices; and (5) most of the inmates of asylums are dangerous lunatics committed by magistrates whose admission is as compulsory on committees of lunatic asylums as on governors of jails. Very strong resolutions are being passed by the asylum boards all over Ireland, protesting against this action of the Treasury, which the Chief Secretary will have to explain when Parliament opens. It is said the deficit in Belfast will be £2000, and that there will this year be entailed on the ratepayers of Ireland a burden which is estimated as £62,000 in consequence of the falling short of what is known as the local taxation account—that is to say, the proceeds of licences and of the liquor duties—upon which the charges to pay on each patient in Irish asylums one-half the cost of maintenance, or 4*s.* in the £, were laid. Under the Local Government Act, not only this capitation grant but half the salaries of medical officers and certain other local grants were charged upon the local taxation fund derived from licences and from liquor taxes. It is clear some arrangement should have been made to anticipate this shrinkage of

revenue. The Chief Secretary is to meet a deputation on Oct. 24th in reference to the matter.

The King Edward VII. Memorial in Belfast.

The sum now subscribed for the King Edward VII. Memorial (which is to take the form of an additional block to the Royal Victoria Hospital) amounts to £13,046.

Oct. 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Congress of Surgery.

THE first subject of discussion at the recent Congress of Surgery was the Surgical Treatment of Exophthalmic Goitre. It was introduced by M. Delore, who dealt chiefly with the various methods of operating, and by M. Lenormand, who described the indications for surgical treatment and the results that had been obtained. Sir Victor Horsley explained the views of English surgeons on several points of the question. He said that in the majority of cases medical treatment was insufficient. When a patient had been under observation for six weeks, and had undergone medical treatment without benefit, an operation might be undertaken. M. Forgue of Montpellier said that in his opinion an operation ought not to be too long delayed. M. Girard of Geneva spoke only on the application of thyroid ligatures previous to a more extensive operation. M. Ceci of Pisa advocated local anæsthesia in operations on the thyroid gland. The subsequent speakers were M. Tavel, M. Doyen, M. Jonnesco, M. Alessandri, M. Morestin, M. Bérard, and M. Van Stockum, the latter of whom was emphatic as to the danger of general anæsthesia, and said that he always preferred local anæsthesia in these operations. M. Broeckaert of Gand said that in Belgium operations for exophthalmic goitre were not common. M. Lucas-Championnière spoke of cerebral decompression by opening the cranium. He said that his numerous operations had led him to think that this valuable procedure had not been sufficiently taken advantage of. The operation which he performed was a very simple one and not serious; it consisted in trephining, enlarging the aperture with a gouge, and incising the dura mater. M. Girard described the operative treatment of serous meningitis. The next subject of discussion was the Surgical Treatment of Duodenal Ulcer. It was introduced by M. Ricard and M. Pauchet, who confined their remarks to the primary ulcer of the duodenum, which was the classic form of the disease, whereas the secondary ulcer presented no clinical interest. The diagnostic points were the pain and the previous history of the illness. The most frequent complication was perforation, which might be either acute, subacute, or chronic. The treatment of perforation consisted in lateral laparotomy and suture of the ulcer in two layers with drainage of the subhepatic space and the pouch of Douglas. An operation was the only efficacious treatment of duodenal ulcer, gastroenterostomy being the most advisable procedure. M. Ricard and M. Pauchet concluded by saying that the French statistics of these operations did not show brilliant results, probably because the operators have not had much experience of duodenal surgery. M. Tédenat, M. Hartmann, M. Jonnesco, M. Delaunay, M. Lardennois, M. Monprofit, and M. Boeckel explained their views and mentioned the results of their operations. M. Jeannel introduced a discussion on the Immediate and Remote Effects of Cutting Operations in the Treatment of Varix of the Lower Limb, and the topic was continued by M. Mauclaire, who described the treatment of the principal complications of varix—namely, varicose ulcers, phlebitis, and rupture of the enlarged veins. M. Ceci, M. Willems Boeckel, M. Villar, M. Tavel, M. Bérard, M. Alessandri, M. Reymond, M. Sabadini, M. Lardennois, M. Paul Delbet, M. Viannay, M. Rémy, M. Durand, and M. Poussié also took part in the discussion.

Poisoning by Decoction of Poppy-heads.

At a meeting of the Society of Legal Medicine held on Oct. 10th Dr. Dutilleul and M. Bonn, a chemist, presented a communication in which they stated that the employment of a decoction of poppy-heads was very common in the north of France and that death was unfortunately sometimes due to this cause. They reported a case occurring in the vicinity of Lille in which an infant aged 4 months had in the course of eight days taken an infusion of three poppy-heads in a litre of water. The child died and the necropsy showed several of the ordinary indications of opium poisoning but no evidence of organic disease to which the fatal issue might be attributed. On analysis the viscera were found to contain a dangerously large amount of alkaloid. In view of the risks attendant on this method of treatment Dr. Dutilleul and M. Bonn expressed surprise that poppy-heads should be freely sold not only by druggists but even herbalists and grocers, and they recommended the introduction of restrictions.

Treatment of Tuberculosis on the Mediterranean Coast.

At a meeting of the Academy of Medicine, held on Oct. 11th, M. Debove read a report on a communication by M. Révillet showing the results of the treatment of infantile tuberculosis in the Dollfuss Sanatorium at Cannes on the Mediterranean. In this institution children from Geneva suffering from tuberculous disease of the bones, joints, and glands are received during winter. Before leaving Switzerland they are examined by a commission of which M. d'Espine is the president, and they are again examined on their return. The commission has found that excellent results have been obtained from the treatment which includes daily sea-bathing and heliotherapy.

Granular Conjunctivitis.

An epidemic of granular conjunctivitis which has prevailed for some months in a certain *quartier* of Paris is an obvious danger to the public health. This condition, although extremely contagious and difficult to treat, is not included among the diseases notification of which is compulsory. The municipal councillors of several arrondissements of Paris recognise that the matter is serious and will question the prefect of police on the subject. Dr. Dubief, principal inspector of epidemic diseases in the department of the Seine, is also announced to present a report on the circumstances. The majority of the patients are Jews and Armenians coming from Syria, Judea, and Egypt. Deportation of the patients would be the most efficacious measure but would be rather troublesome, as they are from 250 to 300 in number, and it would also be necessary to prevent them from returning. In this difficulty the best courses would be (1) to compel all patients of foreign origin and under the supervision of the police to undergo regular treatment under pain of deportation, and (2) to prevent the spread of the contagion by giving some instruction in hygiene to all the French people who are brought into contact with the patients through being employed in the lodging-houses where they live.

Oct. 18th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Malaria Prevention in the United Provinces.

DURING the course of last year instructions were issued from the office of the Sanitary Commissioner, United Provinces, to the municipal boards through commissioners of divisions regarding the treatment of tanks and other water surfaces with kerosine oil with a view to the reduction of malaria. These instructions have been carried out in several localities, while in certain others surface drainage has recently been improved and insanitary pits and hollows have been filled up with a view of diminishing the breeding places of mosquitoes. Quinine has also been distributed gratuitously in many districts. As the fish known as "millions" are reported to be very voracious and to feed on the eggs, larvæ and pupæ of mosquitoes to such an extent as to render it impossible for these latter to breed in the waters frequented by the fish, a supply of them was obtained in November last from England through the kindness of Lieutenant-Colonel J. J. Pratt, I.M.S., and Major W. Selby, I.M.S. They are for the present being kept in the Zoological Gardens, Calcutta, and are to be experimented with as soon as they have increased to sufficient numbers.

Beri-beri and Rice.

The conclusions now so generally accepted that beri-beri is a disorder of nutrition associated usually with a diet of which white, or "over-milled," rice is the principal constituent will probably have an important effect on the rice

trade, and rice millers will have to modify certain of their processes. According to a letter from the Government of Burma to the Burma Chamber of Commerce, the Hong-Kong administration is to consider measures for the exclusion of polished rice from their territories, and it is not unlikely that other governments will be inclined to a similar policy. The Burma Chamber of Commerce is making inquiries on the subject, so that rice millers may be warned to take steps in time to prevent the large rice export trade of the province being injured.

A Pasteur Institute for Bombay.

The Government of Bombay in a note to the municipal Commissioners and the chairman of the Bombay Port Trust, in favour of the establishment of a Pasteur Institute in Bombay, to be located at Parel, states that the cost of such institute would be a legitimate charge to municipal revenues. As, however, the Parel Laboratory as a Government institution affords facilities for the establishment of the proposed branch on an economical scale, and as it would be for the treatment of patients coming from outside of Bombay, it is thought that it would be inequitable to expect the municipality to meet the whole of the expenditure incurred at Parel. The services of the superior medical staff already employed and trained at the laboratory will be available for bacteriological and other work in connexion with the antirabic treatment, thus effecting considerable reduction in the expenses of the institute. The services of the clerical and other establishments at the laboratory will also be utilised without much extra cost for the work of the proposed branch. It is estimated that the maintenance of the branch institute in conjunction with the Parel Laboratory will cost from a minimum of Rs. 16,000 to a maximum of Rs. 31,000 a year, according to the grade of medical staff employed. The average may be taken as about Rs. 20,000 a year. The government proposes to lay the scheme before other local bodies in Bombay and the Mofussil, and the benevolent public will also be asked to subscribe.

The National Medical College of India.

In response to invitations issued by the President of the Board of Governors of the National Medical College of India to meet Sir Lawrence Jenkins, Chief Justice of Bengal, a large and representative gathering assembled at the College Hall, Calcutta, recently. Sir Lawrence Jenkins, on arrival, inspected the college and hospital attached to the institution, and was favourably impressed by all he saw. The superintendent of the college then read an address of welcome to the Chief Justice, in the course of which he said that the college was intended to be an auxiliary to official colleges. He said that a late Lieutenant-Governor, referring to the institution, stated he was very strongly in favour of a medical institution apart from the official medical college. Sir Lawrence Jenkins was convinced a separate non-official medical institution will lead to much better organisation of medical teaching in Calcutta. Their efforts had not been fruitless; their scholars hailed from all parts of India. Students were carrying out a noble mission, for they go right into the interior and carry into remote Mofussil villages the blessings of modern science. Their professors were men who have had a brilliant training in Europe under teachers of world-wide fame. The locally educated professors were also men of high attainments, with special knowledge in their respective departments. All of them are giving their gratuitous services to the institution, receiving nothing more than mere *gharri* (carriage) hire. The school attached to the college was making itself greatly useful. The out-door department gave relief to about 20,000 patients yearly. The indoor department was very much in need of additional accommodation. Pressure on the beds had been so great that they had been obliged to refuse many applications for admission. They were also endeavouring to revive the ancient Ayurvedic system of medicine on a modern basis by infusing into it the elements of modern scientific treatment. An address was then presented to the Maharaja of Cossimbazar for his interest in all movements and objects for the well-being of the citizens. A suitable reply was made. Sir Lawrence Jenkins next announced that the Maharaja of Cossimbazar had promised a donation of Rs.6000 and the Maharaja of Darbhanga Rs. 2000 towards the erection of a suitable building for the college.

The St. John Ambulance Association.

An account of the proceedings at the annual meeting in Simla of the Indian branch of the St. John Ambulance Association has just been issued. The report presented to the meeting by the honorary secretary, Major R. J. Blackham, R.A.M.C., bears witness to the phenomenal progress made by the branch during the past year. In March of the previous year there were, even on paper, but nine centres of the association. Now there are seven strong provincial and six State centres, besides various district centres, a Bengal coalfields centre, and centres on nearly all the chief Indian railways. In almost every direction, and especially on the railways, due in this case largely to the great interest displayed in the work of the association by Sir Trevredyn Wynne, chairman of the Railway Board, Major Blackham finds cause for much congratulation at the record of progress made. In fact, to quote his own words, "The work of the Association is now being carried on enthusiastically in all parts of this vast Empire, and there is every reason to hope that in a very few years there will hardly be a hamlet from Jamrud to Trichinopoly, and from Bombay to Bhamo, where its courses of instruction will not be known and appreciated."

Sept. 15th.

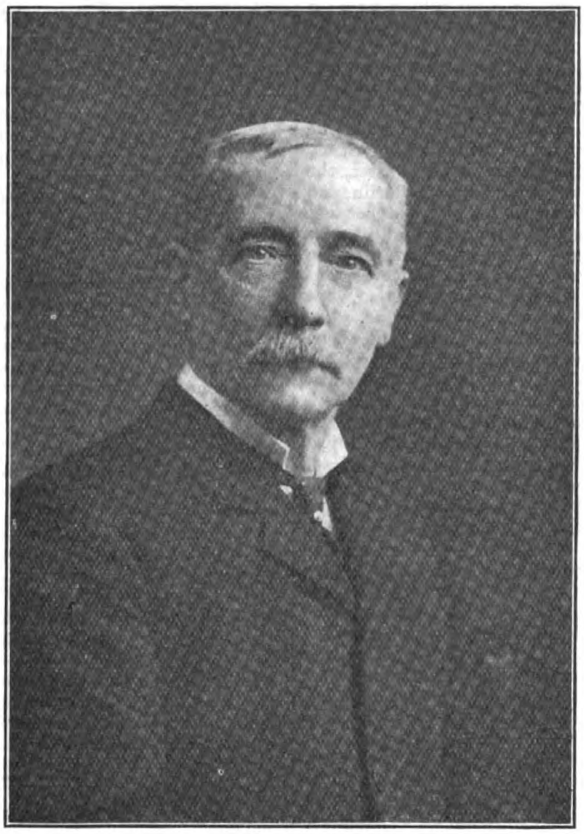
AUSTRALASIAN MEDICAL CONGRESS.—The ninth session of this Congress will be held in Sydney during September, 1911, under the Presidency of Mr. F. Antill Pockley. The session will commence on Monday, Sept. 18th, and end on Saturday, Sept. 23rd. The Senate of the University of Sydney has kindly granted the use of its buildings and grounds, and the Government of New South Wales has given its countenance and support to the Congress. The following are officers of Congress:—President: Dr. F. Antill Pockley. Treasurer: Dr. S. H. MacCulloch. General Secretary: Dr. Arthur Palmer. Associate Secretary: Mr. A. J. Brady. The following are Vice-Presidents: Dr. J. C. Verco, Sir P. Sydney Jones, Dr. F. C. Batchelor, Hon. G. H. Butler, Professor E. C. Stirling, C.M.G., Professor H. B. Allen, Surgeon-General W. D. C. Williams, C.B., Fleet-Surgeon V. Gunson Thorpe, Fleet-Surgeon F. Falconer Hall. The executive committee is composed as follows: President, Past President, General Secretary, Associate Secretary, Treasurer, Dr. G. H. Abbott, Dr. W. G. Armstrong, Dr. Richard Arthur, Dr. Fourness Barrington, Dr. H. G. Chapman, Dr. C. B. Clubbe, Dr. W. H. Crago, Dr. Gordon Craig, Dr. J. A. Dick, Dr. T. Fiaschi, Dr. J. Foreman, Dr. J. Macdonald Gill, Dr. Sinclair Gillies, Sir J. Graham, Dr. H. C. Hinder, Dr. A. Jarvie Hood, Dr. J. L. T. Isbister, Dr. C. H. E. Lawes, Dr. H. L. Maitland, Dr. Odillo Maher, Dr. A. E. Mills, Dr. W. McMurray, Hon. Dr. J. B. Nash, Dr. Russell Nolan, Dr. R. Paton, Dr. Clarence Read, Dr. G. E. Rennie, Dr. Reuter E. Roth, Dr. Eric Sinclair, Dr. R. Scot Skirving, Professor Anderson Stuart, Dr. Ashburton Thompson, Dr. R. H. Todd, Professor Welsh, Professor Wilson, Dr. P. M. Wood, and Dr. Ralph Worrall. Various Sections of Congress:—1. Section of Medicine: President, Dr. W. T. Hayward (Adelaide). 2. Section of Surgery: President, Dr. G. A. Syme (Melbourne). 3. Section of Obstetrics and Gynæcology: President, Dr. G. Rothwell Adam (Melbourne). 4. Section of Anatomy, Physiology, and Pharmacology: President, Dr. E. H. Embley (Melbourne). 5. Section of Pathology, Bacteriology, and Tropical Medicine: President, Dr. Wilton W. Love (Brisbane). 6. Section of Public Health and State Medicine: President, Mr. James W. Hope (Fremantle). 7. Section of Ophthalmology: President, Dr. J. W. Barrett (Melbourne). 8. Section of Psychological Medicine and Neurology: President, Mr. W. Beattie Smith (Melbourne). 9. Section of Diseases of Children: President, Dr. A. Jeffreys Wood (Melbourne). 10. Section of Naval and Military Medicine and Surgery: President: Colonel C. S. Ryan (Melbourne). 11. Section of Dermatology, Radiology, and Medical Electricity: Presidents, Mr. H. F. Lawrence (Melbourne) and Dr. F. J. Clendinnen. 12. Section of Laryngology, Rhinology, and Otology: President, Dr. W. L. Robertson (Brisbane). The State Secretaries of Congress are Dr. Arthur Jeffreys Wood, 19, Collins-street, Melbourne; Dr. Wilton W. Love, Wickham-terrace, Brisbane; Dr. John B. Gunson, North-terrace, Adelaide; Dr. Gregory Sprott, Macquairie-street, Hobart; Dr. A. J. H. Saw, Perth, West Australia; Mr. Stanley Batchelor, Dunedin, N.Z.; and Dr. W. E. Herbert, Boulcott-street, Wellington, N.Z.

Obituary.

JOHN ANDERSON, C.I.E., M.D. ST. AND., F.R.C.P. LOND.

WE briefly announced last week the death of Dr. John Anderson, late of Harley-street, which event took place on Oct. 10th at 33, St. Charles-square, North Kensington, where he had been residing recently. The sudden occurrence of a severe hemiplegic attack in March last from the first could only have one ending, but, some two months before that ending mercifully came, death in an unexpected and rapid form removed his wife. The whole tragedy has aroused the painful interest and deep sympathy of the medical profession; this it would have done in any event, but in the case of a man so well known and beloved as the late Dr. Anderson the feeling both inside and outside his own profession has been very widespread.

John Anderson was born in 1840 and received his medical education at the Royal Infirmary, Manchester, where he was clinical clerk and dresser to the late Mr. Watson Beevor, one of the senior surgeons, a man well known in those days in Lancashire as a brilliant surgeon and operator. It was probably then that Anderson first acquired the facility as a deft manipulator which he always retained and which made him at one time a very neat and dexterous surgeon. At the Manchester Infirmary he made the acquaintance of Dr. (afterwards Sir) William Roberts, the lecturer on medicine at that school, and this subsequently ripened into a firm friendship during the time that Sir William Roberts and Anderson were both residing in London before the former's death. In 1861 and 1862 Anderson obtained what were the usual qualifications of that time, the M.R.C.S. Eng. and L.S.A. Lond., and was appointed successively house surgeon and house physician at the Manchester Royal Infirmary. Entering the Army Medical Service in 1864 he served for many years in India in the Royal Artillery and was in the "Chestnut Troop of Horse Artillery" until the regimental system was abolished. Throughout his career in India, and, indeed, up to the time of his last and fatal illness, Anderson enjoyed perfect health, and his courage and activity, mental and physical, were due to this fact and to his optimistic nature. These qualities fitted him for the ofttimes trying duties and vicissitudes of Indian army life, and he was indefatigable in rendering medical aid in the presence of epidemic disease. On his return home he served in Edinburgh and at Camberley in connexion with the Royal Military College. Whilst at the former station he availed himself, as far as practicable, of the great advantages of Edinburgh University, studied hard there, and went through a course of practical anatomy. He returned to India in a dignified and responsible capacity, for he was specially selected by the late Marquis of Ripon for his personal staff. He accompanied Lord Ripon to India and returned with him to England at the end of his Viceroyalty, having been previously made a Companion of the Indian Empire. He was greatly esteemed by the Viceroy and his staff, and his medical opinion was much sought after by patients of every class.



JOHN ANDERSON, M.D. ST. ANDREWS, F.R.C.P. LOND., C.I.E.

He retired from the Army in 1885, with the rank of Brigade-Surgeon, and began practice in London, becoming physician to the *Dreadnought* Hospital for Seamen and to King Edward's Hospital for Officers, and was for many years member of the Appeal Board at the War Office. He was also appointed lecturer on tropical diseases at St. Mary's Hospital. When he decided to commence practice in London he graduated in medicine at the University of St. Andrews and took the Membership of the Royal College of Physicians of London, of which corporation he was later made a Fellow. At first he practised in Gloucester-place, but soon afterwards moved to 9, Harley-street. His great and varied experience in India made him from the beginning a recognised authority on tropical disease. But it would be a great mistake to regard his practice as having been limited to that direction, for it was really of a very varied character. He was found by those who called him in to be so helpful in diagnosis and so resourceful in his suggestions for treatment that he rapidly passed from the position of a specialist in tropical medicine to that of a general consultant physician. He was transparently loyal in all his dealings, and possessed the happy knack of inspiring confidence, so that without a trace of insincerity he would turn even chance acquaintances into personal friends. It must have been the recognition of his sterling qualities of character as well as of his medical knowledge that led so many of the medical leaders of the day to seek his advice and help when they themselves or those near to them were sick, and all of them honoured him with their friendship. He was essentially a working and practical man, and made but few contributions to medical literature, but his communications to our columns were sound clinical observations.

"About 48 hours prior to the date (in March last) of his fatal illness," one of the oldest and most intimate of his many friends writes to us: "Anderson seemed at his best. He made a long visit to my house, and I had never seen him in better form, health, and spirits than on that occasion. His talk was on literary and scientific as well as on professional and political topics, and he expressed himself in a genial and outspoken way and with a clearness that was delightful to listen to at the time, and calculated, like all close intercourse with him, to leave a fragrant recollection in the consciousness of his listener. For there was nothing mean in thought and deed about him. What he gave he gave with an open palm, and

> 'With liberal hand and bounteous heart
> Shared all his little fortune could impart.'"

The impression of geniality, generosity, and ability conveyed by the words which we have quoted sum up the man, and show why his loss has been so widely felt.

He was attacked early in March last with a grave form of paralysis (right hemiplegia and aphasia) from which he never recovered, and died, as already said, on the night of Oct. 10th. He had throughout his illness the unremitting attention of his old friend and fellow student at the Royal Infirmary, Manchester, Dr. Alfred Clarke, late of the Royal Military College, Sandhurst, and that of Sir William Allchin, Surgeon-General Marston, and others. Dr. Anderson married, in 1877, Miss Jessie Usher Dunlop, who died very suddenly on August 10th last. He leaves four children, to whom we offer our deep sympathy.

PROFESSOR ERNST VON LEYDEN.

THE whole medical profession has to mourn the death of Dr. Ernst von Leyden, formerly professor of clinical medicine and director of the First Medical Clinic of the University of Berlin.

Professor von Leyden was born in 1832 at Danzic, his father being a high official in the Government service, and at the early age of 17 years he became a medical student in the Army Medical College at Berlin, where he took the degree of M.D., and passed the State examination in 1853. He then served as a military surgeon in the army till, in 1862, he was commissioned to take one of the assistantships at the Charité Hospital reserved to army medical officers. He in this way became an assistant to the celebrated physician, the late Professor Traube, at that time professor of clinical medicine, and the first man in Berlin to introduce modern experimental methods in clinical teaching. Professor Traube soon recognised the talents of his assistant and employed him in the most difficult clinical work. On his instigation Dr. von Leyden applied himself especially to diseases of the spinal cord. The results of his studies were his works on "The Degeneration of the Posterior Tracts of the Spinal Cord" and the "Clinic of Diseases of the Spinal Cord," which brought him much celebrity as a teacher and writer. He accordingly left the army, being called as early as 1865 to take the chair of Clinical Medicine at the University of Königsberg. He lived there till 1872, when he left Königsberg for the newly founded University of Strasburg. In 1876 he became the successor of his master, the late Professor Traube, as professor of medicine in Berlin, and held that appointment till 1907, when he resigned because of his advanced age. After his first work on spinal diseases he wrote a great many others—on bulbar paralysis, on aphasia, and on cerebral pressure. His work, however, was not confined to the diseases of the nervous system, but extended to many other departments of medicine. He found in the sputum crystals named after the celebrated French *savant*, Professor Charcot; he described subdiaphragmatic abscesses, and showed that endocarditis might be caused by Neisser's gonococcus and Fränkel's pneumococcus. He was not only a medical writer and an original observer, but a great physician, and in his clinical lectures he always laid stress on the therapeutical side of medicine. This may appear now rather common-place, but was not so at a time when the great majority of clinical teachers cultivated exact diagnosis but neglected the details of treatment.

As a physician Professor von Leyden was of European renown, and patients of every country were found in his consulting-room. Russians went in great number to consult him, and he was often called to Russia to see patients who were unable to travel. The number of his Russian patients included the late Emperor Alexander III., but he had a large *clientèle* among other reigning families also, and he was one of the physicians in attendance on the late Emperor Frederick during his last illness. At the same time he was not neglectful of the sick poor, and a great deal of his work during the later period of his life was devoted to the care of indigent tuberculous patients. It was especially by his endeavours that the sanatorium movement in Germany has been so successful and that thousands and thousands of indigent patients are now received all the year round in these institutions. He took a prominent part in schemes for the prevention of tuberculosis, and was one of the presidents of the Central Committee on Tuberculosis. At a very advanced age he began systematic study of the prevention of cancer which he believed to be of an infectious nature. A central committee having this for its object was founded and presided over by him, and dispensaries for cancerous patients were established. When he resigned his post as professor of medicine in 1907 he continued to be at the head of a cancer ward, especially created for him, in the Charité Hospital.

His faculty of being up to date, even at an age when other men have some difficulty in following new ways, was one of the principal features of his character, and therefore he became fully aware of the importance of physical and dietetic treatment. He recommended this treatment in his clinical lectures, and edited, together with his former assistant, Professor Goldscheider, the *Zeitschrift für Physicalisch-Diätetische Therapie*. A great work, "Die Deutsche Klinik am Beginn des 20. Jahrhunderts," edited by him and Dr. Klemperer, was a description of modern views and methods of clinical medicine. He was a constant opponent of excessive specialism in medicine, and when he believed that in the Berlin Medical Society clinical medicine was put somewhat in the background by the different special branches he did not hesitate to resign his membership and to found in Berlin a new society for internal medicine, of which he was the president until his death. He also was the founder, and on various occasions the chairman, of the Congress für Innere Medicin.

During his long career many and high honours were conferred on him. On the occasion of his seventieth birthday he received titular honours, and a few years ago the rank of Real Privy Councillor, with the title of Excellency, was conferred on him. He continued to be very active until last winter, when he fell on the stairs and sustained a fracture of the neck of the femur from which he did not recover. His death will be greatly deplored, not only because of his attractive personality, but also because he was a good man and a good physician.

CHARLES HANLEN GAMBLE, M.R.C.S. ENG., L.S.A., J.P.,

CONSULTING SURGEON TO THE NORTH DEVON INFIRMARY.

Mr. C. H. Gamble died recently at his residence in Barnstaple. The deceased, who was the oldest member of the medical profession in North Devon, was born in 1825, his father being the late Rev. H. Gamble, vicar of Newport, Barnstaple. He received his medical education at Guy's Hospital and qualified M.R.C.S. Eng. and L.S.A. in 1848. He shortly afterwards commenced practice at Barnstaple, joining his uncle, the late Dr. T. S. Law. Mr. Gamble practised in Barnstaple for about 60 years, and it was only quite recently that he retired from active work. He had been a member of the honorary medical staff of the North Devon Infirmary for more than 50 years. He was a magistrate for the borough and at one time was a member of the town council. Mr. Gamble was one of the first to join the Volunteer movement and was formerly surgeon-major in the North Devon Yeomanry. He took a great interest in everything connected with Barnstaple and was highly respected and esteemed by all the residents of that town. He was a staunch Churchman, and for many years churchwarden at Holy Trinity Church. Mr. Gamble celebrated his golden wedding about a year ago. He leaves two children—the Rev. H. R. Gamble, vicar of Holy Trinity, Chelsea, who was formerly mayor of Chelsea, and Mrs. James, wife of a solicitor at Barnstaple. Mr. Gamble will be much missed in North Devon, especially by the poor, to whom he was always a generous friend.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The death of the following eminent foreign medical man is announced:—Dr. Francesco Laccetti, *privat-docent* of anatomy in the University of Naples.

NEW ZEALAND.

(FROM OUR OWN CORRESPONDENT.)

Medical Registration Bill.

IN the forefront in many things, New Zealand still lags behind with respect to the law governing the registration of medical men. Many attempts have been made to remove the disabilities under which the profession labours, but democratic parliaments are somewhat fearful of what are termed close corporations. The most recent attempt to bring our law into line with that of other countries is in a great measure due to the energy and insistence of Dr. H. E. Gibbs of Wellington. The Bill, which it is hoped will be taken up by the Government, provides for the incorporation of a society to be termed the Society of Registered Medical Practitioners of New Zealand. The affairs of the society are to be managed by a board consisting of (1) one registered medical practitioner for each district to be appointed by the Governor; (2) one registered medical practitioner resident in the district elected by the practitioners in the district; (3) and one practitioner elected by the New Zealand University

Senate. The usual machinery is included for the working of the board, but Section 12, however, seems far from satisfactory. It runs as follows :—

(1) The Board may from time to time make regulations for the purpose of regulating its own procedure, and of generally carrying this Act into effect, but no such regulations shall have any effect until it is *approved* by the Government and gazetted. (2) The Governor may from time to time suspend the operation of any such regulations.

It will be seen from this that in any real conflict the power will lie in the hands of the Government. Sections 14 and 19, which deal with the erasure of offending members' names from the Register, are also far from satisfactory, but I fear that, even incomplete as they are, there will be great opposition when the Bill comes before Parliament. These sections give to the person whose name has been ordered to be removed from the Register power of appeal to the Supreme Court, "and such appeal shall be in the nature of a re-hearing." Thus it will be seen that the powers of the board do not err on the side of being too absolute. The qualifications for registration are: (1) A graduate in medicine or surgery of the New Zealand University; or (2) registered on the Register kept in accordance with the provisions of the Acts regulating the registration of medical practitioners in the United Kingdom; (3) eligible for registration on such last-mentioned Register; or (4) the holder of a foreign diploma approved by the board, granted after a course of not less than five years' study of the subjects pertaining to a medical or surgical degree or licence. Provided that no university, college, or other body in any country other than the United Kingdom shall be recognised by the said board for the purposes of this Act unless it appears to the board that the graduates in medicine or surgery of the University of New Zealand are by virtue of such graduation, and without further examination, entitled to practise medicine and surgery in such country, either on registration therein or otherwise. 5. One from whom no testimonial, diploma, licence, nor certificate has been withdrawn by the college, university, or other body granting it on account of the holder having been convicted of infamous conduct in a professional respect or of a felony or misdemeanour. 6. A person of good fame and character.

Children's Hospital, Wellington.

For some time past the need for a better hospital for children in the capital city has been obvious. In response to an appeal by the Mayor the sum of £6000 was collected in about ten days. Most valuable help was rendered by Mr. Ward and Miss Grace Palotta, members of a theatrical company which happened to be playing in Wellington during the collection week. With the subsidy of 24*s.* per pound from the Government there is every hope that ere long a suitable hospital will be established.

Contagious Diseases Act.

At the invitation of the Attorney-General, the medical associations have held several discussions on the question of whether there should be any alteration of the law relating to contagious disease. There is at present on our statute-book a Contagious Diseases Act which gives power to local authorities to bring into force the provisions of the Act. For a great number of years the Act has been practically a dead-letter because no municipality has availed itself of the provisions of the Act. Every year certain associations of women petition for a repeal of the statute. Hitherto the Government has simply "received" the petition, but this session it has been moved to suggest that the Act should be repealed. Before taking action, however, the Attorney-General has requested from the profession a statement as to the amount of syphilis in the Dominion, and what measures it considers necessary. There would appear to be no very definite data available, and the counsels offered are truly various. The general opinion seems to favour the recommendation of the late chief health officer that syphilis ought to be included amongst the list of notifiable diseases. If this were done, with a very slight amendment of the Public Health Act, complete control of recognised brothels could be accomplished, syphilis and gonorrhœa would be brought into line with the other infectious diseases, and the same measures could be employed to prevent their spread. A great deal would depend upon the wisdom exercised by the officials in what action they took upon notification. Desirable as it is, however, that something should be done to check the evil consequences of such diseases, there will, I fear, be much opposition offered when the suggestion comes up for decision in the House. The reason for the present discussion was the asked-for removal of the only Act on the statute-book dealing with contagious diseases, and it is unlikely that the petitioners will be satisfied with anything less than its removal.

Sept. 5th.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the quarterly meeting of the Council held on Oct. 13th the undermentioned diplomas were conferred upon the following gentlemen, who have now complied with the by-laws :—

M.R.C.S.—Walter Egbert Fox, Guy's Hospital; William Macewen, M.B., Ch.B. Glasg., Glasgow University and Charing Cross Hospital; Edward Vernon Whitby, M.B., Ch.B. Birmingham, Birmingham University.

L.D.S.—Harold Todd Reeve, Guy's Hospital; and Albert John Schaefer, Guy's Hospital.

UNIVERSITY OF GLASGOW.—The following have passed the first professional examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (B., Botany; Z., Zoology; P., Physics; and C., Chemistry) :—

Robert Aitken (B., P.), George Kirkwood Allan (B., P.), John Anderson (Z., P., C.), Andrew Duffield Blakely (Z.), John Bradford (B., P.), Maurice Smith Bryce (B., Z., P., C.), John Cameron (B., Z., C.), John Campbell (Z.), John Munro Campbell (B., P.), Thomas Watson Carstairs (B.), Alfred Mackenzie Clark (B., P.), Robert Clark, M.A. (B., Z., P., C.), Andrew Climie (B., P.), William Combe (B., P.), James Paterson Crawford (B., P., C.), Henry Paterson Crow (B., P.), Fritz Vivian Daeblitz (Z., P.), Michael Devers (B.), Alexander Hogg Donaldson (B., P.), Thomas Ingram Dun (Z.), Dugald Ferguson (B., P., C.), Thomas Ferguson (Z., C.), Harry Taylor Findlay (B., P.), James Jackson Finlay (B., P.), George Fleming (B., Z., P., C.), Robert Forbes (B., P.), Ian Maclean Frazer (Z., C.), Robert Frew, B.Sc. (B., P.), Walter Weir Galbraith (Z.), David Gould Gardiner (B., P.), Leonard Woodburn Gemmell (Z., P.), John Albert Frank Gibson (B., C.), Robert Stuart Gibson (B., P.), William Gibson (B., P., C.), John Aitken Gilfillan (B., P.), Peter Gordon (B., P.), Ronald Thomson Grant (B., P.), Alexander Hislop Hall (B , P.), David Cochrane Hanson (B., C.), Joseph Welsh Park Harkness, M.A. (B.), Fergus Leslie Henderson (B., P.), Rollo Isbister (B., P., C.), Alastair Caulfield Jebb (B., P.), Douglas Reid King (Z., P., C.), George Kirkhope (B., P.), William Fulton Kivlichan, M.A. (C.), Robert Kyle (B., P.), Hugh Brown Lawrie (B., P.), Robert Lindsay (B., P.), Alfred Thomas Logan (B., P.), George M'Callum (B., P.), Joseph M'Culloch (B., C.), Archibald Munn M'Cutcheon (B., P.), Robert William MacDonald (B., Z.), Donald John Macdougall (B., Z., C.), Donald Kerr MacDougall (B., P.), Gerald James M'Gorty (B., P.), Donald M'Intyre (B., P.), David Mackie (P.), James Graeme M'Kinna (B., P.), Joseph Allan Maclean (B., C.), Malcolm Bonar Macleod (B., P.), David M'Neill (B., P.), James Kennedy Manson (Z., C.), Walter John May (C.), Thomas Duff Miller (B., P.), James William Moffatt (B., P.), Percival John Moir (B., Z., C.), Laurence Sebastian Morgan (B., Z., P., C.), Hugh Adam Munro (P.), Thomas Fraser Noble (Z.), William O'Brien (Z., C.), John Roberts Pate (B., P.), James Paterson (B., P.), Andrew Picken (B., P.), John M'Lean Pinkerton, B.Sc. (B., Z.), John Stuart Prentice (C.), Hugh Quigley (B., Z., C.), Angus M'Innes Ramsay (Z.), Frederick Powlett Rankin (B.), Adam Rankine (B.), Thomas Forbes Brown Reid (B., Z., P., C.), David Bell Robertson (Z., C.), George William Ronaldson (P.), Robert Rowan (B., P.), Archibald M'Kerrow Russell (B., P.), William Jack Scade (B., P.), Seymour Cochrane Shanks (B., P.), William Frederick Shanks (B., Z.), Thomas Robertson Sinclair (B., Z., P.), John Smith, M.A. (B., Z.), Norman M'Gaan Smith (B., P.), John Banks Steven (B., P.), John Fraser Steven, M.A. (B., Z.), Henry Stewart, M.A. (B., Z.), Robert Sutherland Strachan (P., B.), Robert Taylor (B., P.), Donald Fraser Sage Thomson (B.), Robert Noel Thomson (B., P., C.), James Vallance (B., P.), James Walker (C.), William Semple Wallace (B., Z.), William James Cunningham Watt (Z.), John Allan White (Z.), Robert Horatio Williamson (Z.), Alexander Sweet Wilson (P.), James Gordon Wilson (P.), Robert James Wilson (B., P.), Thomas M'Skimming Wilson (Z.), John Wylie (B., P.), Alexander Young (C.), and Gavin Young (Z., C.).

Women.—Dagmar Florence Curjel (B., P.), Margaret O'Rourke Gallagher (B.), Ethel Winifred Gomperts (B., P.), Florence Scott Kirk (B., P.), Jessie Gordon M'Laren (B., P.), Janey Lamond Munro (B., P.), Helen Young Murdoch (B., P.), Mary Isabel Sinclair (C.), Grace Birrell Whish (B., P.), and Mary Ferguson Wood (Z.).

The following have passed the Second Professional Examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (A., Anatomy; and P., Physiology; and M., Materia Medica and Therapeutics) :—

William Larmour Anderson (A., M.), James Angus (M.), Simon Harry Bloom (A.), William Brown (A.), Alexander Grahame-Buchanan (A., M.), James Wilson Burton (A.), Norman Cameron (A., M.), George Wilson Clark (A.), Robert Craig, M.A. (M.), Daniel Augustine Cush (A., M.), Alexander Hugh Davidson (A.), James Henry Dible (M.), Philip Figdor (A.), John Maitland Forsyth (A., M.), William

Fotheringham (M.), James Fraser (A.), Adolph Robert Hanns Geyer (M.), Leopold Glushak (A., M.), Cecil William Fletcher Greenhill (A.), John Ferguson Hutton, M.A. (A.), Thomas Pollock Inglis (A., M.), Charles Joseph Hamilton Kirk (A.), John Finlayson Lang M.A. (A., P., M.), William Joseph Brown Lavery (P.), Frank Whitwell Kinnear Lawrie (A., P., M.), Robert Aim Lennie (A., P., M.), Carel Johannes van Lingen (A., P., M.), John Aloysius M'Connochie (M.), James Ronald M'Curdie (A.), John Henry Magoveny (A., M.), William Montgomery (A.), Kenneth Duncan Murchison (A., M.), Andrew Neilson (A., P.), John Boyd Orr, M.A., B.Sc. (M.), Andrew Peden (A., M.), James Purdie (A., M.), James Francis Quigley (Lambhill) (A., P.), David William Reid (M.). John Ritchie Richmond Ritchie (M.), Alfred Leopold Robertson (M.), James Gordon M'Gregor Robertson (A.), James Hinton Robertson (M.), Frank Shearar (A.), John Finlayson M'Gill Sloan (A.), Hendrik Cornelius van der Wat Smit (A., P., M.), James Anstruther Smith (A.), John Kenneth Smith (A., P., M.), George Taylor (A., P.), William Taylor (M.), Angus Walker (M.), John Cuthbertson Walker (P., M.), Thomas Walmsley (M.), Frederick John Whitelaw (P., M.), Archibald Wilson (A.), and William Ferguson Wood (A., M.).

Women.—Janet Rankine Anderson (P., M.), Jane Malcolm Davidson, (M.), Lillias Beverley Hardie (A.), Jane Kerry M'Elroy Hunter (M.), Mary Anne Kirk (P.), Maggie Logan Kirkwood (M.), Margaret Helen M'Killop (A., P., M.), Petrina Stewart (A., M.), and Janet Morris Walker (P., M.).

The following have passed the Third Professional Examination for the degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) in the subjects indicated (P., Pathology; and M., Medical Jurisprudence and Public Health):—

Mark James Aitken (P., M.), James Browning Alexander (P., M.), John Campbell Hill Allan (P.), Alexander John Archibald (P., M.), William Egon Halman Beard (M.), John Bower (P.), Charles Brash (P.), Angus Dugald Buchanan (P.), William Murdoch Buchanan (P., M.), George Cochrane, M.A. (P.), James Alphonsus Joseph Conway (P., M.), James Findlay, M.A. (M.), Robert Findlay (P., M.), David Thomas Crichton Frew (P., M.), John Joseph Gibb (M.), Joseph Graham (M.), Charles Hope Haddow (M.), Andrew Smith Hannay (M.), Daniel Christopher Hayes (P., M.), Alexander Gibson Henderson (M.), Andrew Gray Holms (P., M.), William Hunter Howat (P., M.), James Johnstone (M.), Felix Arthur Kerr (P., M.), Thomas Joseph Kirk (M.), Alexander Kirkhope (M.), Murdoch Hugh MacLeod (M.), Stephen Anderson MacPhee (P.), George Hanson M'Robert (P.), Stuart Spence Meighan, B.Sc. (M.), John Mitchell (P., M.), Michael John Murray (P.), Archibald Naismith (P.), James Eric Paterson (P., M.), Alexander Rae (M.), Henry Charles Deans Rankin (P., M.), Hugh Young Riddell (P.), John Livingstone Scott (M.), William Logan Scott (M.), James Smith (P., M.), Malcolm Sommerville (P.), Lawrence Tweedie Stewart (M.), Thomas Louis Grenet Stewart (P., M.), William Tudhope (M.), Alexander Guthrie Semple Wallace (P.), Tom Waterhouse (M.), Hugh Ferguson Watson, L.R.C.P. (M.), Thomas Whitelaw (P.), Douglas Wilson (M.), Hugh Gilmer Wilson (P.), and Walter Percy Yates (P.).

Women.—Barbara Macgregor (P., M.), Ellen Brown Orr (P., M.), Lucy MacBean Ross (P., M.), Christina Hamilton Shearer (P., M.), and Isabel Jane Stark (P., M.).

The following candidates passed with distinction in the subjects indicated:—

FIRST EXAMINATION.

Botany and Physics.—Archibald Munn M'Cutcheon.
Botany.—Dagmar Florence Curjel and James Graeme M'Kinna.
Zoology.—John Cameron, John M'Lean Pinkerton, B.Sc., and Robert Horatio Williamson.
Physics.—Robert Frew, B.Sc., Robert Stuart Gibson, Ronald Thomson Grant, Robert Lindsay, and Andrew Picken.
Chemistry.—James Kennedy Manson and Gavin Young.

SECOND EXAMINATION.

Materia Medica and Therapeutics.—James Henry Dible, James Hinton Robertson, and Thomas Walmsley.

THIRD EXAMINATION.

Pathology, Medical Jurisprudence, and Public Health.—James Eric Paterson.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this society was held on Oct. 12th, Dr. G. F. Blandford, the President, being in the chair. Fourteen directors were present. The audited accounts of the half-year ending June 30th were read and passed. By them it was seen that the income derived from investments during that period amounted to £1497 18*s.* 6*d.*, £245 14*s.* had been received in ordinary subscriptions and £46 4*s.* in life subscriptions. £1310 10*s.* had been distributed amongst the annuitants of the charity. The sum of £534 was voted to be paid in December as a Christmas present, each widow to receive £10, each orphan £3, and each orphan of the Copeland Fund £5. Two medical men were elected members of the society. Membership is open to any registered medical practitioner who at the time of his election is resident within a 20-mile radius of Charing Cross. Relief is only granted to the widows and orphans of deceased members; letters are constantly being received from widows of medical men asking for assistance, but this has to be refused as their husbands had not been members of the society. Full particulars and application forms for membership may be obtained from the Secretary at the offices of the Society, 11, Chandos-street, Cavendish-square, W.

KING'S COLLEGE, LONDON: SPECIAL PHYSIOLOGY LECTURES.—A course of four lectures, with experiments, on Tissue Respiration will be delivered in the Physiological Laboratory by Mr. Joseph Barcroft on the following Mondays, at 4.30 P.M.: Oct. 31st, Nov. 14th and 21st, and Dec. 5th. The course is free to students and members of King's College, to internal students of the University of London, to all medical students in London, and to medical practitioners on presentation of visiting cards.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.—On Nov. 3rd Professor Osler will deliver an address entitled "The Hospital Unit in University Work" in the Connaught Hall (Y.M.C.A. Buildings), Newcastle, at 4.30 P.M., and will be the guest of the society at a dinner to be held in the King's Hall, Armstrong College, at 7.15 P.M. on the same evening. All members of the medical profession in the north of England are most cordially invited to be present at the address and dinner, for which tickets (price 10*s.* 6*d.*) can be obtained from the secretaries, Dr. William Hume and Mr. R. J. Willan, 25, Ellison-place, Newcastle-on-Tyne.

LITERARY INTELLIGENCE.—Messrs. Baillière, Tindall, and Cox will publish on Tuesday next, Oct. 25th, a book on "Accidents in their Medico-Legal Aspect," which they have had in preparation during the last two years. The work is divided into three sections—legal, medical, and a case guide—and the index covers all three parts. The medical part of the book has been written by over 30 medical men who are, or have been, teachers at the great schools of medicine. The case guide is a short epitome of nearly every case referred to in the legal section, with a number of other cases of personal injury. This royal octavo volume of about 1300 pages is published at 30*s.* net, and should be of great use to both the medical and the legal profession.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—The annual meeting of this society was held on Oct. 14th, when the President, Dr. W. G. Willoughby, delivered an address on the Duties of a Medical Officer of Health. After referring to the more or less definite duties prescribed for medical officers of health by orders of the Local Government Board, he pointed out that these apparently limited their work to the prevention of disease. The boundary-line between prevention and treatment was so very indefinite—such, for example, as the sanatorium treatment of consumption and the use of antitoxin—that certain treatment had for some time been included within the scope of their duties. Though no one could rationally object to the two instances given, it was a matter for considerable doubt and debate as to how far a medical officer of health should go in the actual medical and surgical treatment being introduced in the form of school clinics. He dealt at some length with the important part played in public health by the home life of the people and urged that medical officers of health should find time to study the houses of the poor in their districts. He did not altogether agree with the statement contained in the Minority Report of the Poor-law Commission that four-fifths of the work of the medical officer of health was wrapped up in the casual labourer and his home. Poverty, overcrowding, hopelessness, ignorance, unemployment, consumption, mental defectiveness, crime, and alcoholic excess were often so closely intermingled that which was cause and which effect it was difficult to decide. The insanitary house was the constant accompaniment of these conditions, and from them came the bulk of the dirty conditions and neglect which led to personal ill-health. He then referred to a fact taken from a small experience that mentally defective children were found to be specially connected in undue proportion with dirty and unsatisfactory houses. The causes of this special connexion were sometimes difficult to determine, but often mentally defective children had mentally defective parents, and the neglect of the home and children might be due to weak-mindedness rather than to viciousness or intentional neglect. It was unfortunate that efforts during school life to improve the intelligence of a feeble-minded child often resulted in bringing it to a state when it could merge, though imperfectly intellectually developed, into the marriage market with disastrous results to the future generation. In Dr. Willoughby's opinion, the sooner the Government adopted these feeble-minded people and directed their careers the better it would be for the public health of the country. The annual dinner of the society was held on the same evening at

the Waldorf Hotel. The President occupied the chair, and the company included Sir Dyce and Lady Duckworth, Mrs. W. G. Willoughby, Rev. Dr. and Mrs. J. M. Willoughby, Sir Lauder Brunton, Mr. F. Hollins, Sir Shirley and Lady Murphy, Mr. and Mrs. H. T. Butlin, Mrs. B. Broadbent, the Mayor of Battersea, Dr. J. Priestley, and Mr. W. A. Lawton.

READING PATHOLOGICAL SOCIETY.—The annual meeting and dinner of this society took place on Thursday, Oct. 20th, when an annual oration was given by Sir Lauder Brunton, Bart., who chose as his subject, "Blood Pressure from a Clinical Point of View."

THE Master and Wardens of the Society of Apothecaries of London attended Divine service on St. Luke's Day, Oct. 18th, at St. Anne's-by-the-Wardrobe, E.C., and dined together in their hall in the evening, the occasion being the induction of the new Master, Mr. A. T. Norton, C.B. The Court of Examiners and many of the deans of the London medical schools were guests, and heard a very practical speech from Mr. Norton.

PRESENTATIONS TO MEDICAL PRACTITIONERS.—On Oct. 5th Mr. James Taylor, M.D., C.M. Aberd., J.P. for Banffshire, was presented by his patients and friends in the town of Keith and surrounding districts with a motor car as a mark of their respect and esteem after 25 years' active practice. Provost Cameron, who made the presentation, said, generally speaking, they owed much to the profession to which Dr. Taylor belonged, for to its members were mainly due the great advancement in sanitation and improved conditions affecting the public health. Twenty-five years had passed since first Dr. Taylor commenced practice in Keith after a distinguished university career, and during that time he had spared neither his time nor his health, and had gained the confidence of an ever-increasing *clientèle*, not only as a trusted and skilful physician, but also as a counsellor and sanitarian. Four handsome silver candlesticks, together with a hall gong, bearing the following inscription, were presented to Mrs. Taylor: "This gong, together with four silver candlesticks, was gifted to Mrs. Taylor as a memento of the presentation to Dr. Taylor of a motor-car on the attainment of his semi-jubilee as a medical practitioner in Keith and district. August, 1910."—Mr. Richard Brayn, L.R.C.P. Lond., M.R.C.S. Eng., L.S.A., medical superintendent of Broadmoor Criminal Lunatic Asylum, was presented by the staff, on Oct. 14th, with a silver rose-bowl and an album on the occasion of his retirement.

LONDON SCHOOL OF TROPICAL MEDICINE.—The annual school dinner was held at the Savoy Hotel on Oct. 14th, Mr. James Cantlie being in the chair. After the loyal toasts had been given, Mr. W. H. Lever (chairman of the Liverpool School of Tropical Medicine) proposed the toast of "The School." He referred to the need of money for carrying on the important imperial and economic work of research in tropical medicine and the desirability of making known this need. The Schools of Tropical Medicine both in London and Liverpool, between whom the most cordial relations existed, were engaged in breaking down the barrier which blocked the utilisation of the great resources of the tropics, and deserved from Government more help than they were given, if only in return for the half-million pounds annually which tropical medical officers saved the nation in the lives of men of the army and navy. Mr. James Cantlie responded, extending to Mr. Lever, as representing the Liverpool School, the same feelings of cordiality which he had expressed towards them. The toast of "The Orator of the Day" was proposed by Lord Sheffield and responded to by Dr. Henry Miers, who referred to the need for closer coöperation between the University of London and its schools, which might be supplied by providing the University with a building suitable to its dignity and requirements. Mr. Percival Nairne proposed "The Guests," a toast which was responded to by Sir Havelock Charles. The health of the chairman was proposed by his friend, Professor W. J. Simpson, and in reply Mr. Cantlie made a speech of characteristic humour which was so well received that he concluded with the remark "London folk are no ill to please." Amongst those present were Sir West Ridgeway, Mr. E. W. Blessig, Professor W. R. Smith, Sir William Treacher, Surgeon-General J. E. Godfrey, Dr. F. M. Sandwith, Sir Francis Lovell, Mr. H. J. Read, and many officers of the Army Medical and Indian and Colonial Services.

ROYAL DENTAL HOSPITAL OF LONDON.—The annual dinner of the staff and past and present students will be held on Saturday, Nov. 26th, at the Hôtel Métropole (Whitehall Rooms), under the presidency of Mr. H. Lloyd Williams. Gentlemen either now or formerly connected with the hospital or medical school who may, through inadvertence, not have received special notice and who desire to be present are requested to communicate with the Dean at the Royal Dental Hospital, 32, Leicester-square, London.

DONATIONS AND BEQUESTS.—By the will of the Rev. Henry Thornhill Morgan, vicar of St. Peter in Eastgate with St. Margaret, Lincoln, the testator bequeathed £500 to the East Derbyshire Hospital, Chesterfield, and £100 to the Royal Berkshire County Hospital, Reading.—The late Mr. William Hall of London, N., among other bequests, left £500 to the Lincoln County Hospital.—A gift of £1000 has been made to the funds of the Stratford-upon-Avon Hospital by Mr. W. B. Gibbins, a member of the Society of Friends.—The late Mr. Edward Matyear has left by will £500 to the West London Hospital, and the residue of his estate, amounting to over £60,000, to King Edward's Hospital Fund.

THE COUNTY COUNCIL AND THE MILK-SUPPLY OF LONDON.—During the three months ended Sept. 30th, 1910, 753 samples of milk sent to London from the home, Midland, and Western counties were taken by London County Council inspectors at the principal railway termini. The examination of 641 samples has been completed, with the result that 79, or 12·3 per cent., were found to be tuberculous. Part IV. of the General Powers Act, under which this work is authorised, came into operation on July 1st, 1908, and the total number of samples taken since that date is 4915: 4126 have been examined, and 435, or 10·5 per cent., found to be tuberculous. Of 3152 cows examined on farms during the quarter, 38, or 1·2 per cent., were found to be suffering from tuberculosis of the udder. The percentage since the Act came into operation, based on 23,978 examinations, is 1·8.

WITH the object of drawing the attention of medical men and the public to their obligations under the Notification of Births Act, Dr. C. S. Jaffe and Dr. W. W. Don were summoned, at the instance of the Paddington borough council, before the magistrate at Marylebone police court, for that, having been present at the birth of certain children in the parish, they failed to give notice in writing of the birth to the medical officer of health within 36 hours afterwards. The fathers of two children were also summoned for failing to give notice. Mr. Dennis, for the council, stated that over 60 summonses might have been issued against medical practitioners and fathers, but the council had contented itself with four. The magistrate inquired if there was any objection on the part of the medical profession to give notice of births, and was informed by Dr. R. Dudfield, the medical officer of health of Paddington, that there was an objection because no fees were paid for the service imposed. He added that the Act had had the effect of greatly reducing infantile mortality. The magistrate considered that Dr. Jaffe had not complied with the Act and fined him 5*s.* and 2*s.* 6*d.* costs, pointing out that there was no suggestion against him of unprofessional conduct. The summons against Dr. Don was withdrawn, his defence being that he understood from the midwife in attendance that the father had given notice.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

COLYER, F. C., M.R.C.S., L.D.S., has been appointed a Member of the Board of Examiners in Dental Surgery of the Royal College of Surgeons of England.

COWAN, G., M.D. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Thetford District of the counties of Norfolk and Suffolk.

BOKENSTEIN, KENNETH, M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed Assistant Pathologist to the National Hospital for Diseases of the Heart, Soho-square, W.

ELLIS, L. ERASMUS, M.D. Brux., M.R.C.S., L.R.C.P. Lond., L.S.A., has been appointed Clinical Assistant to the X-ray Department and Medical Electrical Department, West London Hospital.

ELLIS, WILLIAM GILMORE, M.D. Brux., M.R.C.S., L.S.A., has been appointed an Official Member of the Legislative Council of the Straits Settlements.

FEILING, ANTHONY, L.R.C.P. Lond., M.R.C.S., has been appointed Resident Medical Officer at the British Lying-in Hospital.

FELLS, ARTHUR, M.B., C.M. Edin., has been appointed Assistant Surgeon to the Bristol Eye Dispensary.

HAMPSON, WILLIAM, L.S.A., has been appointed Electro-Therapeutist to St. John's Hospital for Diseases of the Skin, Leicester-square, W.C.

HATHERLEY, S. O., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Swinton District of the county of Yorks, West Riding.

KNOX, ROBERT, M.B., C.M., M.D. Edin., M.R.C.S., L.R.C.P. Lond., has been appointed Director of the Electrical and Radio-therapeutic Department at the Cancer Hospital.

PORTEOUS, HAROLD BURNET, M.B., C.M. Edin., has been appointed Assistant Surgeon to the Bristol Eye Dispensary.

SIMPSON, J. B., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Golspie District of the county of Sutherland.

STACK, EDWARD HUGH EDWARDS, M.B., B.C Cantab., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Surgeon to the Bristol Eye Dispensary.

TAYLOR, WILLIAM PEACH, L.S.A. Lond., has been appointed Assistant Surgeon to the Bristol Eye Dispensary.

THOMPSON, J. E., M.B., Ch.B. Aberd., has been appointed Junior House Surgeon at the Southport Infirmary.

WILSON, HAROLD W., M.S., M.B. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Cancer Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARNSLEY, BECKETT HOSPITAL AND DISPENSARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with apartments, board, and laundry.

BATTERSEA POLYTECHNIC, London, S.W.—Lecturer for Friday evenings on "Meat and Food Inspection."

BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £100 per annum, with apartments, board, and attendance.

BRENTWOOD, ESSEX AND COLCHESTER LUNATIC ASYLUM.—Senior Assistant Medical Officer. Salary £300 per annum, with apartments, board, attendance, and washing.

BURNLEY, COUNTY BOROUGH OF.—Assistant Medical Officer of Health. Salary £250 per annum.

BUXTON, DEVONSHIRE HOSPITAL.—Assistant House Surgeon for six months. Salary £70 per annum, with apartments, board, and laundry.

CANCER HOSPITAL, Fulham-road.—Surgeon.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £70 per annum with board, lodging, and washing.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon for six months. Salary £30, with board, residence, and laundry.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.—Registrars. Also Clinical Assistants.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—House Surgeon, unmarried. Salary £30 per annum.

CHELTENHAM GENERAL HOSPITAL.—Surgeon-in-Charge of Branch Dispensary, unmarried. Salary £80 per annum, with board and lodging. Also House Physician, unmarried. Salary £75 per annum, with board and lodging.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £60 per annum, with board, apartments, and laundry.

CITY DISPENSARY, 29 and 30, College-street, Dowgate-hill, E.C.—Surgeon.

DENBIGH, NORTH WALES COUNTIES ASYLUM.—Medical Superintendent. Salary £500 per annum, with house, &c.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with board and lodging. Also Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging &c.

DOUGLAS, NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon, unmarried. Salary £90 per annum, with board and washing.

EVELINA HOSPITAL FOR SICK CHILDREN Southwark Bridge-road, S.E.—House Physician for six months. Salary £60 per annum, with board, residence, and washing.

FRENCH HOSPITAL, 172, Shaftesbury-avenue, W.C.—Resident Medical Officer, unmarried. Salary £50 per annum, with board and laundry.

FULHAM, PARISH OF.—Junior Assistant Medical Officer for six months. Salary at rate of £100 per annum, with board, furnished apartments, and washing.

GLASGOW, UNIVERSITY OF.—Examiner in Physiology, Examiner in Surgery (Systematic and Clinical), and an Examiner in Medicine (Systematic and Clinical).

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—Surgeon.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £50, with board, residence, and laundry.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with rooms, board, and washing.

LISCARD, WALLASEY DISPENSARY AND VICTORIA CENTRAL HOSPITAL, Cheshire.—House Surgeon, unmarried. Salary £100 per annum, with apartments, board, attendance, &c.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Pathologist and Bacteriologist. Salary at rate of 50 guineas per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood.—Honorary Dental Surgeon.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with board, lodging, and washing.

PENDLEBURY, MANCHESTER CHILDREN'S HOSPITAL.—Visiting Surgeon. Salary £100 per annum.

PRESTON ROYAL INFIRMARY.—Senior and Junior House Surgeons, unmarried, for six months. Salaries £80 and £60 per annum, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Assistant Physician. Also Assistant Surgeon.

READING, ROYAL BERKSHIRE HOSPITAL.—Second House Surgeon for six months. Salary £60 per annum, with board, lodging, and washing.

ROYAL EYE HOSPITAL, Southwark, S.E.—House Surgeon for six months. Salary £52 10s. per annum, with board and residence.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, London.—Assistant Demonstrator of Bacteriology. Salary £150 per annum.

ROYAL NAVAL MEDICAL SERVICE.—Fifteen Commissions.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £60 per annum, with rooms, board, and washing.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—House Surgeon. Salary at rate of £50 per annum, with board, residence, and laundry. Also Pathologist and Curator. Salary £50 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon for six months. Salary £30 per annum, with board, residence, and laundry.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £32 per annum, with board, residence, and laundry.

THROAT HOSPITAL, Golden-square, W.—Honorary Assistant Surgeon.

WAKEFIELD GENERAL HOSPITAL.—Senior House Surgeon, unmarried. Salary £120 per annum, with board, lodging, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Physician for Diseases of Women. Also Anæsthetist.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

WREXHAM INFIRMARY.—Resident Medical Officer. Salary £100 per annum, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Act at Bantry, in the county of Cork; and at Kington, in the county of Hereford.

Births, Marriages, and Deaths.

BIRTHS.

FELL.—On Oct. 17th, at Flan How, Ulverston, the wife of Captain M. H. G. Fell, R.A.M.C., of a daughter.

FITZWILLIAMS.—On Oct. 9th, at Rustington, the wife of Duncan C. L. Fitzwilliams, F.R.C.S., of 64, Brook-street, Grosvenor-square, W., of a daughter.

KIRKNESS.—To Dr. and Mrs. W. Ronald Kirkness, on Oct. 11th, at Chesterfield, London-road, Portsmouth, a son.

VIRET.—On Oct. 9th, at Fernleigh, Horton-lane, Bradford, the wife of B. P. Viret, M.B. Lond., M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

JENKINS—EDWARDS.—On Oct. 12th, at St. Margaret's, Westminster, Herbert Thomas Jenkins, M.R.C.S. Eng., L.R.C.P. Lond., to Margaret Wood Edwards, of Treanna, Anglesey, second daughter of the late Dean Edwards, of Bangor, N. Wales.

SELLS—STOCKMAN.—On Oct. 11th, at St. George's, Bloomsbury, London, Hugh Lancelot Sells, M.B., Ch.B., to Charlotte, eldest daughter of Mrs. Stockman, of Slough.

SMITH—MILLER.—On Oct. 17th, at St. Paul's, Prince's Park, Liverpool, by the Rev. J. O. Coop, M.A., Vicar of St. Catherine's, Abercromby-square, assisted by the Rev. S. S. Horan, M.A., Vicar of St. Paul's, Geo. Francis Rawdon Smith, M.B., Ch.B., eldest son of S. Rawdon Smith, J.P., of Ironbridge, Salop, to Ellen Mary, eldest daughter of the late Alexander Alan Miller, of 59, Peel-street, Liverpool.

WINCH—MORRIS.—On Oct. 12th, at St. James' Church, Kidbrooke, Blackheath, by the Rev. J. W. Morris, M.A., Rector of the parish, assisted by the Rev. F. J. Kendall, Incumbent of St. German's, Blackheath, Stanley Brooke, son of Richard Winch, Morden Grange, Blackheath, to Eleanor Boville, eldest daughter of Clarke Morris, M.R.C.S., J.P., Gordon Lodge, Blackheath.

DEATHS.

HYDE.—On Oct. 12th, at Madeley-road, Ealing, Lieutenant-Colonel Henry Hyde, I.M.S. (retired), aged 70 years.

MACAN.—On Oct. 16th, at Cheam, Surrey, Jameson John Macan, M.A., M.D., aged 65 years.

RINGER.—On Oct. 14th, at Lastingham, Yorkshire, Sydney Ringer, M.D., F.R.S., aged 76 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

PHYSICIANS AND CITIES.

In the September number of *St. Bartholomew's Hospital Journal* is an interesting address by Dr. Norman Moore delivered at midsummer to the Abernethian Society. Dr. Moore took for his text sundry episodes in the history of the hospital, pointing out that when anyone now enters through the main gateway he walks over the same ground as that walked over by the Bishop of London who consecrated the hospital chapel in 1123, and by five of the barons mentioned in Magna Charta who were all benefactors of the hospital. So abiding and founded in antiquity are many of the London streets and ways. Inside the hospital were sundry houses which were let to tenants, and one of these who held his house from 1551 to his death in 1575 was John Caius, and his annual rent was £4. He was educated at Gonville Hall in the University of Cambridge and studied medicine in Italy mainly under Vesalius. He was widely read, a good Greek scholar, and later became President of the Royal College of Physicians of London as well as Master of the second foundation of Gonville and Caius. The mention of the College of Physicians naturally reminded Dr. Moore of Linacre, and he in turn of Chambre, who, like Linacre, was a priest as well as physician. Among other posts he was warden of Merton College, and naturally took an interest in Merton's celebrated son John of Gaddesden, whose "Rosa Anglica" he read and annotated, the actual copy being shown to the meeting by Dr. Moore. All these great men, said Dr. Moore, "were imbued with a high sense of public duty and with a regard for every part of learning as well as for their own subject and art."

Chambre, who was Dean of St. Stephen's, Westminster, built the cloisters there, which still remain and are perhaps the latest pre-Reformation ecclesiastical buildings in London. Caius refounded Gonville Hall and built a new quadrangle, also designing and leaving the money for the famous gates of the new Caius College. In another department of art he presented the silver caduceus which is still borne before the President of the Royal College of Physicians of London, and had the statutes of the College bound with silver ornaments. And as Cambridge is adorned by the gifts and genius of one physician, so, too, Oxford has her Radcliffe Library, while in London the British Museum and library owe their inception to Sir Hans Sloane, who, as Dr. Moore mentioned, was a successor of Caius as President of the College of Physicians. While on the subject of physicians and architecture, Dr. Moore might well have added that one of the greatest architects of the land, namely, Wren, had in his early days been a diligent student of medicine and anatomy.

BECHUANALAND PROTECTORATE.

Mr. Barry May, Government Secretary, Mafeking, reporting to the Colonial Office on the affairs of the Bechuanaland Protectorate for the year 1909–10, writes:—"The health of the inhabitants generally was good. There were no outbreaks of serious infectious diseases, while malaria fever, which during the previous year had been so prevalent, reverted in its incidence to normal proportions. The feared appearance of sleeping sickness in N'gamiland, referred to in last year's report, has not been verified. A native was met with by the magistrate in the North-Eastern portion of the district who had been ill, he said, for 18 months, and who showed symptoms pointing to sleeping sickness. In particular, he appeared to experience great difficulty in keeping awake, falling asleep even while in the middle of a conversation. On the other hand, there was no enlargement of the glands of his neck, and a blood smear taken from him was found, on examination by Dr. Moffat at Buluwayo, to contain no signs of trypanosomes. In consequence, however, of the seriousness of the matter, authority was granted for the temporary appointment of a medical officer at Lake N'gami to fully investigate any cases suspected of being sleeping sickness, and to determine if possible, the question as to whether or no the disease actually exists in the country. Dr. W. R. W. James, who has served in Uganda and who has had experience of the disease, was selected for the appointment, and is at the present time on his way to N'gamiland."

FIFTY YEARS OF SCIENCE.

THE well-known journal *Public Opinion* has celebrated its entry into the fiftieth year of publication by the issue on Oct. 7th of a special number which contains many articles of interest, among them being "Fifty Years of Change in British Homes," by Sir Walter Crane; "Fifty Years of History," by Dr. J. Holland Rose, Litt.D., and "Fifty Years of Literature," by Dr. C. T. Wright, LL.D. Sir Oliver Lodge sums up the progress of science during the past half century, in which he, of course, selects the names of Pasteur and Lister to illustrate the advance of medical science. Of Pasteur he says that his discovery of the nature of disease is in the act of revolutionising medicine, while at the same time it is throwing light on the activity of the soil in agriculture, the purification of rivers, the treatment of sewage, and on other problems of great importance. In surgery Lord Lister's discovery has enabled operations to be performed with safety which before were quite impossible, leading to a saving of life which can hardly be imagined.

RES VARIA ET MULTIPLEX.

To the Editor of THE LANCET.

SIR,—As an occasional contributor to your far-flung pages may I be permitted to ask, through their medium, if the users of atoxyl, who have had the misfortune to blind their patients and otherwise meet with disastrous results from its application, have taken care *not to sterilise by ebullition the injection?* It seems, even to me, a very puerile question to ask, seeing that the chemistry of the preparation must be well known, but on no other account can I find an adequate explanation of their bad luck with a drug which to me has been a veritable godsend.

Since 1902, when I first read about the "anilide metaarsenique" in the "Annales of Merck," I have given over 2500 hypodermic injections of a 15 per cent. solution of atoxyl without a mishap. The solution is prepared in the autoclave, as boiling in the open air sets free the "aniline," which is a tissue poison. Of this solution I give 2 c.c., intramuscularly, every second day during a fortnight, and then allow the patient to remain without the medication for a similar period. I use these injections in chronic malaria, chronic skin diseases, and in syphilis, and as a tonic in cases where arsenic is indicated.

As a specific in venereal disease it is not curative, but by alternating its use with that of a *soluble* salt of mercury the writer has had the satisfaction of reducing the mercurial treatment at least by half. "606" is still to be tried in this *ultima Thule*.

In chronic malaria it is well to give, say, two injections of a gramme each of a reliable soluble quinine salt twice a week, and the atoxyl thrice; for example, quinine Monday and Friday, and atoxyl Tuesday, Thursday, and Sunday. Then wait a week, and repeat. This latter, perhaps, may interest more practitioners *outre mer* than those domiciled in England, outside of Albert Dock.

Pardon the intrusion of a very ordinary country doctor far from the centres where science and civilisation have their head-waters, but of one none the less desirous of contributing a droplet to the current, and who begs to subscribe himself, Respectfully yours,

Weissnichtwo, Sept. 18th, 1910. W.

CHRISTMAS HAMPERS AND CLOTHING FOR LITTLE CRIPPLES.

Sir William P. Treloar has again sent us his annual appeal on behalf of the poor crippled children of the metropolis. With the generous assistance of the public Sir William Treloar has for many years provided the poor cripples of London with Christmas hampers, and on a modest estimate the fund brightens the lives of over 30,000 little sufferers at Christmas-tide. His Majesty the King provides 10 guineas a year towards the fund, which is administered on the widest possible basis, and is deserving of generous support. Donations should be sent to Sir William Treloar, 69, Ludgate-hill, London, E.C., and marked "Little Cripples' Christmas Hamper and Clothing Fund."

BOULOU WATER.

WE published last week an analysis of this drinking water, and have been asked to state that the address of the agent is not that which we gave, but is 122, High-street, Kensington, London, W.

BRITISH GOLF COURSES.

Messrs. Duckworth and Co. (3, Henrietta-street, Covent Garden, W.C.) have announced the publication this month of a new work entitled "The Golf Courses of the British Isles." The courses are described by Mr. Bernard Darwin, and there are 64 full-page illustrations by Mr. Harry Rountree. The price is 1 guinea net. Mr. Bernard Darwin is an English international player, who was last year in the semi-final of the Amateur Championship, and is also a well-known writer on golf. We believe that many members of the medical profession may like to know of this book, the golfing holiday being popular among them.

AN EXAMPLE FROM ROME.

THE Syndic, Signor Ernesto Nathan, has issued an "ordinanza" to safeguard the public from a danger of long standing—the consumption of bread and pastry which has been exposed in shop windows, or even at shop doors, to the contamination of flies in the one case and of promiscuous dust in the other. These articles of food must henceforth be exhibited to the buying citizen under glass. Another risk which the "ordinanza" provides against is that of the handling of these articles to test their consistency or freshness—a real risk if one considers the neglect of personal ablution on the part of a public with whom the nail-brush is by no means invariably an appurtenance of the toilet. Henceforth the purchaser will be prevented from fingering the bread and pastry exposed for sale, these articles having now to be exhibited under glass furnished with "cartelli indicatori" (card labels). If, in violation of the "ordinanza," they have been handled by the customer, they are

to be impounded and "esclusi dalla vendita" (removed from sale). Bakers are forbidden to take back or to offer for sale such articles, even after being "grattugiati" (grated), which have been exposed and handled in restaurants or carried back from private houses by the distributers. In restaurants or at railway buffets bread will be put on the table in the necessary quantity, and no more; it will be wrapped in paper; and, if already handled or left behind by preceding guests, it cannot again be offered for consumption. Contravention under any of these heads of the "ordinanza" incurs a severe penalty. The Syndic is already assailed, censoriously, for these opportune measures; but the better-inspired and better-mannered public are on his side, hoping as they do that the worse than untidy practices at which they are aimed will gradually disappear, like that of spitting in public vehicles or on the floors of restaurants—a practice which died hard, till its danger to public health was seen to be not less real than its offence to decency.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1910:—

Nov. 7th–12th (Cape Town).—Twelfth South African Medical Congress (1910).

In 1911:—

May–October (Dresden).—International Hygiene Exhibition.

June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.

July (Birmingham).—British Medical Association.

August or September (Berlin).—Third International Laryngo-Rhinological Congress.

September (Brussels).—Exhibition of Fractures.

September (Sydney).—Australasian Medical Congress.

Sept. 24th–30th (Rome).—International Congress on Tuberculosis.

,, 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.

October (Cologne).—International Congress of Criminal Anthropology.

In 1912:—

September (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

In 1913 the only fixture so far is in London, where the Seventeenth International Congress of Medicine will take place.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

MONDAY.

ODONTOLOGICAL SECTION (Hon. Secretaries—E. B. Dowsett, W. W. James, J. Howard Mummery): at 8 P.M.

Paper:
Mr. F. J. Bennett: Destruction of Teeth by Milk Germs.

Casual Communication:
Mr. J. F. Colyer: A Myeloid Sarcoma associated with a Septic Oral Condition.

Presidential Address:
Mr. W. B. Bacon.

TUESDAY.

MEDICAL SECTION (Hon. Secretaries—A. F. Voelcker, Sir John F. H. Broadbent, Bart.): at 5.30 P.M.

Paper:
Dr. A. M. Gossage and Mr. E. Rock Carling: Multiple Cartilaginous Exostoses.

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—J. P. Lockhart Mummery, T. R. Whipham, G. S. Haynes) at 11, Chandos-street, W.: at 4.30 P.M.

Cases, &c.

SECTION OF BALNEOLOGY AND CLIMATOLOGY (Hon. Secretary—F. A. de T. Mouillot): at 5.30 P.M.

Presidential Address:
Dr. T. Fred Gardner: Air and Water: Is there Anything New under the Sun?

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 P.M.

Presidential Address:
Dr. Theodore Thomson, C.M.G.: The Enteric Fever Carrier.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Mr. J. Bland-Sutton: The Clinical Aspects of Metastatic Cancer of the Ovary.—Dr. B. Spilsbury: The Pathology of Certain Tumours of the Ovary.

MEDICO-LEGAL SOCIETY, 11, Chandos-street, Cavendish-square, W.C.

TUESDAY.—8.15 P.M., Presidential Address: The Influence of Social and Legal Restrictions upon the Practice of Medicine.—Mr. D. Cotes-Preedy: The Law and Experiment.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—8.30 P.M., Mr. Bland-Sutton: Diseases of Elephants' Tusks in Relation to Billiard Balls.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8.30 P.M., Discussion on the Diagnosis and Treatment of Cystic Tumours of the Breast (opened by Mr. D'Arcy Power, illustrated by Mr. E. H. Shaw).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY.—5 P.M., Mr. Shattock: Specimens illustrating Syphilis. (Museum Demonstration.)

FRIDAY.—5 P.M., Prof. A. Keith: Specimens illustrating the Various Forms of Imperfect Differentiation of the Sexual Organs and Characters. (Museum Demonstration.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. H. Sequeira: Clinique (Skin). 5.15 P.M., Lecture:—Dr. J. S. R. Russell: Diagnosis of Disseminated Sclerosis.

TUESDAY.—4 P.M., Dr. C. O. Hawthorne: Clinique (Medical). 5.15 P.M., Dr. L. Guthrie: Tetany and Allied Affections.

WEDNESDAY.—4 P.M, Mr. C. W. Rowntree: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. L. Mummery: Diagnosis in Diseases of the Rectum and Anus.

THURSDAY.—4 P.M., Dr. C. Riviere: Clinique (Medical). 5.15 P.M., Lecture:—Dr. Rozenraad (Homburg): Obesity and Some Changes in Metabolism.

FRIDAY.—4 P.M., Dr. D. Mackenzie: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture II.)

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Low; Insects as Carriers of Disease in Tropical Medicine.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Mr. Ll. Williams: Methods of Extraction of the Teeth, When and How.

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Morton: X Ray Examination of the Digestive System.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Davis: Diseases of the Ear, the Lines on which Treatment should be Based.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 4.30 P.M., Special Lecture:—Dr. J. Taylor: Treatment of Certain Nervous Diseases.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 3.30 P.M., Special Lecture:—Mr. Cargill: Injuries to the Eyeball.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4 30 P.M., Special Lecture:—Mr. Pendlebury: Some Minor Operations of General Practice.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. R. Bradford: Tuberculous Peritonitis.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

THURSDAY.—4.30 P.M., Sir Lauder Brunton, Bart.: The Value of Blood-pressure Observation in Medical Practice (Opening Lecture of the Winter Session).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. R. Russell: Paraplegia.
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Taylor: Clinical Cases.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3.45 P.M., Lecture:—Mr. Stuart-Low: Accessory Sinuses.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE CHEST, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: The Treatment of Eczema in all its Forms.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Dr. Habershon: Bronchiectasis.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. G. Wright: Intestinal Obstruction. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.),

TUESDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (26th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (27th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (29th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 19th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 13	30·04	N.E.	0·30	59	59	51	57	58	Overcast
,, 14	30·40	N.E.	...	66	54	51	49	52	Overcast
,, 15	30·21	E.	...	73	56	46	47	49	Overcast
,, 16	30·22	S.E.	...	89	60	47	51	54	Fine
,, 17	29·92	S.	0·01	75	60	49	55	56	Raining
,, 18	30·07	WSW	0·09	78	61	48	48	49	Cloudy
,, 19	29·67	W.	0·10	63	57	49	50	52	Cloudy

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I.—Mr. Ilott, Valley; Ingham Infirmary, South Shields, Secretary of.

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K.—Messrs. Kilner Bros., Lond.; Dr. J. E. H. Kelso, Hayling Island; *Keighley Herald*, Manager of.

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N.—Mr. H. G. G. Nelson, Redhill; Newport and Monmouthshire Hospital, Secretary of; North-East London Post-Graduate College, Dean of.

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R.—Dr. T. Robertson, Eyemouth; Mrs. Rich, Bournemouth; Dr. R.; Royal Maternity Charity, Lond., Secretary of; Royal Berkshire Hospital, Reading, Secretary of; Mr. J. J. S. Rowe, Lond.; R. M. H. W.; Royal National Hospital for Consumption for Ireland, Dublin, Hon. Secretary of.

S.—Scholastic, Clerical, &c., Association, Lond.; *South Wales Argus*, Newport, Manager of; Messrs. Spiers and Pond, Lond.; "Suburban," Lond.; Messrs. R. Sumner and Co., Liverpool; Dr. H. A. Schölberg, Cardiff; Sunderland Guardians, Clerk to the; *Shrewsbury Chronicle*, Manager of; Dr. M. J. Synnott, Montclair, U.S.A.; Messrs. W. H. Smith and Son, Liverpool; Southport Infirmary, Secretary of; Messrs. G. Street and Co., Lond.; St. Mary's Hospital for Women and Children, Lond., Secretary of.

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W.—Mr. M. Williams, Trefriw; Mr. A. P. Walters, Exeter; Dr. H. Wise, Poynton; W. C. W.; Mr. A. Wander, Lond.; W. M.; Dr. A. V. Waiz, Roncegno; W. A. W. T.; Mr. W. F. Walker, Dinas Mawddwy; Mr. C. A. Widlake, Bristol.

Z.—Messrs. A. and M. Zimmermann and Co., Lond.

An Address
ON
THE CHIEF AIM OF MEDICINE.

Delivered at the Public Health Laboratory, Victoria University of Manchester, on Oct. 7th, 1910,

BY SHERIDAN DELÉPINE, M.B., C.M. EDIN., M.Sc. MANCH.,

PROFESSOR OF PUBLIC HEALTH AND BACTERIOLOGY; DIRECTOR OF THE PUBLIC HEALTH LABORATORY, VICTORIA UNIVERSITY OF MANCHESTER.

GENTLEMEN,—In the early days of civilisation disease was attributed to supernatural agencies, demoniacal or divine, which had, under the influence of certain conjunctions of circumstances, the power to injure materially the body.

MEDICINE IN EARLY TIMES.

My learned colleague, Professor Hogg, whose knowledge of early Babylonian texts allows him to speak with authority, informs me that he has not found evidence in Babylonian records of any preventive methods other than ceremonies intended to ward off spirits. In answer to my inquiries he has kindly given me the following information regarding the practice of medicine in those early days. "People were apt to attach more importance to correct ceremonial in the administration of drugs or in the performance of operations than to the physical effects of the treatment used. To a certain extent, indeed, healing was a priestly duty. The priests, however, may have known a good deal more than the people about the importance of physical treatment, and the word *asu* (physician-healer) may mean a 'skilled' healer, with whom the priest coöperated, rather than a class of priest; the precise relations of the different types of office have not yet been made out fully. According to the subscription to a medical text in the library of the great Assyrian king Ashur-bani-pal, there were three divisions in the healing art: 'healing' (literally, vivifying), 'surgery,' and 'exorcism."[1]

Notwithstanding the fact that the influence of climate, season, &c., is discussed by Hippocrates in his books on "Epidemics," the therapeutic aspect of medicine continued to monopolise almost, if not entirely, the attention of the laity and of the medical profession. Even at the present day the greatest compliment that can be offered to a physician is to call him a healer (*vide* interesting article in the *Manchester Guardian* on the occasion of the centenary of Dr. John Brown).

COMPARISON OF PREVENTIVE AND CURATIVE MEDICINE.

The absorbing interest taken by the medical profession in the treatment of disease by vaccine-therapy was well shown by the length of the discussion which took place before the Royal Society of Medicine during the months of May and June of this year, while only this week the marvellous successes of modern surgery formed the subject of the eloquent inaugural address delivered by Professor Thorburn. I could not help feeling, however, while listening to my distinguished colleague, that much of the success of modern surgery is attributable to the better knowledge of the causes and prevention of infection which has followed the pioneer work of Pasteur and Lister. The growth of this knowledge, which had been exceedingly slow until the beginning of the last century, has during the last 50 years been remarkably rapid and has led to a new conception of the *chief aim of medicine*. The truth of the saying "Prevention is better than cure" has undoubtedly been long accepted, but as regards disease it was only during the second half of the last century that this principle has passed from the sphere of the abstract to that of practice.

In order to realise the consequences of this evolution of ideas it is necessary to compare the objects of curative medicine with those of preventive medicine. Treatment of disease, whether medical or surgical, implies the previous existence of disease, and has therefore to do with living organisms that have already suffered damage and loss of energy which the most successful treatment can only reduce to a minimum but cannot obliterate entirely. Preventive medicine, on the other hand, aims at preventing the occurrence of disease, and, in principle, has to deal on the one hand with living organisms not yet damaged by disease, and, on the other hand, with agents capable of producing disease before the latter have had the opportunity of injuring the former. It is true that, since diseased individuals frequently act as centres of infection, therapeutical methods may find a useful place in the work of prevention, but it is clear that the existence of any case of infection is in itself proof that preventive methods have been neglected or applied unsuccessfully. The object of preventive medicine is therefore to keep the living organisms in that state characterised by a certain *duration of life, absence of pain, capacity for work, and power of reproduction* which is commonly known as *health*.

"It has often been said that the life of man is a perpetual struggle with the forces of nature; that the continual effort is to oppose the tendency to decay and disintegration which is the fate of all organised beings." These words, which I quote from an elementary treatise by F. S. B. François de Chaumont,[2] do not appear to me to indicate a theory upon which a true conception of health could be based. I think that we must look upon health as the *normal reaction* of the *normal organism* to its *average environment and circumstances*. According to this view there is nothing final in our conception of health, for no biologist would be justified in supposing that any living species has reached the limits of its progressive evolution, so long as there is no clear evidence of regressive changes tending towards extinction.

Prevention of disease should not, therefore, be considered as the ultimate aim of hygiene, for it is not unreasonable to hope that as knowledge of functional activities and of the effects of external agencies upon living organisms becomes more complete, the day may come when man will be in a position so to control the conditions of life as to raise the standard of health above the present level. I doubt whether it will be given to any of us to see that day: all we can hope to do is to prepare the way by devoting our energies to the prevention of diseases of which the cause is known, and to the discovery of causes at present unknown. The incompleteness of our knowledge renders this work slow and laborious, but less ungrateful than it must have been to our predecessors.

RESULTS OF PREVENTIVE MEDICINE.

Thanks to the work of Dr. W. Farr and of his successors we have the means of estimating numerically the effects of preventive work upon the health of the inhabitants of this kingdom, and the results obtained during the last 50 years are most encouraging. It is not always easy to interpret correctly detailed statistics, and more particularly those based upon the diagnosis of non-fatal illnesses, because the value of statistics depends entirely upon the accuracy of the observations upon which they are based, but when simple records of deaths are dealt with some confidence may be attached to them. The following tables, which I have taken from the Seventy-first Annual Report of the Registrar-General (1908), show (A) the population of England and Wales for every fifth year from 1861 to 1905, and for the three following years, and (B) the general death-rates for each quinquennium during the same period.

(A) *Population of England and Wales. (Loc. cit. Table I., p. 2.)*

Years.	Population.
1861	20,119,314
1865	21,145,151
1870	22,501,316
1875	24,045,385
1880	25,714,288
1885	27,220,706
1890	28,763,673
1895	30,451,528
1900	32,249,187
1905	34,152,977
1906	34,547,016
1907	34,945,600
1908	35,348,780

(B) *Annual Rate of Mortality per 1000 Persons Living. (Loc. cit. XXXVI.)*

Years.	Rate for persons.
1861–1865	21·4
1866–1870	21·2
1871–1875	20·9
1876–1880	19·8
1881–1885	18·7
1886–1890	18·5
1891–1895	18·5
1896–1900	17·6
1901–1905	16·0
1906	15·4
1907	15·0
1908	14·7

[1] The Babylonian texts give full descriptions of symptoms and prescribe detailed treatment (except in certain cases where they say the physician is to do nothing: "The sick person will die"), but it is likely enough that in those cases also non-physical means were used in addition to the physical.

[2] The Habitation in Relation to Health, 1897.

If we compare roughly the rate of mortality for the quinquennium 1861–1865 with that for the quinquennium 1901–1905 we find that during the five years 1861–1865 out of 20,000,000 persons some 428,000 died yearly, and during the five years 1901–1905 out of the same number of persons some 320,000 died yearly, which indicates that in the second quinquennium out of 20,000,000 persons 108,000 who would have died each year had the 1861–65 rate remained unchanged were during the period 1901–1905 still alive at the end of each of these years. To estimate accurately the value of these figures it would be necessary to enter into many particulars, but it is not necessary to make an absolute estimate of their value to form a general idea of the tendency which they indicate.

Marked as has been the reduction of mortality during these 48 years it is easy to show that further progress is to be expected. An analysis of the chief causes of death during the year 1908 proves that many of these deaths were attributable to infectious diseases or to lesions many of which were due to the previous occurrence of infectious diseases.

Table C, which is based upon the figures published in the Seventy-first Annual Report of the Registrar-General (LXXX.), shows that more than one-half of the deaths which occurred in England and Wales were due to avoidable causes.

C. Proportion of Deaths from the Principal Causes to Total Deaths in England and Wales, 1908. (*Loc. cit. LXXX.*)

	Proportion per 1000 deaths from all causes.	Rate per 1,000,000 living.
Measles	15·4	 230
Influenza	19·4	 290
Whooping-cough	18·9	 280
Diphtheria	10·7	 160
Diarrhœa	35·4	 520
Pneumonia	80·3	 1,180
Tuberculosis, all forms	107·8—287·9	..... 1,580— 4,240
Cancer	62·9— 62·9	..... 920— 920
Diseases of the nervous system	64·0	 940
Diseases of the heart	95·0	 1,410
Diseases of the blood-vessels	60·2	 880
Diseases of the respiratory system	88·7	 1,300
Diseases of the digestive system	54·6	 800
Diseases of the urinary system	32·9—395·4	..... 480— 5,810
Other causes	76·6— 76·6	..... 1,120— 1,120
Premature births and congenital defects	45·7	 670
Atrophy debility	28·7	 420
Violence	38·7—113·1	..... 570— 1,660
Old age	63·2— 63·2	..... 930— 930
All causes	1000—999·1	..... 14,680—14,680

The records given in Table C show how much remains to be done in the field of preventive medicine. Disease will for a long time to come still claim victims who must look to the skilled physician and surgeon for help. The therapeutical art with all its anxieties and triumphs, its strong appeal to human sympathies and its well-deserved rewards, will continue to be the most attractive branch of medicine. Meanwhile preventive medicine must discover more and more efficient means of protecting individuals and communities against disease, and thus confer upon humanity benefits which, though inestimable, cannot evoke the same personal gratitude as successful treatment.

Problems Presented in the Control of Infectious Disease.

It is impossible for individuals to realise the extent of benefits the need of which they have not felt because they have been saved the pangs of disease; it is from the State that the recognition of such services should come. In the course of a few remarks which Dr. Arthur Ransome made on the occasion of the opening of this laboratory he said: "The health of the people is the supreme law not only for statesmen and law-givers but for the whole community. The Common Health comes before the Common Wealth, which, indeed, would be impossible of attainment without it." These words indicate the principle which must have guided legislators ancient and modern who have paid attention to the control of disease by legislative and administrative methods.[3] It is specially to this aspect of preventive medicine that the terms Public Health and State medicine are applicable. It is clear that sanitary laws are at most the expression of the knowledge available at the time of their promulgation; their usefulness depends on the soundness of that knowledge and on the possibility of making it applicable to the masses through some kind of administrative machinery. The medical advisers of sanitary authorities have, therefore, not only the task of contributing to the advance of knowledge, but they have also to see that this knowledge is adequately reflected by the sanitary laws which they have to administer. While the medical officer of health must be progressive he must also be patient, for the problems he has to deal with are very intricate. Thus, taking infectious diseases as an example, it must always be remembered that the occurrence of infection is not determined only by the essential causal agent, but also by the coöperative agency of various factors, of which, under special circumstances, some become so important that they more or less completely overshadow the essential cause. This is particularly noticeable in the case of diseases such as tuberculosis, of which the essential cause is a widely distributed microbe. If, whenever the opportunity of infection occurred, the tubercle bacillus were abundant or virulent enough, and its possible victims were in a receptive state, there would be very few persons free from tuberculosis among civilised communities.

The importance of predisposing factors is often so great that not a few clinicians and administrators have given but scant attention to the essential cause. It must be acknowledged that in many cases excellent results have been obtained by dealing thoroughly with predisposing causes, and that often, in the present state of science, no other course is open to us. It is, however, never safe to disregard, even temporarily or partially, the *causa causans*, because this essential factor may under the influence of various circumstances acquire excessive powers. Neither is it safe, for preventive purposes, to rely entirely upon the action of natural or artificial curative agencies, because these may fail. Recoveries from infectious diseases may be apparent or real, and do not invariably result in so great a reduction in the number of infective centres as might be expected. Recoveries brought about by natural processes are more common than is generally suspected, and, together with the existence of cases of infection without clear symptoms, introduce an additional element of complexity in our estimates of the occurrence and distribution of centres of infection. In studying the conditions which influence the prevalence of any infectious disease, and which must therefore be considered in connexion with prevention, it is necessary to take account of a great number of factors which may be roughly grouped into the following categories: distribution and habits of the infecting parasite; conditions influencing the quantity of the parasite; conditions influencing the virulence of the parasite; opportunities and channels of infection; conditions influencing the resistance of the possible host; conditions influencing the rapidity and completeness of recoveries.

I might show that with regard to non-infectious preventable diseases the problems to be solved are also very complicated, but what I have said of infectious diseases is sufficient to indicate that although public health has a very clear and well-defined object it cannot be called a science in the same sense as physics, chemistry, physiology, &c.

Scientific Training of the Medical Officer of Health.

To discharge his duties efficiently the medical officer of health should have some general and practical knowledge of certain branches of physics, chemistry, geology, botany, zoology, engineering, law, and statistical methods in addition to a fuller acquaintance with human physiology, pathology, clinical medicine, and epidemiology. It is clear that no man could be an expert in all these sciences, each of which has become more than enough to satisfy the energies of any modern scientific worker. The hygienist should, however, have a scientific training sufficiently broad to allow him to grasp the general meaning and relations of

[3] The development of sanitary legislation forms the subject of the very interesting and terse chapter on the Rise and Progress of Preventive Medicine in Dr. Hamer's Manual of Hygiene (pp. 1 to 15). London, 1902.

natural phenomena which may influence the occurrence of disease; he should also have some practical knowledge of the methods that are used in the study of these phenomena and of their relation to the occurrence of disease.

It is unfortunate that the choice of public health as a career is usually made only after the completion of ordinary medical studies, in which a considerable amount of time is devoted to subjects which are of little importance to the health officer, while little attention is paid to matters that are of the utmost importance in preventive medicine. If medical students who wish to enter the public health service could adapt the curriculum to their needs they would find it advantageous to devote the first three years of their studies to certain branches of physics, chemistry, geology, botany, zoology, human anatomy, and physiology, and should make themselves sufficiently conversant with mathematics to be able to work out some of the simpler physical and statistical problems. In the second part of the curriculum much of the time which is now given to operative surgery and to midwifery might with great advantage be devoted to the study of the etiology, pathology, and management of infectious and other preventable diseases. Under the present conditions candidates for the Diploma in Public Health have generally to make up in about nine or twelve months the deficiencies of the ordinary medical curriculum, and they must in addition study sanitary law, sanitary administration, vital statistics, and other matters relating to the duties of medical officers of health.

In order that this short period of post-graduate studies should meet the requirements of the public health student, it is obviously necessary that the teaching be so coördinated that each subject claims an amount of attention proportional to its importance. It is also desirable that the student should come in contact with teachers who have themselves an intimate practical acquaintance with the subject they teach. For reasons which I have already explained, I do not believe that any single teacher can be equally interested and competent in the various sciences bearing upon public health. It follows from this that in the short period of nine months the student should come in contact with a number of experts, and in order that this should not be a source of unbearable burdens it is essential that the various parts of the course should be well coördinated.

We have in this school striven, as far as was in our power, to follow this policy. With the coöperation and assistance of my colleagues I made arrangements some eight years ago for the teaching of the subjects of the first part of the D.P.H. examination which have, I believe, rendered the work of the candidates both easier and more profitable. On the occasion of the renaming of the chair which I hold, the University has sanctioned the extension of this method to the subjects of the second part of the D.P.H. examination. Under this new arrangement it will become possible for public health students to obtain in this laboratory from well-known administrators courses of lectures on sanitary engineering, sanitary law and administration, vital statistics, school hygiene, factory hygiene, and other special subjects which will render the study of these branches of administration simpler and more fruitful than in the past. Dr. Tattersall and Dr. Brindley will lecture on public health administration generally. Dr. Niven will deal fully with one subject, the administrative control of tuberculosis. The importance which school hygiene has acquired of late years is ample justification for the appointment of Dr. Meredith Young as lecturer on school hygiene.

With regard to factory hygiene, it is remarkable that a subject so important to industrial communities should have so long been unrepresented by a lecturer. The first course on factory hygiene will be given next summer by Dr. Legge, and you are to be congratulated on having the opportunity to listen to one who is so high an authority on the subject. I may add that the Home Secretary and Dr. Whitelegge have taken a warm interest in this extension of our work. I have also the pleasure of announcing that Professor Hickson will, for the first time, give in the laboratory a few lectures introductory to the study of animal parasites. This constitutes the only change which we have made with regard to the teaching of the sciences upon which the practice of public health is founded.

A Clinical Lecture

ON

HÆMATEMESIS.

Delivered at the London School of Clinical Medicine, Seamen's Hospital, Greenwich, on Oct. 10th, 1910,

BY SIR DYCE DUCKWORTH, BART.,
M.D. EDIN., LL.D., F.R.C.P.,
CONSULTING PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL; SENIOR PHYSICIAN TO THE SEAMEN'S HOSPITAL.

GENTLEMEN,—I propose to discuss with you to-day some of the causes of gastric hæmorrhage, and the appropriate treatment for patients suffering from it. A case illustrating this subject has lately been in my wards, and affords a suitable text for this lecture. As you know, we have seldom female patients in this hospital, but as we receive emergency cases here, and an attack of severe hæmatemesis distinctly comes into that category, the subject of it was admitted on July 3rd. I will give you the particulars of it as concisely as I can.

ILLUSTRATIVE CASE.

A woman, aged 38 years, married, mother of a daughter aged 18 years, was taking a walk in the afternoon when she became faint and suddenly vomited nearly a pint of blood. She was much frightened and distressed on arrival here. She was put to bed and laid flat without a pillow. Her pulse was feeble, 104, and her respirations were 24. Her colour was good. No pain was complained of. A hypodermic injection of a quarter of a grain of morphine was given, and nothing by the mouth. A nutrient enema was administered. She passed a quiet night. There was a history of poor health and of continuous severe pain in the left hypochondriac region for two months previously, and of vomiting immediately after meals. Only light food could be taken. There had been no vomiting for three days before admission, and no blood had ever been seen in the vomited matter. Three years ago she suffered from indigestion for some time. She had always been very temperate and able to get good food. The family history was satisfactory.

Further examination next day showed that the heart's apex was in the left nipple line; the sounds were natural and the pulse was 96, of low tension. The mucous membranes were rather pale. She had several septic teeth and pyorrhœa alveolaris. The lungs were natural. The abdomen was in no pain, and no tenderness was caused by light palpation. The catamenia were regular. She was now menstruating.

In spite of absolute rest and avoidance of any food, not even water, by the stomach, there was a return of hæmorrhage. Morphine was repeated. On July 5th at 2.30 A.M. there was some nausea, and a little blood-stained mucus was brought up. She was fed only by enemata. On the 6th she had a little whey. Mr. Henry O. West ordered some bismuth and bicarbonate of soda in mixture. On the 7th at 9.30 P.M. there was a return of hæmorrhage in larger quantity. The morphine was repeated. Half a pint of saline solution was given per rectum every six hours. The temperature was normal. A nutrient enema (four ounces of milk, the yolk of one egg, and three drachms of glucose) was given every six hours. The rectum was washed out daily. No signs of blood were visible in the stools. The mouth was cleansed with antiseptics daily. The patient was not in the least thirsty, and had nothing by the mouth for three days. The tongue was cleaning. From this time convalescence advanced daily. Whey was found to cause some pain, and milk and water suited well in increasing quantities up to two ounces hourly by day and every two hours by night. Five grains of citrate of iron and ammonia in mixture were ordered on the 18th twice a day, and rectal feeding was stopped. Arrowroot and milk, beaten up eggs, and mashed banana were taken, then custard, milk jelly, and bread and milk. No pain was complained of. The patient was up and about early in August and left the hospital for the seaside on the 20th of that month, having gained weight and improved in colour.

There can be no doubt as to the nature of this case, and we may assume that there was an ulcer, or perhaps more than one, in the lesser curvature of the stomach which had existed for two months before any hæmorrhage occurred—

that is, before some small vessel, probably an arterial twig, was ruptured by the advance of the eroding ulceration. The recurrent bleedings are noteworthy. The first one occurred in spite of absolute rest and absence of all feeding by the mouth; not even a spoonful of water was given. The second one occurred after whey and milk and lime-water had been taken in small quantities, nutrition being maintained by enemata. As this was a more serious hæmorrhage, the question of surgical interference was discussed and arrangements were made for it in case of renewed bleeding. This happily proved unnecessary.

CLASSIFICATION.

Our knowledge in regard to gastric ulceration has been enlarged of late owing to the practice of modern surgery, and we are now able to classify these lesions under three conditions. We formerly recognised by the history and symptoms of gastric ulcers that they were acute and chronic; that some appeared to heal rapidly and gave no further trouble, while others proved rebellious to careful treatment. Inspections of the gastric mucosa on the operation table in some cases of severe recurrent hæmorrhage have revealed a lesion which had no resemblance to ulcer as commonly recognised in the post-mortem room, and conceived as existing beforehand. All that was apparent consisted in a series of small fissures, or chaps, from which blood oozed freely and continuously. Each of these being ligatured with fine thread ceased to bleed, and nothing further remained to be done; recovery followed. This oozing patch was regarded as an erosion, which, indeed, it appeared to be, hardly amounting to an ulcer. Cases of this kind have probably been regarded as instances of gastrostaxis, and we may assume that many of them cease to give trouble and heal kindly under appropriate treatment. We may fairly regard them as examples of a variety of ulceration, if we bear in mind the old surgical definition of an ulcer as a "solution of continuity." Some recent and careful observations by Dr. C. Bolton[1] of University College Hospital have shown that such erosions, although very difficult to find after death, may be detected by certain methods, and should certainly be regarded as superficial ulcers. It therefore becomes a question of degree. I confess that I am of his opinion in the matter. These lesions may be multiple, and it is certain that they are as apt to be serious sources of hæmorrhage as are the deeper ones. Mr. Butlin and I related a good example of this kind to the Clinical Society[2] in 1903, in which Mr. Butlin operated with advantage, and a rapid recovery followed.

TREATMENT.

The results of cases of gastric ulcer treated carefully in hospitals are, in the great majority, satisfactory, and have led some observers, Dr. W. P. Herringham[3] amongst them, to believe that in many of such patients there was probably no true ulceration present, but some much less serious condition. It may be that some of these patients were the subject of minor degrees of the superficial ulcerative erosion I have just described. Mr. C. Mansell Moullin and Dr. F. J. Smith have well described such cases. With regard to a fatal issue in all cases by hæmorrhage, I must add my experience to the effect that this is happily not a common occurrence. Whatever the lesion, or the degree of it, the treatment of the patient is the same, and it consists in absolute rest, recumbency with head low, and morphine given hypodermically. Nothing whatever is to be given by the mouth, not even iced-water or pieces of ice. Saline solution, in half-pint quantities, should be given by the bowel, and nutrient enemata consisting of from eight to ten ounces of peptonised milk, with yolk of egg and grape sugar, repeated three or four times each day for at least three days. The mouth should be cleansed with borax, thymol, and warm water several times a day.

We await the closing of any oozing vessel or arterial twig by clot, and this delicate process must not be disturbed by matters of any kind introduced into the stomach. These are apt to excite secretion of gastric juice which is unfriendly to a sore surface. Even nutrient enemata are apt to excite this secretion, as Dr. E. I. Spriggs[4] tells us, but the patient must be fed on something. After hæmorrhage, the next grave matter to bear in mind is the possibility of perforation of an ulcer, with alarming symptoms of pain and collapse, calling for immediate surgical action.

We may note that our patient suffered from some pain after taking small quantities of whey, and it may be that the excess of rennet in this may have acted as a peptic irritant. Milk and lime-water and cream are always safest for the first feeding by the mouth. An ice bag may be laid on the epigastrium during active bleeding, but should not be retained too long at a time.

I have said nothing so far as to medicines, save as regards morphine. We never use astringents now as was formerly the practice. Subnitrate of bismuth and calcined magnesia are the best to employ, a scruple of each, after a few days when the bleeding is stopped. The lower bowel should be washed out daily and the stools examined for melæna. Calcium lactate in 15-grain doses three times a day has been suggested, but I have not employed it, and adrenalin has been tried, but it was of no avail in one case of mine some years ago. I think that it is not a desirable agent in these cases, and I believe that in most cases we may dispense with any of these drugs if we carry out the physiological principles I have inculcated in every detail.

I should mention the desirability of performing gastro-enterostomy in cases where ulceration is found near the pyloric orifice on opening the stomach. The risk here is that pyloric obstruction may result from a scarred ulcer leading to dilatation and other difficulties. A subsequent operation for the relief of this may thus be avoided.

You are aware that many patients suffer from gastric ulcer without any hæmorrhage, or with very small bleedings. I am not concerned to speak about chronic ulcers to-day, and in regard to hæmorrhage from cancerous growth in the stomach I will only mention that we do not meet with this in persons under 40 years of age, and that there is seldom any serious loss of blood in such cases. Coffee-ground vomit is more common, and this may also be met with both in acute and chronic ulcers.

Apart from gastric ulceration, the most formidable cases of hæmatemesis that you are likely to meet with are those dependent on advanced cirrhosis of the liver. This is always a serious and often a terminal symptom in such subjects. The bleeding commonly occurs from rupture of varicose veins at the lower end of the œsophagus—œsophageal piles as they are sometimes called. The loss of blood is sometimes enormous, usually of very dark colour. Recurrence of it is almost certainly fatal. You will treat such cases just as you would any others. Happily, with the amendment now recognised in gross alcoholic habits, we do not meet with such examples so often as formerly. Melæna to a large extent occurs in these patients. The liver may be large, and is not always shrunken as might be expected when such an engorgement of the portal venous system is present.

Patients suffering from gastric hæmorrhage are always likely to do best in hospitals or nursing homes where they can secure skilled watching, and be saved from their own importunities and the dangerous meddling of relatives. The case I have related was tended with much skill and devotion by my house physician, Mr. West.

There are no specimens in our museum here to illustrate the superficial erosive ulcer. In the past these have been missed or overlooked at the necropsies for the reasons we have noted.

[1] Brit. Med. Jour., May 24th and August 27th, 1910. Post-mortem digestion rapidly effaces these very superficial erosions.
[2] Transactions of the Clinical Society, vol. xxxvii., 1903.
[3] St. Bartholomew's Hospital Reports, vol. xliv., 1909.
[4] Brit. Med. Jour., May 21st, 1910.

A CASE OF ACUTE PANCREATITIS; OPERATION; RECOVERY.

BY ARTHUR E. BARKER, F.R.C.S. ENG.,
SURGEON TO UNIVERSITY COLLEGE HOSPITAL, AND CONSULTING SURGEON TO THE QUEEN ALEXANDRA MILITARY HOSPITAL, MILLBANK, S.W.

THE subject of acute pancreatitis in all its varieties has received much attention of late years, and the seriousness of the affection has been abundantly shown. So far, the records of cases successfully treated by operation are comparatively few, although it is fair to assume that most, if not all, of the recoveries have been published, while many of the unsuccessful attempts at relief have been left unnoticed. It is satisfactory, therefore, to be able to add to the list of successes one more case where prompt surgical interference has been followed by complete recovery. My own personal experience of operations for the condition is not large and

the case now to be recorded is the only one in which recovery has followed. I have, however, seen, I believe, several cases in too serious a condition to justify any hope of improvement by operation, which have therefore been left untouched and which have succumbed. The good result in this case was due as much as anything to the prompt action of the medical man in charge in sending so serious a case at once for surgical relief.

On Feb. 21st, 1910, Dr. C. E. H. Warren of Selhurst sent me a message that a case of some acute abdominal affection was on the way to the hospital. She was seen at once on arrival, and recognised as being in a very serious condition. I could only be sure of one thing—i.e., that a grave abdominal lesion, accompanied by peritonitis, was present and called for immediate operation. The hospital notes are as follows.

The patient, a married woman, aged 40 years, was admitted into University College Hospital on Feb. 21st, 1910. Two days before (the 19th) she was suddenly seized with a severe pain of a griping character in the upper part of the abdomen above the umbilicus. She vomited and "trembled" with pain, but apparently no definite rigor occurred. The pain subsided, but had returned in paroxysms from time to time, causing further sickness. The bowels had not moved since Feb. 18th; the patient could not say whether flatus had been passed or not. Before admission two enemata were given without result.

Past history.—Six years ago, one month after the birth of her first child, she had a similar attack of pain and vomiting with constipation, and, again, six months ago, after the birth of her last child, there was another attack like the first which lasted 48 hours. All pregnancies had been normal; there had been no miscarriages. The patient's husband thought that after the first attack she was jaundiced, but there was no jaundice with the last attack.

State on admission.—The patient was well nourished and had not quite the peritonitic facies. The pulse was 124 and the temperature was 101·4° F. The abdomen was soft and not fuller than normal. The patient complained of pain in the epigastrium and the left hypochondrium. In the last situation and in the left lumbar region there was tenderness on palpation. There was no dulness in either flank, and no loss of liver dulness was noted. The kidneys were not to be felt. The rectum was empty and distinct tenderness was experienced on palpation with the fingers on its left wall at the level of the fundus uteri. An enema produced no result. The urine contained no sugar, blood, or albumin. There was practically no shock on admission.

First operation.—A review of the history and condition on admission did not appear to me to justify any positive diagnosis. It was plain, however, that peritonitis was present from some sudden cause, the nature of which was obscure. In view of this fact I opened the abdomen in the middle line below the umbilicus at 9 P.M. There was some clear, slightly blood-stained fluid in the general peritoneal cavity. The pelvis was first explored, and only a burst Graafian follicle was found. The sigmoid was not distended and contained hard fæces. The vermiform appendix was normal. The small intestine was everywhere markedly injected and a little dilated, but was not paralysed. It was traced from the cæcum to the duodenum, and several flakes of lymph were found upon it. The condition was puzzling until I drew down the transverse colon, when several patches of fat necrosis were seen in the great omentum close to the colon 4 or 5 mm. in diameter. A portion of the omentum so affected was tied off and removed for examination and showed the fat necrosis still more clearly when treated subsequently by Benda's method. The omentum was now torn through between the stomach and colon, and the small sac of the peritoneum opened. In it were found many more patches of fat necrosis, increasing in number as the pancreas was approached. This organ itself was felt to be hardened and swollen, especially at its head. I did not think anything further could be done then, and simply introduced an iodoform gauze tampon down to the pancreas and brought it out of the upper angle of the abdominal wound, the rest of which was stitched up in two layers.

On Feb. 22nd the patient had slept well and had been easy. The pulse was 112 and the temperature was 99·4°. The bowels were opened twice during the day, the result being constipated. Saline injections were returned. On the 23rd fæces were still passed of normal appearance. The conjunctivæ were slightly yellow; there was no glycosuria; the tongue was very dry. The patient was fairly well, but was very weak. On the 24th she vomited after food. On the 25th some of the plug was removed. The patient was slightly jaundiced. On the 26th the remainder of the plug was removed; she was still jaundiced. On the 27th a clay-coloured stool was passed after calomel. The temperature was 100·2°. On March 1st stitches were removed. The temperature was rising at night to 100·2°. On the 3rd, at 6.45 P.M., the patient was seized with abdominal pain from the nipples down to the umbilicus. There was at the same time tenderness over the whole abdomen, most marked over the tip of the right ninth costal cartilage. The pulse rose to 124. The temperature fell to 98° at 10 A.M. Morphia was given, but the pain continued all day. She began to vomit at 4 P.M. and did so three times, bringing up 2 ounces. On the 4th she vomited several times, bringing up 12 ounces in all, but the general condition seemed better. In the morning the temperature was 100·4° and in the evening 101·4°. There was no increase of distension. The pain continued the same as on the previous day, but the point of greatest tenderness was now over the tenth rib on the *left* side and no longer on the right side over the gall-bladder. She now began to take pancreatin tabloids on account of fat in the stools. On the 5th there were more pain and tenderness, and she was weaker. The temperature at 10 A.M. was 101°.

It now appeared to me that there must be some exacerbation of the inflammation in the pancreas, and I thought of opening and draining the gall-bladder. But when the pain was overcome by a general anæsthetic a distinct fulness could be felt in the neighbourhood of the spleen where the tenderness had been most marked before. I therefore proceeded to try to open the omental sac behind from the left flank.

Second operation.—On March 5th an incision was made starting two inches to the left of the navel and running obliquely upwards and backwards. Extensive fat necrosis was found in the extra-peritoneal fat, and portions came away on the gloves and were reserved for further examination. The peritoneal sac was opened behind the splenic flexure of the colon below the spleen, and at once about 6 to 10 ounces of blood-stained fluid streaked with pus escaped under considerable pressure. This was followed by a pretty free escape of venous blood, which ceased on the introduction of a large long rubber drain-tube as far as the pancreas. The mass felt before operation was now proved to be the enlarged pancreas head. The spleen did not appear to be increased in size. A somewhat smaller rubber tube was introduced beside the first into the tissues of the loin outside the peritoneum, and the wound was partially stitched up from below. Sterile gauze dressings were applied over all.

On the next and the following days the condition was fairly good, the discharge from the wound being moderate. From this on there is nothing special to record until April 10th, except an irregular temperature between 100° and 101·4°, consequent, I believe, on some difficulty in retaining the drain-tube in the omental sac. The note on April 10th states that the patient had improved steadily; she was stronger and looked much better. The temperature, however, was never quite normal, and on the previous night had been 103·6°. The discharge from the tube in the omental sac had continued abundant, but fluctuated in amount. At 2 P.M. on this day the patient was seized with pain over the fundus of the gall-bladder. Tenderness was also most marked over this spot, but radiated over the whole abdomen, especially in the left flank. The pain was very severe and was only relieved by a full dose of morphia. There was no rigor. The temperature at the onset was 102°, but fell at 10 P.M. to 100·6°. The patient vomited seven times to the extent of 24 ounces during the night, but felt easier in the morning. The pain remained over a palpable mass to the left of, and below, the umbilicus (? undrained area). There was no icterus. From this time there was steady improvement, the drain-tube was progressively shortened, and was left out finally on May 17th, a dry gauze dressing being applied.

On May 20th a number of carious teeth were removed and some more on the 27th. The patient now appeared to be in excellent condition and was free from all pain. She was eating well and had much increased in weight. She was

therefore allowed to go home on May 31st. The temperature had been normal for 12 days and the wounds were soundly closed.

Remarks.—The difficulty of diagnosis in this case was very great. In some ways the attacks resembled recurring appendicitis. But the tenderness and resistance were on the left side and were more marked above than below; indeed, there were little tenderness and no resistance over the cæcum. That some grave intra-abdominal inflammation was present, however, there could be but little doubt, and what this was could only be cleared up by opening the peritoneal cavity. In this obscurity I felt it best to incise in the middle line and even then the condition was not clear until the fat necrosis revealed the true state of things. The white patches in the great and gastro-colic omentum, standing out in contrast to the fat lobules and slightly stained serous membrane, were unmistakeable. These increased in number when the bursa omentalis was opened. There was only a little blood-stained serum in the latter, but the pancreas was felt to be swollen and tender. Drainage of the omental sac appeared to me to be indicated as much on account of possible increase of discharge from breaking down of the pancreas as for the release of any present at the moment. As a matter of fact, this first drain opening yielded comparatively little and soon closed. This seemed to point to the conclusion that the condition was still mainly retroperitoneal. This was proved to be the case by the subsequent course of the disease and the finding at the second operation of extensive fat necrosis in the retroperitoneal tissues, so that these required a separate drain-tube for themselves. But it was not until the lesser sac of the omentum was opened behind the colon that a large collection of inflammatory fluid was found. The exacerbations which occurred even after this was drained off appeared to me to be due partly to the difficulty of retaining the rubber tube in the omental sac, the opening into which was only of about the size of my gloved finger. But it may easily be that they were due to progressive invasion of the pancreas by the inflammatory process even after efficient drainage had been secured. Before the swelling in the left hypochondrium was discovered I was tempted more than once to open and drain the gall-bladder. But I am glad now that this was not done, as the opening of the omental sac behind the colon in the left flank could alone have relieved the patient. It may be suggested that to have drained the gall-bladder would have possibly reduced the infection of the pancreas. But this is only a supposition. The old maxim, *ubi pus ibi evacua*, held good here, and I was glad of its guidance. The result at all events left little to be desired.

As regards diet in this case directions were given to have all the light fluid food sterilised in order to minimise the chances of further infection of the pancreas from the intestine.

An attempt was made to obtain a regular analysis of the fæces from the pathological department, but there were difficulties in this direction which could not be overcome. What was undertaken led to no definite results. The bacteria which were cultivated from the discharge obtained from the pancreatic abscess were streptococci. The peritoneal effusion met with at the first operation proved to be sterile on cultivation.

It is gratifying to be able to add one more successful case to the relatively few that have been recorded of recovery from this fell disease. Prompt and prolonged drainage appeared to be all that was required in this case for recovery, and the great increase of flesh and general well-being justifies the hope that this recovery will be permanent. The removal of decayed teeth, with the relief of the pyorrhœa alveolaris, and the use of a complete denture will also reduce the chances of subsequent infection considerably.

Sequel of the above case.—The subsequent history of this case adds, I venture to think, considerably to its interest. The patient, of whom I heard from time to time since her discharge from hospital, remained well up to the beginning of this month (October, 1910). On the morning of Oct. 14th last I was told that she had been readmitted with serious abdominal symptoms, which had set in on the 13th, and naturally thought of a recurrence of the pancreatitis. On seeing her she at once struck me as being very ill; her tongue and lips were dry; she was in great pain and looked pinched. The temperature was subnormal (98·2°), and the pulse 124. The pain was now in the lower part of the abdomen and the tenderness most marked in the left hypogastric region. The area in which the former pancreatic swelling had been situated was normal and both flanks were resonant. The question of strangulation by band following the former operation was considered and was thought probable. But remembering that pancreatitis may recur and that the symptoms of the previous illness were very like those now present, I thought the best course was to open the abdomen through the old scar in the left flank and to explore the condition from there. This was done on Oct. 14th, at 9 P.M., when empty coils were traced to the cæcum and very much distended gut to a congeries of coils held together by adhesions lying in the pelvis. The latter were drawn up with some difficulty after separating numerous adhesions and proved to be a volvulus twisted over some of the adhesions. When all the latter had been freed and free inflammatory fluid had been mopped out the contents of the distended gut were squeezed through the liberated volvulus into the empty gut and onwards into the colon and the wound was closed. But before this was done I took the opportunity of examining the pancreas with the fingers and found nothing abnormal to the touch except that the organ appeared to be smaller than usual. There was no trace this time of any of the fat necrosis so obvious in the former attack, and the urine and fæces which were passed later (17th) were normal.

The patient made a good recovery after some days of great pain and rise of temperature, and is now (Oct. 25th) looking and feeling very well, the wound being healed by first intention. The original attack in this case was not due to one of those fulminating processes in which wide sloughing of the pancreas occurs, from which, I believe, no recoveries under any treatment can be expected. But the suddenness and severity of its onset, with fever, peritonitis, and fat necrosis, justify its being placed among the acute cases. The opportunity of examining the abdomen *in vivo* some eight months after an attack of pancreatitis must be a rare one, and the absence of any palpable evidence of damage from the earlier inflammation of the pancreas encourages the hope that prompt drainage from behind may serve to arrest the disease in other cases.

Harley-street, W.

PHAGOCYTOSIS OF ERYTHROCYTES BY ENDOTHELIAL CELLS:

SOME POINTS IN CONNEXION WITH IT, AND A METHOD FOR ITS DEMONSTRATION.

BY W. O. MEEK, M.B., B.S. LOND.,
ASSISTANT DIRECTOR, LOUIS JENNER CLINICAL LABORATORY, ST. THOMAS'S HOSPITAL.

(*From the Pathological Laboratories, St. Thomas's Hospital.*)

OF previous laboratory experiments on the phagocytosis of red blood corpuscles, the greater number have been performed on the blood of animals artificially immunised to foreign erythrocytes. The iso-agglutinins (for erythrocytes) of human serum have been the subject of much investigation by Hektoen[1] and others. Such sera may be divided, as regards their origin, into two classes: (*a*) "natural" agglutinating sera, where the serum from a normal person agglutinates the red corpuscles of other normal individuals; and (*b*) "immune" agglutinating sera, where the sera from cases of disease agglutinate the erythrocytes of other diseased or normal human beings.

The power of such sera to bring about phagocytosis of the red corpuscles which they agglutinate has not been investigated to the same extent. Recently Dudgeon[2] has investigated the hæm-agglutinins, hæm-opsonins, and hæmolysins present in human blood sera. In the experiments to demonstrate phagocytosis he employed washed human leucocytes from normal and "immune" bloods. Out of a large number of observations he noted few instances in which phagocytosis of red corpuscles was present to a marked extent. At the conclusion of his second communication he states:—

In the concluding remarks in the preliminary paper on hæm-opsonins it was stated that "the experiments referred to in this communication entirely agree with the observations of Barratt and Keith, conducted

[1] Hektoen: Journal of Infectious Diseases, vol. iv., p. 297.
[2] Dudgeon: Proceedings of the Royal Society, Series B, vol. lxxx., 1908; vol. lxxxi., 1909; vol. lxxxii., 1909.

with the blood sera and cells from the lower animals. There was nothing to show that the agglutination, opsonic, or hæmolysing properties of normal or immune sera on red blood corpuscles have any direct relation to one another." From the investigations which have been made for this report, some of which have been referred to, it has been noted that a serum may hæmolyse, agglutinate, and incite phagocytosis of certain red cells, but although it may be capable of agglutinating and hæmolysing certain red cells, yet the degree of phagocytosis which is present may be negligible, or phagocytosis may be present without the other phenomena: on the other hand, a serum which has a high agglutinative value is more likely to give a somewhat similar incitor reaction than otherwise, although not necessarily.

Emery,[3] summing up the question of the identity or otherwise of thermostable opsonin and amboceptor, states:—

> There is an additional possibility that the part of a thermostable opsonin may be enacted by agglutinins. I believe that in the case of the hæm-opsonins of normal human serum the substance is a thermostable agglutinin with a second thermolabile zymotoxic group. Natural hæm-opsonic sera are, as far as I have seen, always powerful agglutinators of the red corpuscles which they opsonise, and when they are heated to 60° C. the opsonic power is destroyed, but the agglutinative faculty is unaltered.

In many diseases there are marked post-mortem evidences of red corpuscle destruction and phagocytosis in certain tissues, though such appearances are of extremely rare occurrence in the circulating blood during life. In such tissues the cells concerned in the phagocytosis are almost entirely "macrophages" or endothelial cells. The red corpuscles in such tissues may often be seen to be agglutinated into masses. The object of the present investigation was to determine whether these cells could be shown, *in vitro*, to evince a special aptitude for the phagocytosis of erythrocytes, and in what manner phagocytosis was related to the presence of hæm-agglutinins. Sleeswijk[4] and others have, in isolated instances, employed endothelial cells obtained from artificially induced effusions in animals, in connexion with experiments on hæmo-phagocytosis.

Technique.

The endothelial cells employed throughout this investigation were obtained from the ascitic fluid from cases of hepatic cirrhosis with ascites. Such fluids usually contain a high proportion of endothelial cells and may with care be obtained practically free from erythrocytes, a point of importance. The fluid was collected direct from the syphoning tube into sterile normal saline containing 0·85 per cent. of sodium citrate.

In the preparation of the cells a considerable bulk of fluid was centrifugalised in a water-driven centrifuge. The sediments from the various tubes were collected and re-centrifugalised. The deposited cells were then washed in two or three changes of normal saline solution, the mass of cells being gently broken up with a platinum wire between each washing. Finally, an emulsion of convenient density was made up in saline solution. In none of the ascitic fluids used did the centrifugalised cells show any appreciable phagocytosis of the erythrocytes present in the fluid, though such phagocytosis is occasionally very obvious. The endothelial cells so washed often shrink considerably in size and appear much smaller than when examined unwashed. The shrinking may render the cells difficult to distinguish from small lymphocytes in film preparations. The cells were used as soon as possible after, usually within eight hours of, their removal from the patient. On two occasions they were not used until 24 hours after withdrawal. In one of these cases their activity appeared unimpaired, in the other their phagocytic powers were somewhat reduced.

Attempts were made to obtain suitable endothelial cells from the guinea-pig either by scraping the cut surface of the spleen immediately after death or by the injection of sterile physiological saline solution into the peritoneal cavity. In the former case it was found very difficult to obtain an even emulsion of cells, and in the latter the number and nature of the cells present in the artificial effusion varied greatly.

The red cells employed consisted of 10 per cent. suspensions in normal saline solution of the washed red cells from a normal man and various cases of disease. The blood sera were obtained from normal persons and from a variety of hospital patients.

The phagocytic experiments were conducted by placing serum, erythrocytes, and endothelial cells in small lengths of glass tubing sealed at one end. The open end was covered with sealing-wax, and the tubes were incubated in the vertical position. They were placed in an air incubator at 37° C., and in nearly every case were left in the incubator for 30 minutes. By this method, the erythrocytes and the endothelial cells fall to the bottom of the tube and can be obtained, for purposes of making a film, with a minimum of fluid. Care was employed, in spreading the films, to avoid breaking up any agglutinated masses of red cells which might be present.

The agglutinative action of the sera upon the red corpuscles was investigated by incubating equal volumes of serum and washed red cells in a capillary pipette at 37° C. for 30 minutes. The microscope was employed in deciding whether agglutination was present or not. After this incubation the presence of hæmolysis was looked for. Apart from this no detailed investigation of the hæmolytic powers of the sera was made. In only one or two instances out of all the sera examined was a hæmolytic action noted under the above conditions (i.e., equal parts of serum and 10 per cent. suspension of erythrocytes at 37° C. for 30 minutes).

On the Power of Endothelial Cells to Ingest Erythrocytes.

The endothelial cells used throughout these experiments showed most marked powers of phagocytosis. They were able to ingest a large number of red corpuscles per cell—a fact partly due, no doubt, to their size. In the presence of a suitable serum the cells rapidly became packed with erythrocytes to such an extent as to render enumeration of the included cells impossible. To borrow a phrase from bacterial phagocytosis, almost every cell on a film was a "glutton." The loaded cells presented much the appearance of the phagocytic cells seen in the sinuses of a spleen where red cell destruction is going on. When the process of phagocytosis was watched on a warm stage the endothelial cells were seen to fill themselves with red cells within a few minutes to such a degree that the nucleus of the phagocyte appeared to be forced out of the cell through lack of room, and was seen projecting as a bud from the cell outline.

The process quickly reaches a maximum, and little difference in the degree of phagocytosis was noted when mixtures of cells, serum, and erythrocytes were incubated for half an hour or for two or three hours. The longest period for which such a mixture was incubated was ten hours. In this experiment the engulfed red cells were seen to be somewhat shrunken and to stain darkly, but no granules of pigment were recognisable.

This enormous phagocytic power of endothelial cells towards erythrocytes contrasts strongly with the behaviour of the large mononuclear leucocytes of the blood in Keith's[5] experiments. He states that occasionally these cells were seen to have taken up one or two red cells, but the extent of the phagocytosis shown by them was insignificant.

On the Relationship between the Agglutinating Power of a Serum for Erythrocytes and its Ability to Cause Phagocytosis of those Erythrocytes.

From the examination of a considerable number of sera it may be stated briefly that where any given serum caused agglutination of any given sample of washed red corpuscles, when this unheated serum was mixed with these corpuscles in the presence of a suspension of endothelial cells and incubated, the red cells were invariably ingested by the phagocytes. Conversely, in no case where a serum failed to agglutinate certain red corpuscles was it found capable of causing them to undergo phagocytosis. This held good whether the serum employed was an example of a "natural" or an "immune" agglutinating serum, and no difference in the hæm-opsonic powers of these two classes of sera was found, provided that the agglutinating powers of the two were equal. When the phagocytic experiments were negative they were conclusively so. The endothelial cells, in the presence of serum and erythrocytes (where such serum had no agglutinative action on the erythrocytes) showed practically no tendency to engulf the erythrocytes, and it was no uncommon thing to examine several hundred endothelial cells on a film without finding a single ingested blood corpuscle. Two examples may be cited:—

I. Of the sera from three cases of pernicious anæmia, A, B, C, serum A caused marked agglutination and great phagocytosis of red corpuscles from a normal individual. Sera B and C caused no agglutination of the normal red cells and *no* phagocytosis was seen on films.

[3] Emery: Immunity and Specific Therapy, p. 285.

[4] Sleeswijk: Ueber den Bau der Opsonine, Centralblatt für Bakteriologie, I. Orig. xlvi., 1908, p. 513.

[5] Keith: Proceedings of the Royal Society, Series B, 1906, vol. lxxvii., p. 537.

II. Sera D, E, F, from three normal males. Of these D was an example of a "natural" agglutinating serum and agglutinated the red cells of X (a normal man) strongly. It also caused great phagocytosis of X's erythrocytes. Sera E and F caused no agglutination and *no* phagocytosis of X's erythrocytes.

Throughout the experiments the extent of the phagocytosis brought about by a given serum was found to vary directly with the degree of agglutination which that serum produced on the red cells employed. Where agglutination was marked almost every endothelial cell was loaded with erythrocytes, so as to render its contents uncountable with accuracy; where agglutination was only slight the phagocytosis was correspondingly less.

In the majority of sera examined, and especially in those from normal individuals, the opsonic power of the sera was destroyed more or less completely by heating to 58° C. for half an hour. In such sera the agglutinating power may be little if at all impaired by this heating. The opsonic power can be restored by re-activating with fresh normal serum. The opsonin in "natural" agglutinating sera is then, as a rule, thermolabile, and its presence or ability to exert its action is closely related to the presence of agglutinins. Not all sera from apparently normal persons, however, lose their opsonic power on heating; one such serum retained its opsonin for erythrocytes after heating to 60° C. for an hour, though both its agglutinating and opsonic powers were considerably reduced. Such a "natural" hæm-opsonic serum contains a large amount of thermostable opsonin.

The effect of the hæm-opsonin present in a serum upon the endothelial cells was strikingly illustrated in films from the phagocytic experiments. In the presence of opsonin the agglutinated masses of red corpuscles are covered with endothelial cells, exhibiting a high degree of phagocytosis, and comparatively few endothelial cells are found lying loose on the film. There is no evidence of any agglutination of the endothelial cells, which are usually spread evenly over the clump of erythrocytes which they are ingesting. If, however, a serum containing thermolabile opsonin, and from which the opsonin has been removed by heating, be employed no such distribution of endothelial cells over the agglutinated erythrocytes is seen. The endothelial cells are scattered over the field and show no tendency to collect in the neighbourhood of the agglutinated red corpuscles. And this although the agglutinating power of the serum has been little, if at all, reduced by the amount of heating necessary to destroy the opsonin.

By employing the warm stage this attraction of the endothelial cells towards the agglutinated erythrocytes is very obvious and is seen to occur with considerable rapidity. On films where the agglutination of red cells is only slight and the clumps consist of but very few erythrocytes, only one or two phagocytic endothelial cells may be attached to each clump.

The following experiments serve to show how closely the degree of phagocytosis produced in a phagocytic mixture (erythrocytes, endothelial cells, and serum) is dependent upon the extent of red cell agglutination.

A. The serum used was from a case of bacilluria (B. coli) and showed a powerful agglutinative effect on the normal red cells. The hæm-opsonin this serum contained was thermolabile. In each case 1 volume of the serum or diluted serum was mixed with 1 volume of a 10 per cent. suspension of normal red cells and 1 volume of endothelial cells.

No.	—	Agglutination.	Phagocytosis.
I.	Unheated undiluted serum.	Very great.	Very great. Uncountable.
II.	Undiluted serum heated to 60° C. for 15 minutes.	Great.	50 cells contained 4 red corpuscles.
III.	Unheated serum diluted 1 in 2.	Great.	Uncountable.
IV.	Unheated serum diluted 1 in 10.	Slight.	50 cells contained 58 red corpuscles.
V.	Unheated serum diluted 1 in 20.	Very faint.	50 cells contained 9 red corpuscles.

The agglutination in IV. and V. was only visible microscopically. The serum being diluted before its admixture with the erythrocytes and endothelial cells, the actual strength of serum in II., III., IV., and V. was 1–3, 1–6, 1–30, and 1–60 respectively.

B. Serum from a healthy and presumably normal individual intensely agglutinated and slightly hæmolysed normal red cells (from another healthy man). The opsonin in this serum was largely thermostable. In each case the serum was mixed with equal volumes of suspension of normal erythrocytes and endothelial cells.

No.	—	Agglutination.	Phagocytosis.
I.	Unheated serum.	Very great.	Very great. Uncountable.
II.	Serum heated to 60° C. for 15 minutes.	Very great (less than I.)	Very great (less than I.)
III.	Serum heated to 60° C. for 60 minutes.	Slight.	50 cells contained 84 red corpuscles.

On adding normal serum (from the same source as the erythrocytes) to the sera in II. and III. and repeating the experiment phagocytosis was moderately increased in each case.

C. The serum of a rabbit immunised to human erythrocytes powerfully hæmolysed human red cells *in vitro*. It was inactivated by heat and considerably diluted to various strengths. Normal red corpuscles were agglutinated in varying degree by the various serum dilutions. They were then washed and mixed with serum (from the same source as the red corpuscles) and endothelial cells, equal volumes of the three constituents being taken. The serum employed (inactivated) caused agglutination, but no phagocytosis of human red cells in a dilution of 1 in 100.

No.	—	Agglutination.	Phagocytosis.
1	Erythrocytes agglutinated by inactivated serum 1 in 50, 1 volume. Normal serum, 1 volume. Endothelial cells, 1 volume.	Very great.	Uncountable.
2	Erythrocytes agglutinated by inactivated serum 1 in 100, &c.	Slight.	50 cells contain 51 erythrocytes.
3	Corpuscles agglutinated by inactivated serum 1 in 200, &c.	Very slight.	Slight phagocytosis where red cells were clumped.

In a similar manner an agglutinating serum with thermolabile hæm-opsonin was de-opsonised by heat and allowed to agglutinate normal red corpuscles, the serum being diluted so as to produce varying degrees of agglutination. The agglutinated red cells were washed and subsequently incubated with normal serum and endothelial cells. The phagocytosis varied with the degree of agglutination. Other experiments on the same lines as the above gave similar results.

Attempts were made to demonstrate the presence of phagocytosis by employing red cells and serum from the same case of disease. The patients from whom the blood was obtained were examples of those conditions in which marked destruction of red corpuscles is found after death—e.g., severe cases of typhoid fever and of pernicious anæmia. In no case, however, was any phagocytic effect obtained. In some cases where the endothelial cell emulsion included a few red cells, agglutination and phagocytosis were apparent, but, by substituting an emulsion free from blood, neither phenomenon was seen. For this reason a preparation of phagocytes free from red blood corpuscles is of great value in such investigations. In none of the cases in which the serum and red cells were examined for auto-phagocytosis was the phenomenon of auto-agglutination present, though, of course, many of the sera agglutinated normal red cells and the "immune" red cells were agglutinated by normal serum.

It seemed possible that phagocytosis of red blood corpuscles, by the action of their own serum, might be demonstrated if the washed red cells were exposed to the action of various toxic substances and then washed again and incubated with their own serum and endothelial cells. For this purpose normal red cells were incubated with diphtheria toxin and

others exposed to the action of dilute oxalic acid or hypotonic saline solution of such strengths as to produce faint hæmolysis; through suspensions of others coal-gas was passed. The subsequent phagocytic experiments were in all cases negative.

The effect of artificially agglutinating normal erythrocytes was also tried. N/100 HCl was the agglutinating agent employed. Washed normal red cells in 10 per cent. emulsion were incubated with N/100 HCl for 30 minutes. Subsequently the supernatant fluid was pipetted off and the agglutinated red cells were washed in several changes of normal saline solution, the tubes being agitated sufficiently to ensure thorough washing without breaking up the clumps of cells too much. The agglutinated cells were incubated with their own serum and endothelial cells. The ultimate agglutination was moderate in amount, and there was a considerable degree of phagocytosis, most marked in the region of the clumps of corpuscles.

This was repeated on several occasions with a similar result, though the amount of the phagocytosis was less than that obtained with agglutinating blood sera which produced a like amount of agglutination. Control experiments, using erythrocytes untreated with HCl, were, of course, negative, as also were experiments in which the serum was replaced by saline solution or by suitably diluted HCl.

In other experiments the red cells after agglutination with N/100 HCl were placed in contact with N/100 NaOH for 30 minutes, then washed and incubated with their own serum and endothelial cells. The action of the alkali was to increase the agglutination without making any appreciable difference to the degree of phagocytosis.

If dilute HCl be added to a mixture of serum, red corpuscles, and endothelial cells, the serum and corpuscles being from the same normal individual, agglutination and phagocytosis, both slight in amount, are produced. For example, normal red cells and normal serum from the same source, endothelial cells, and N/100 HCl (one volume of each) were incubated. The resulting film showed slight agglutination, and 50 cells contained 17 erythrocytes.

Conclusions.

1. That preparations of endothelial cells are especially suitable for observations on hæmo-phagocytosis.
2. Human blood sera, whether from "natural" or "immune" sources, which cause agglutination of other human red blood corpuscles, can be shown to also bring about phagocytosis of these erythrocytes by endothelial cells.
3. That the amount of "hæm-opsonin" in such sera is closely related to the amount of "hæm-agglutinin" which they contain.

I have to thank Dr. P. N. Panton for supplying me with material, and both him and Mr. L. S. Dudgeon for their advice on certain points.

SOME NOTES ON "DELAYED CHLOROFORM POISONING."

BY E. D. TELFORD, F.R.C.S. ENG.,
SURGEON TO THE MANCHESTER HOSPITAL FOR SICK CHILDREN, PENDLEBURY.

OF the various post-mortem findings which are now regarded as characteristic of death from "delayed chloroform poisoning" the fatty liver is at once the most constant and most striking sign. The liver is large, of a bright yellow colour, and shows profound fatty changes in its cells. The extent of these changes has suggested to some writers that a morbid state of the organ must have been present before the administration of the anæsthetic. It is, however, unlikely that any grave abnormal condition of the liver could exist without yielding some clinical sign of its presence previous to the administration of the anæsthetic. Moreover, the changes in the organ, however marked, are but the total of the changes in its constituent cells, and such changes may well develop within the three or four days which precede death.

A case which happened in my practice recently proves that a fatal result from "delayed chloroform poisoning" is possible in a patient whose liver at the time of operation presented nothing abnormal to the hand or eye.

CASE 1.—The patient was a woman, aged 47 years, who had shown signs of pyloric obstruction for 17 years. She was in a weak and emaciated condition. The urine was not examined for diacetic acid or acetone. The operation disclosed a dilated stomach with pyloric stenosis due to healed ulcer and a posterior gastro-enterostomy was done. The anæsthetic was chloroform given on lint, and the administration lasted in all for 45 minutes. The liver was seen and handled at the time; it was absolutely healthy in size and appearance. For 36 hours the course of the case was normal, but at the end of this time vomiting began and continued without intermission till death. The later vomits were "coffee-ground." The pulse-rate gradually increased, delirium and restlessness developed, and there were ceaseless efforts to get out of bed until coma set in. The breath smelt of acetone, but unfortunately no specimen of urine was tested. There was no rise of temperature, and the abdomen remained flat and supple throughout. Death followed exactly four days after the operation.

At the post-mortem examination the abdominal wound and operation area were perfectly healthy. The liver was slightly enlarged; it was of a bright yellow colour, and on section showed an extreme degree of fatty degeneration. The organ was loaded with fat and was greasy to the touch. There was also definite fatty degeneration of both kidneys. These were the only signs found at the examination. I believe that this death was due to "delayed chloroform poisoning."

The opportunity of handling and inspecting a liver four days before death from "delayed chloroform poisoning" is almost unique, and the above case is of much interest, proving, as it does, that gross fatty changes may happen to a liver which had presented an absolutely normal appearance four days before death. This case may throw some light on the cause of death in some cases of gastro-enterostomy in which the patients die apparently from "exhaustion" within from three to four days of the operation. Many of the patients on whom gastro-enterostomy is done are in a state of starvation, and some have fairly advanced malignant disease. Both these conditions are well known as predisposing causes of acidosis, and it is at least likely that in some of these cases the administration of chloroform is sufficient to hasten the catastrophe.

The suggestion that "delayed chloroform poisoning" is an acid intoxication was first made by Brackett, Stone, and Low, and since the appearance of their important paper this view has received support from many writers. Of the various manifestations, that condition known as "recurrent" or "cyclic" vomiting has been most commonly selected as offering the closest analogy to the phenomena of post-anæsthetic acidosis. With some writers the symptoms occasionally seen after the administration of a general anæsthetic have been regarded as those of "recurrent vomiting" which has been precipitated by the anæsthetic. The analogy, close as it is, is yet far from complete.

Grave as the symptoms of "recurrent vomiting" may be, recovery is the rule and is often astonishingly rapid and complete, whereas a patient exhibiting the same degree of symptoms due to "delayed chloroform poisoning" will almost assuredly die. Death in "recurrent vomiting" is uncommon, and when it does occur happens only as the end of a series of attacks which have steadily increased in frequency and severity. Death in "delayed chloroform poisoning" is the rule and follows rapidly on a single fulminant attack. The post-mortem findings are different in the two conditions. In the few recorded instances of post-mortem examination in children dead from "recurrent vomiting" the appearances are very variable and the fatty liver which is so constant a feature of "delayed chloroform poisoning" is not always found. Much as "recurrent vomiting" and "delayed chloroform poisoning" resemble each other, likely as it is that they own a common pathology, it is evident that there is some radical difference between them.

It may be suspected that of the cases reported as due to "delayed chloroform poisoning" some, and these mostly the instances of recovery, are simply cases of recurrent vomiting precipitated by the operation or anæsthetic. In susceptible children attacks of "recurrent vomiting" are not infrequently excited by emotional causes. I have seen more than once a severe and typical attack ensue within a few hours of the reception of a rickety child into a hospital, and the case which I report below appears to be a clear instance of an attack of "recurrent vomiting" induced as the result of an operation.

CASE 2.—A male child, aged 5½ years, was admitted to the

Manchester Hospital for Sick Children suffering from a right inguinal hernia. The urine examined before operation showed no evidence of diacetic acid or acetone. A "radical cure" of the hernia was done under ether. The drug was given by an Allis inhaler after a preliminary induction of anæsthesia by 3 cubic centimetres of ethyl chloride. The total duration of the anæsthesia was 20 minutes, and 2 ounces of ether were used. On the patient's return to the ward he vomited once and seemed to recover completely from the effect of the ether. Nothing of note occurred until 36 hours after the operation, when the boy was noticed to be very stupid and drowsy. It is noteworthy that there was neither screaming nor restlessness. The temperature rose to 100° F. and the pulse was 120. Vomiting began during the night and continued for 30 hours, one of the later vomits showing some altered blood. The urine contained acetone, and the breath had the characteristic odour of the drug. The coma continued from the Friday night till early on the Sunday morning, when, with the cessation of the vomiting, the boy began rapidly to improve. By the Monday evening he was absolutely well. Acetone continued to be found in the urine for ten days in all.

There can, I think, be no doubt that this case was a severe attack of "recurrent vomiting," precipitated by the anæsthetic or by operation, and was not a case of post-anæsthetic poisoning. Owing to his alarming condition the boy's parents were summoned to the hospital, but when the mother saw him she said at once, with an air of obvious relief, "Oh! he will be all right soon. I have seen him like this often." Further inquiry elicited the fact that the boy was the subject of "recurrent vomiting," and he has, in fact, had some further attacks since leaving the hospital.

A review of the literature of "delayed anæsthetic poisoning" will show at once that the vast majority of the cases have occurred after the administration of chloroform, and that but few have been noted after the use of ether. It appears probable from both clinical and experimental work that any general anæsthetic induces a state of acidosis, and the relative immunity from untoward results shown by the ether cases is probably due to the fact that the danger lies more in embarrassed excretion than in increased production of the acid bodies, and that ether hampers the kidneys less in their work than does chloroform.

The risks attendant on the use of chloroform in operations for acute septic conditions of the peritoneum have been noted by several writers. It must have happened in the practice of every surgeon who has had much experience of abdominal work that a case of septic peritonitis, whether general or local, which gave rise after operation to no great anxiety, has quickly gone to the bad and the patient has died within two or three days of the intervention. This disaster may occur in the case of small and well-localised appendicular collections of pus. The abscess is easily reached, it may not be necessary to open the general peritoneal cavity, the friends are comforted by the assurance of a hopeful prognosis, and the patient is dead within three days. The first sign of trouble is vomiting, beginning without obvious cause, some 36 hours after the operation. The pulse-rate is a little quickened. The vomiting continues; treatment is without effect, yet the whole time the abdomen is flat, supple, and moves well. The further spread of any peritoneal inflammation can be excluded. Within a few hours of the onset of vomiting the patient's mental condition becomes clouded; there is some delirium, with restlessness; coma begins and deepens until complete. Meanwhile the pulse is becoming gradually weaker and more rapid. The breath smells of acetone and the urine gives the reaction for diacetic acid and acetone. The later vomits may be "coffee-ground." There is sometimes a slight icteric tinge. The breathing towards the end may resemble that of diabetic coma, to which, indeed, the general resemblance of the case is great. There may be a marked rise of temperature towards the close. The end comes in from 36 to 48 hours from the onset of vomiting, and there has never been throughout the case any local sign which would suggest an acute abdominal infection. The explanation of "appendicular toxæmia" is usually tacitly accepted, but if a post-mortem examination be made there is an entire absence of those signs which are commonly regarded as indicating a death from septic intoxication. The liver is large, and obviously very fatty; the kidneys are slightly swollen, pale in colour, and show the changes of cloudy or of fatty degeneration; the heart muscle is pale and of reduced consistence. On microscopic examination fatty changes are always to be demonstrated in the liver, usually in the kidneys, and often in the heart.

The cause of death is acid intoxication following the use of chloroform in an acute septic condition. I have during the past two years watched three such cases from the initial vomit to the post-mortem examination—one in my own practice and two in the practice of other surgeons. It is probable that in some cases in which patients die from acute septic conditions the action of the chloroform has added the last straw to the burden of a patient already fighting for his life against septic infection. There can be no doubt that many of the milder cases recover and so escape notice. Why here and there a case is picked out is, as with other instances of "delayed chloroform poisoning," the chief mystery of the condition.

Cases such as the above form a very strong indictment against the indiscriminate use of chloroform. Since my last report[1] of cases of "delayed chloroform poisoning" I have used ether in almost every case of operation occurring in my ward at the Pendlebury Hospital. The ether is given by the "open" method from an Allis inhaler after a preliminary induction of anæsthesia by ethyl chloride. I have used this method in over 800 cases and have always found it most satisfactory. The safety and rapidity of the method are of the greatest help where a large number of cases have to be crowded into the morning's work. The children whilst on the table are of a good colour and have never in a single instance given cause for a moment's anxiety. On their return to the ward the "sisters" report that these children vomit less than do the chloroformed patients, and that, if they do vomit at all, they do so within the first hour, and afterwards return very quickly to a fully conscious condition. No untoward after-effect has ever been noted. Lastly, it will be found that with increasing experience the supposed limitations of ether as an anæsthetic will recede almost to vanishing point.

Manchester.

A CASE OF POISONING BY ACONITE.

BY W. EDGECOMBE, M.D. LOND., M.R.C.P. LOND., F.R.C.S. ENG.

ON Oct. 15th, at 10 P.M., I was called to see a man, aged 60 years, who was said to have accidentally taken poison. On arrival at his hotel I found Dr. M. B. Ray and Dr. G. L. K. Pringle of Harrogate already in attendance, having been urgently summoned. We elicited with difficulty from the patient's wife, who was very deaf, the statement that the patient had, at 6 P.M., while alone, taken a dose of his medicine; had dressed and gone down to dinner at 7 P.M., and during the meal had felt very ill and appeared dazed and giddy. He had made no remark as to having noticed anything peculiar about his medicine. He was taken up to his room, undressed, and put to bed, when he speedily became unconscious. We found he had by him a mixture containing salicylate of sodium to be taken in effervescence with an acid julep; and a six-ounce bottle of liniment for external use, made up of one ounce each of lin. aconiti, lin. belladonnæ, lin. chloroformi, tinct. capsici, and two ounces of oil of gaultheria. It was supposed that he had taken one tablespoonful of his liniment in mistake for one of the julep; no one had seen him take it, but a tablespoon smelling of the liniment was found in a glass on the dressing-table.

The patient's condition was as follows. He was unconscious, lying on his back with a flushed face and stertorous breathing; he had convulsive clonic movements of both hands and arms, and occasionally of the legs and body; the eyes showed slow conjugate movements to right and left; the corneal reflex was absent; the pupils were of medium size, neither contracted nor dilated, and responded sluggishly to light; there was no sign of paralysis of the face or limbs. The pulse was rapid, 110, feeble, and of low tension, and the heart's apex was well outside the nipple line and the sounds were feeble. Not the faintest trace of the smell of gaultheria was noticeable about the breath.

The first question was, Had poison been taken at all, or was the case one of cerebral disturbance or uræmia? The evidence that poison had been taken was limited to the spoon smelling of the liniment; and this might well be explained by the patient having poured some out with which to rub

[1] THE LANCET, Feb. 29th, 1908, p. 623.

himself. There was no dilatation of the pupils such as would certainly have been expected four hours after taking a considerable dose of belladonna; nor was there about him any smell of wintergreen, the odour of which is so penetrating and characteristic as to be readily recognisable. We learnt afterwards that he had complained of distension and pain over the stomach region, but the symptom was not present at the time. The rapid feeble pulse was against cerebral hæmorrhage, but did not negative the possibility of thrombosis, though the absence of any paralysis was against both these. The absence of high tension of the pulse was against uræmia; moreover, a specimen of urine drawn off by the catheter was found to be free from albumin and sugar. On the whole, I thought the probability was that he had not taken the poison and that the symptoms were due to some obscure cerebral irritation. However, it seemed wise to wash out the stomach, although so long a period as four hours had elapsed since the dose was said to have been taken. The introduction of the stomach-tube promptly caused a copious vomit, which smelt strongly of wintergreen, and proved conclusively that the liniment had been taken.

The patient's condition was now somewhat critical; the pulse varied from 130 to 140, was extremely feeble, and at times was felt with difficulty; the extremities were cold and the lips blue, but the face retained a dusky flush; the convulsive movements were increasing. It seemed clear that the aconite was the poison mainly at work and was causing extreme depression of the heart. I gave the patient 10 minims of liq. strychninæ hypodermically and injected eight ounces of hot strong coffee slowly into the rectum, applied hot bottles, and wrapped him up in hot blankets. After about an hour, during which his condition gave rise to great anxiety, he began to rally, became semi-conscious, and rambled in his speech; the convulsive movements gradually ceased and the pulse became fuller and stronger and the body surface warm. At 3 A.M. his condition had so far improved that I ventured to leave him in charge of a nurse. The next morning he was better; the pulse, though still rapid, was of good quality, and beyond being somewhat dazed and shaken he expressed himself as feeling very well, and refused to believe that anything serious had happened. For the next few days, during which his only complaint was of numbness and tingling in the fingers, he was kept at rest in bed until his circulation had resumed its usual state, which showed itself to be one of high tension, bounding vessels, and hypertrophied heart. His recollection gradually came back of having noticed a pungent taste with tingling of the mouth after taking his medicine, but he thought nothing of it at the time, nor did it occur to him that he had made any mistake.

The quantities contained in the tablespoonful dose of the liniment were 40 minims each of lin. aconiti, lin. belladonnæ, lin. chloroformi, and tinct. capsici, with 80 minims of ol. gaultheriæ. The gaultheria and chloroform may be neglected as being insufficient in quantity to produce much toxic effect. The capsicum, beyond being irritant, would do no harm, and conceivably may have been salutary by acting as a reflex stimulant. There remain the belladonna and aconite. Forty minims of lin. belladonnæ would contain 0·15 grain of alkaloids (atropin and hyoscyamin mainly), or about 1-7th grain, the official dose of atropin being 1-200th to 1-100th grain. As compared with the tincture, the liniment of belladonna is eight times as strong. The maximum dose of the tincture being 15 minims, then 40 minims of the liniment would represent a dose 21 times greater than the maximum—i.e., about 5 drachms. It is a matter of surprise that so large a dose should have caused no dilatation of the pupils: it was this fact, together with the absence of the smell of gaultheria, that largely influenced me in doubting whether poison had been taken at all.

As regards the aconite, taking the recognised standard for aconite root as containing 0·5 per cent. aconitine, then 40 minims of lin. aconiti would be equivalent to 0·132 grain aconitine—i.e., about 1-8th grain, or 31 times the maximum dose, which is given as 1-250th grain. Put in another way, the liniment is 13 times the strength of the tincture, of which the maximum dose is 15 minims. In this case 40 minims of the liniment represent 35 times the maximum dose of tincture of aconite, or a dose of 8¾ drachms!

Bearing in mind the well-known extreme toxicity of aconitine, the patient must be regarded as singularly fortunate in having escaped with his life.

Harrogate.

A METHOD OF REMOVING NASO-PHARYNGEAL FIBROMATA, WITH TWO ILLUSTRATIVE CASES.

BY THOMAS GUTHRIE, M.A., M.B., B.C. CANTAB., F.R.C.S. ENG.,

AURIST AND LARYNGOLOGIST, VICTORIA CENTRAL HOSPITAL, LISCARD; CLINICAL ASSISTANT, THROAT DEPARTMENT, ROYAL INFIRMARY, LIVERPOOL.

NASO-PHARYNGEAL fibromata are somewhat rare growths presenting certain well-defined characteristics. They occur almost exclusively in the male sex between the ages of 10 and 25 years. They arise as a rule from the basilar fibro-cartilage, but more rarely also from the margin of the internal pterygoid plate and from within the spheno-palatine and spheno-maxillary fossæ. They grow with considerable rapidity always in the direction of least resistance, making their way into the neighbouring cavities, the walls of which become thinned by pressure and eventually give way. In spite of their clinical malignity they are benign growths and neither infiltrate nor cause metastases. As seen in the naso-pharynx they are smooth tumours of a pink colour, and to the touch they are almost always exceedingly hard. Histologically, they are composed of dense fibrous tissue provided, especially near their point of attachment, with numerous large blood-vessels, the presence of which accounts for the marked tendency to spontaneous hæmorrhage. If left to themselves they cause death from suffocation, intracranial invasion, hæmorrhage, or exhaustion unless the patient previously reaches the age of 25 years. At this age growth probably always ceases and not infrequently complete disappearance of the tumour has been observed.

During the early stages, when spontaneous hæmorrhage is often absent, the only symptoms are those due to nasal obstruction, so that the growth has not infrequently reached a considerable size before the patient comes under observation.

By the repeated employment of electrolysis or the galvano-cautery over a long period the growth may be kept in check until the patient reaches the age of 25 years or it may in very early cases be completely eradicated, but such measures are always extremely tedious and disagreeable to the patient, and not infrequently fail to attain their object. Complete removal by operation constitutes the only entirely satisfactory method of treatment, and in order to accomplish this steps must first be taken in all but the earliest cases to provide free access to the growth. Of such preliminary operations division of the soft palate, either alone or with removal of the posterior part of the hard palate and nasal septum (operation of Nélaton), has perhaps been more often employed than any other. This method, however, possesses the disadvantages of providing very imperfect access, and of involving the risk of subsequent imperfect closure of the naso-pharynx by the soft palate.

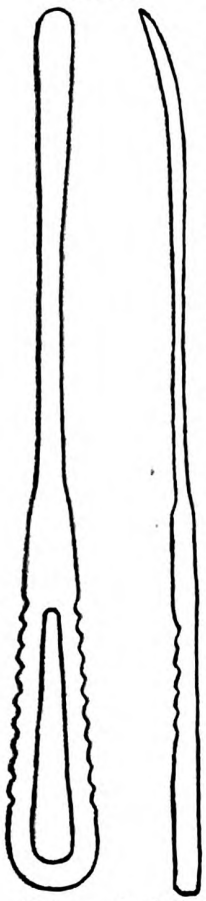
Exposure of the growth from the nasal aspect may be obtained by temporary resection or partial or complete removal of the upper jaw. These operations are, however, necessary only in advanced cases when the tumour is of very large size and has become firmly fixed to the walls of neighbouring cavities. As a general rule it is sufficient to adopt some method of enlarging the bony anterior nasal aperture (apertura pyriformis) in such a manner as to permit of the free use of a strong periosteal elevator passed through the nose for separating the naso-pharyngeal attachment of the growth. This enlargement may be effected by making an external incision along the angle between the nose and cheek, separating the soft parts, including the periosteum, and removing a sufficient amount of bone from the margin of the anterior nasal aperture. It occurred to me, however, that the facial scarring which this involves might be avoided and the necessary amount of bone equally well removed *from within* the nose by means of an incision through the muco-periosteum covering the inner aspect of that portion of the superior maxilla which forms the outer margin of the pyriform aperture. In each of the cases here reported this method was adopted and proved quite satisfactory, ample space being obtained with a subsequent complete absence of deformity.

As already indicated, separation of the growth is effected by means of an elevator passed through the nose assisted by

two fingers in the naso-pharynx. The instrument figured, which I have had made for the purpose, served very well (Fig. 1). It is considerably longer than the ordinary periosteal elevator, and has a curved end and a rounded tip with a half-sharp edge.

Hæmorrhage during the removal of these growths is usually very severe. In all but the earliest cases a preliminary laryngotomy must be performed and the pharynx plugged with a sponge. As pointed out by Brady,[1] the bleeding is least if the elevator in separating the growth is kept close to the point of attachment and the surface of the tumour is not interfered with. Separation must be conducted as rapidly as possible, since when it is completed the hæmorrhage usually ceases; if it does not do so a plug of iodoform ribbon gauze is required. Preliminary ligature of the external carotid artery is needed only in very extensive cases.

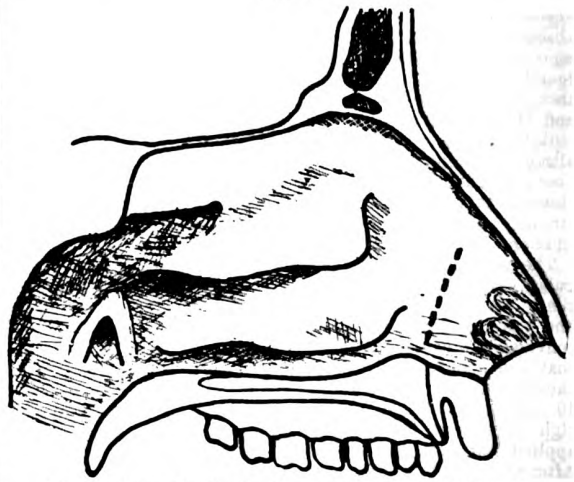
FIG. 1.



Elevator. One-half actual size.

During the last three years five cases of the disease have come under my observation, and in two of them it has fallen to my lot to remove the growth. In the first case, that of a boy 15 years of age, gradually increasing obstruction had been noticed for about two and a half years, and there had been two or three attacks of spontaneous hæmorrhage from the left nostril. Two unsuccessful attempts had been made to remove the growth on the assumption that it consisted of a large mass of adenoids. The growth filled the greater part of the naso-pharynx and a portion of it projected forwards into the left nasal cavity. Removal of a small piece for microscopic examination was followed by free hæmorrhage. The portion removed presented the typical histological characters of a naso-pharyngeal fibroma. In order to prevent hæmorrhage during the preliminary widening of the bony anterior nasal aperture, a submucous injection of a few drops of normal saline solution containing 4 parts in 60 of adnephrin solution (1–1000) was made, and cotton-wool soaked in adnephrin solution was applied within the left nostril. Laryngotomy was then performed, a tube was inserted, and the pharynx was plugged with a sponge. An incision was then made within the left nasal cavity in the situation indicated in the diagram (Fig. 2). The muco-periosteum within and the periosteum and soft parts without were easily separated with a sharp Freer's elevator, and sufficient bone removed with punch forceps to allow free movement of the special elevator during removal of the growth. (Fig. 3.) With two fingers in the naso-pharynx and the elevator passed through the left nasal cavity the attachment of the growth to the vault and the posterior and outer walls of the naso-pharynx was rapidly separated, and the mass seized with strong catch forceps and drawn out through the left nostril. During separation the sharp edge of the elevator was kept close to the bone so as to leave the latter quite bare after removal of the mass from its place of attachment. The hæmorrhage was very free, but it ceased shortly after removal was complete, and no packing was required. The laryngotomy tube was removed at once and the wound was closed. The growth was -shaped, the vertical or naso-pharyngeal limb measuring 1½ inches in length and the horizontal or nasal limb 1¾ inches. The growth appeared to have been entirely removed, but this proved to be not the case, as some four months later, left-sided nasal obstruction having returned, a similar operation proved to be necessary for the removal of another portion of the tumour. This was situated partly in the left half of the naso-pharynx and left nasal cavity, but mainly in a large cavity apparently representing the expanded spheno-maxillary fossa. Separation was rather difficult owing to the situation of the greater part of the tumour, but was effected partly by means of the curved elevator and partly by strong traction with catch forceps. The insertion of a gauze plug was required to arrest the hæmorrhage. The tumour on this occasion was rather larger than that first removed, being

FIG. 2.

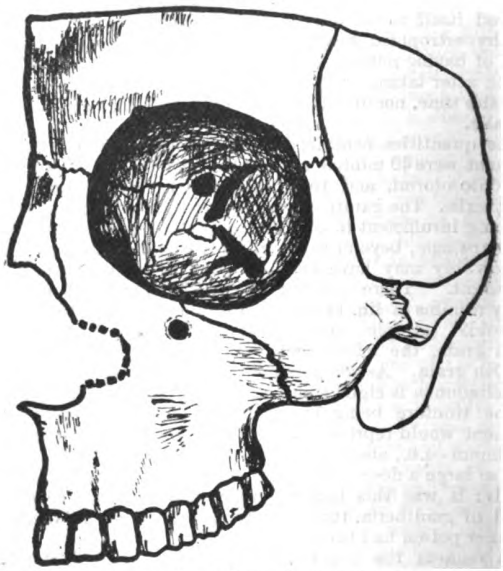


The situation of the incision through the muco-periosteum is indicated by the dotted line.

somewhat spherical in shape, with a diameter varying from 1½ to 2 inches. It represented, no doubt, a portion of the original mass which occupied the spheno-maxillary fossa. It is now more than a year since the second operation and there has been no recurrence of the growth.

In the second case, that of a boy 16 years of age, nasal obstruction had been present for about three years, and had

FIG. 3.



To illustrate the widening of the pyriform aperture by removal of a part of its bony margin. More bone than this can if necessary be easily removed through the muco-periosteal incision.

become so marked that the left side of the nose was completely blocked and the right very nearly so. There had been no spontaneous hæmorrhage. Removal was accomplished in exactly the same manner as in the first case, excepting that the growth after separation was removed through the mouth, being too large to be drawn through the nostril. Hæmorrhage was free during removal, but soon

[1] Journal of Laryngology, 1906.

ceased and no plug was required. The growth was L-shaped, consisting of nasal and naso-pharyngeal limbs measuring respectively 2½ inches and 2 inches in length. The attachment was mainly to an area about the left choanal margin, but partly also to the roof of the naso-pharynx. Healing was rapid, and up to the present time (six months after the operation) there has been no recurrence.

The method employed in these two cases is essentially that advocated by Brady, with the difference that the bony anterior nasal aperture is widened through an intranasal instead of an external incision. The operation would probably be suitable for all cases of naso-pharyngeal fibroma excepting, perhaps, those which have, before coming under observation, attained a great size with numerous offshoots in neighbouring cavities, for which some form of osteoplastic resection of the upper jaw may be required. The operation is, moreover, comparatively free from danger, involves no scarring or deformity, and permits of at least as complete a removal as any other method.

Liverpool.

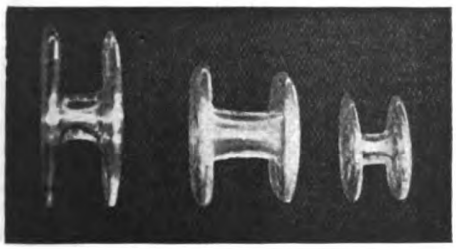
THE TREATMENT OF ASCITES BY DRAINAGE INTO THE SUBCUTANEOUS TISSUES OF THE ABDOMEN.

BY PETER PATERSON, M.B., C.M. GLASG.,
SURGEON TO THE GLASGOW ROYAL INFIRMARY.

IN THE LANCET of August 15th, 1908, p. 456, I described a method of treating spina bifida by establishing a drain, composed of silk threads, between the subdural space and the subcutaneous tissues of the scalp. This is a modification of a somewhat similar method I have been using for draining the peritoneal cavity in cases of ascites. In this condition a drain composed of strands of material, such as silk, would not answer the purpose, as the end of the drain which projected into the peritoneal cavity would soon become encapsulated and so rendered useless. For this situation I employ a glass drain of such a shape that it will not slip into the peritoneal cavity. These drains or buttons are of various sizes, so that a suitable one can be chosen for each case.

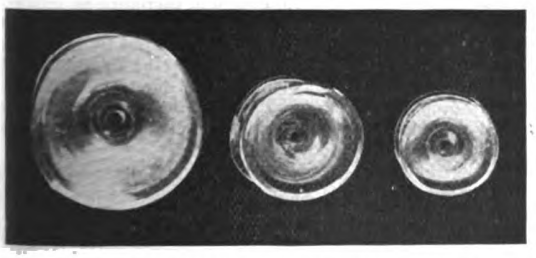
The buttons consist of a perforated glass cylinder expanded into a flange at each end. (Fig. 1.) The largest

FIG. 1.



size measures one inch across the flanges, three-quarters of an inch between the flanges, and has a canal one-twelfth of an inch wide. (Fig. 2.) The flange itself has a thickness of

FIG. 2.



about one-sixteenth of an inch. The diameter of the flanges and the width of the canal may be the same in the various sizes; but it is essential that the cylindrical part should vary in length, as this part has to pass through the thickness of the abdominal muscles, and as this thickness varies in different individuals so also must the length of this part of the button. In practice I have found it a convenience to have variations in the size of the flanges also, but this is not nearly so important as having gradations in the length of the cylinder. Care must be taken to have all the edges and corners rounded and that every part is perfectly smooth.

The operation is a simple one. An incision, about three inches long, is made in the middle line below the umbilicus, and the peritoneal cavity is opened in the line of the incision. If the abdomen has not been previously tapped the greater part of the ascitic fluid escapes at this stage. The omentum is now drawn down and removed at a level well above the point where the drain is to be placed, because, if left, it very soon passes into the opening in the drain and completely blocks it. The first case I did was a failure owing to my having neglected this precaution. The subcutaneous tissues are now dissected outwards, on one side, till the semilunar line is exposed, and through this an opening is made into the peritoneal cavity. This opening should just be large enough to permit the button being placed in position. The drain may be passed either from the peritoneal or subcutaneous side, but if from the latter care must be taken to avoid stripping the peritoneum from the edge of the opening when inserting the tube, or the flange may come to lie between the peritoneum and the subperitoneal tissues. By slipping one flange edgeways through the opening there is no difficulty in placing the button in position. When a suitable size has been chosen one flange should lie flat on the peritoneum and one on the abdominal aponeurosis, without any pressure being exercised on the intervening tissues. If too long, the apparatus would project into the peritoneal cavity, and the intestines might get nipped between the flange and the abdominal wall; while if too short, the button would tend to cut its way through the thickness of the tissues in its grasp. If the opening for the drain has been made too large and the edges do not grip the button firmly, a purse-string suture should be placed close to the button on the aponeurotic side, so that when tightened the soft tissues are brought into close contact with the groove in the drain.

The subcutaneous tissues are next closely stitched by a continuous suture to the anterior layer of the sheath of the rectus. This suture is placed about one inch from the margin of the primary incision and parallel with it. By this means the superficial end of the drain is shut off in a compartment of its own, and the fluid, as it escapes from the peritoneal cavity, is prevented from throwing too much strain on the suture closing the skin incision. The primary wound is sutured in the usual manner, the skin being closely stitched by a buttonhole suture to prevent any leakage. A collodion dressing applied to the wound gives additional support. This dressing is reapplied as often as required till the skin wound is firmly healed.

For one or two days afterwards the patients usually complain of pain round the neighbourhood of the button, but when this has passed off no further discomfort is experienced. If the quantity of peritoneal exudate be considerable a fluctuant swelling, almost of the size of the fist, forms within 24 hours in the subcutaneous tissues round the drain; but as absorption becomes established in the superficial vessels the swelling diminishes, till only a slight œdema remains to show that fluid is still escaping. When the exudate is small in quantity the swelling does not pass beyond the stage of œdema. It might be supposed that the intestines would adhere to the peritoneum round the edge of the button and thus shut it off from the peritoneal cavity, but in two cases which died several weeks after the operation, and in which a post-mortem examination was made, no adhesions were found and the peritoneum was quite smooth up to the edge of the opening; nor was I able to find, even after microscopical examination, any evidence of what might be possible, the peritoneum growing round the edges of the opening to the outer aspect of the drain and so encysting it.

I have performed this operation in several cases of ascites secondary to malignant disease, and also in cases of cirrhosis of the liver, with marked diminution of the abdominal distension, and to the great relief of the patients.

Glasgow.

PRELIMINARY OBSERVATIONS ON SOME CASES OF ESOPHORIA NOT CAUSED BY REFRACTIVE ERRORS.

BY REGINALD A. MORRELL, M.R.C.S. ENG., L.R.C.P. LOND.,

CHIEF CLINICAL ASSISTANT TO THE ROYAL WESTMINSTER OPHTHALMIC HOSPITAL AND CLINICAL ASSISTANT TO THE ROYAL LONDON OPHTHALMIC HOSPITAL.

AMONGST the large number of patients applying to the ophthalmic hospitals for relief from headache are many in whom the usual routine examination fails to disclose any refractive error to which their symptoms can be attributed. An examination into the condition of their muscle balance if carried out with a Maddox rod and candle at six metres will not disclose any abnormality. An examination under a mydriatic will also fail to discover any astigmatism or hypermetropia. These cases are, therefore, returned as normal and, in the event of a fundus examination revealing nothing abnormal, they will be advised that there is nothing in their eyes to cause the symptoms of which they complain.

This examination, complete though it may seem to be at first sight, is lacking in one important particular. The muscle balance at the time that the patient is accommodating for a near point has not been tried. If this addition be made to the routine examination it will not be long before the observer comes across a number of cases presenting the following clinical picture.

Type.—Usually nervous introspective persons engaged in a hard struggle for existence, or recovering from a serious illness, and who are constantly using their eyes for near work. The majority belong to that class from which neurasthenics are recruited, and, indeed, many show well-marked symptoms of that disorder.

Age.—Usually from 25 to 40 years. The youngest case seen by the writer was a girl, aged 18 years.

Symptoms.—Their complaint is always of headaches brought on by short periods of close work. The more intelligent will inform you that in reading the print soon becomes blurred, and that they have to close their eyes for a few moments before they can resume work. The relief thus obtained is, however, only of a temporary kind. These patients never complain of any discomfort when using their eyes for distant vision.

Examination.—The conjunctivæ are sometimes injected.

Vision.—Distant vision is good, 6/6 and often 6/5 being read with either eye.

Near vision.—As a rule no manifest hypermetropia or at the most only + 0·5 D. can be elicited. The smallest Jaeger type with each eye separately at a distance somewhat closer than normal. When tried with both eyes together any sustained effort to read fine print causes the symptoms of which the patient complains. The print is said to be blurred and the words to be all jumbled up. The patient is observed to hold the print closer to the eyes than normal.

The muscle balance.—Testing with the Maddox rod at six metres fails to discover any error in muscle balance, but the use of Harman's diaphragm test, the patient accommodating, at once discloses a condition of esophoria. A normal person if asked to read a row of capital letters seen through the diaphragm will do so with ease. The patients we are now considering, however, experience great difficulty and often fail to read the letters, which are described as "dancing about." The test has, in fact, betrayed a want of muscle balance which is always an esophoria. If whilst the patient is trying to read these letters a + 1 D. sphere is placed before each eye all confusion ceases, and the patient is enabled to read the letters without discomfort. This observation is repeated if the patient is given a pair of these lenses for reading purposes; comfort is at once restored, and reading can be continued for an indefinite period without fatigue or headache resulting, whereas without this aid a few minutes' reading suffices to produce such symptoms.

Examination under a mydriatic.—The mydriatic used by the writer has been, as a rule, the oily solution of homatropine and cocaine āā 2 per cent. This is instilled into the conjunctival sac, and in one hour a retinoscopy is performed, and no error of refraction is discovered.

To sum up, the only abnormality to be found by accurate testing in these cases is an esophoria when the patient is accommodating for a near point. This esophoria is at once relieved by placing a weak convex glass in front of each eye. The clinical picture presented in these cases is so uniform that a record of one serves for all.

The three following cases seen in private practice show that this class of case is not confined to the out-patient department, and are also of interest since they illustrate the three different types of patient who would seem to suffer from this form of esophoria.

CASE 1.—Patient, aged 29 years, complained of headaches when working. There were no headaches when she was walking about or when she was at the theatres. Vision = 6/6 right and left; no manifest hypermetropia. Jaeger No. 1 with each eye separately, but binocularly the print became confused almost immediately. No deviation with Maddox rod and candle at six metres. Diagram test showed esophoria. With a + 1 D. sphere before each eye the patient could read off the letters easily. Reading for a quarter of an hour with the aid of these lenses failed to bring on any unpleasant symptoms. Under homatropine and cocaine shadow turned with a + 1·5 D. in both meridians, right and left. Vision = 6/6 c. + 0·75 D. sphere right and left. Fundi normal. *Note:* This patient was a hard worker as a masseuse, starting at 6 A.M. and continuing to rush from one place to another till late at night.

CASE 2.—Patient, aged 40 years, unmarried. A very bad family history of delusions and insanity. The patient herself had suffered from "delusions" and during the consultation was observed to be very absent-minded. She complained of headaches on close work, but not at other times. Vision = 6/5 right and left. Manifest hypermetropia + 0·5 D. Jaeger type No. 1 with each eye separately, but with both eyes together this type was blurred. No muscular imbalance at 6 metres. With diaphragm test distinct confusion, relieved by a + 1 D. sphere before each eye. Fundi normal. The patient read newspaper print quite comfortably for some time with these glasses.

CASE 3.—Patient, aged 35 years, unmarried. History: Operation four months previously for appendicitis, and she had been "run down" since then. She complained of headaches when sewing and reading. Vision = 6/5 with both right and left eye. No manifest hypermetropia. Jaeger type No. 1 with each eye separately, but was confused when given binocular vision and complained of a "strained" feeling. With diaphragm test patient could only read the first two letters, the intermediate letters being confused. Ordered + 1·25 D. right and left for near work.

These cases, therefore, show that complete relief may be obtained by the use of weak convex glasses. The theory by which the writer endeavours to explain these symptoms will now be stated.

The error to be accounted for is, as we have seen, an esophoria. This particular form of imbalance can take the form of (1) an insufficiency of an abductor muscle, or (2) an over-action of an adductor muscle. In other words, it may be a divergence insufficiency or a convergence excess. In the cases which we are considering the fault is a convergence excess, for the patient presents the following characteristics of that condition: (1) there is no deviation for distance; (2) there is marked deviation for near vision; and (3) the near point at which the patient prefers to hold printed matter is closer than the normal.

It is a fact that accommodation and convergence are intimately connected; the stimulus for the former is, under ordinary conditions, the stimulus for the latter. Any unusual effort of accommodation must be combined with a strong impulse towards convergence. This fact, dependent upon the nerve supply of the muscles affected, was advanced by Donders to explain the occurrence of the convergent strabismus in hypermetropia.

In the cases now under consideration there is no error of refraction requiring excessive accommodation for its correction. It is, however, easy to imagine a state of fatigue affecting the ciliary muscle, a loss of tone, that is to say, similar to the general muscular fatigue so often complained of by these patients. The effect of this loss of tone would be a weakening of the response on the part of the ciliary muscle to the usual stimuli, and this in itself would lead to an increased stimulus being sent to the ciliary muscle, and at the same time to the adductor muscles. There would be an increased effort of accommodation, and therefore an increased effort to converge, or, in other words, an esophoria due to convergence excess. This theory is borne out by the clinical fact that a weak convex glass relieves the symptoms. As soon as the subnormal accommodation due to fatigue of the ciliary muscle is compensated for and the need for excessive stimuli eliminated, the convergence excess is replaced by the normal amount of convergence.

The writer ventures to submit this detailed account because, so far as he is aware, these cases are not described in any text-book, nor has their existence been widely recognised, if at all. The cases described are those which are diagnosed only when a test of the muscle balance during accommodation is made as a routine measure; even then success is only attained because the symptoms are promptly

elicited. This leads one to reflect on the possibility of there being cases in which these symptoms of fatigue do not manifest themselves until a longer period of time has elapsed, until, that is, the eyes have been accommodating for an hour or more. If this were so, it would account for many cases of asthenopia, the causation of which has not as yet been worked out, and the treatment of which is empirical and often unsuccessful.

At first sight these cases may seem to belong to that class to which the label "accommodative asthenopia" has been given. In the case of a patient suffering from "accommodative asthenopia," however, the symptoms are caused by the inability of the ciliary muscle to respond to *excessive* demands made upon it for the correction of hypermetropia. In the cases described in this article there was no excessive demand on the ciliary muscle and no error of refraction. It would seem that the ciliary muscle was unable to respond to ordinary requirements.

Such cases are more closely allied to those classed under the heading of "muscular asthenopia," where the symptoms are due to some kind of heterophoria. The usual description of such cases lays no stress on esophoria as liable to produce unpleasant symptoms, but exophoria is usually stated to be the most troublesome of these two conditions, and, moreover, is stated to be the one most usually found in emmetropes suffering from neurasthenia.

There are at least two reasons for insisting on the importance of these cases of esophoria, viz.: (1) the ease with which they may be passed over; and (2) the fact that they may be confused with cases of "retinal tire." The symptoms of "retinal tire" are in the main the same as those complained of by the patients whose symptoms are now being described. In each case there is a dimness of vision coming on after a short period of close work, rendering any further use of the eyes impossible until after a short period of rest; this, however, gives no permanent relief in either case. In cases of "retinal tire" it is the retina that is at fault, and no relief can be obtained with glasses. In the cases of esophoria, however, a glass at once relieves the patient and restores visual acuity.

The treatment of such cases by giving the required convex glass may be open to criticism, since by so doing one is relieving a symptom rather than treating the cause. In the writer's opinion the prescription of glasses should be combined with treatment by drugs. In the majority of these cases the patients are dependent for a living upon the constant use of their eyes for near work. They are unable to take prolonged holidays, and they demand, and have a right to expect, immediate relief if this can be given to them.

It may perhaps be argued that these cases are dependent upon the onset of presbyopia. It is difficult to see how this statement can be supported in the case of a girl, aged 18 years, seen at the Westminster Ophthalmic Hospital, and whose notes (published by kind permission of Mr. E. W. Brewerton) conclude this article.

CASE 4.—Patient, a girl aged 18 years. Complained of headache when reading. Vision = 6/5 in both eyes. Manifest hypermetropia of + 0·75 in each eye. Esophoria when tried with the diaphragm test. Relief obtained with a + 1 D. sphere in front of each eye. Unguentum atropinæ, 1 per cent., used three times a day for seven days. Retinoscopy shadows turned with a + 1·75 D. sphere in both meridians. Vision: 6/5 right and left c. + 1 D. These glasses ordered for near work. The patient reported in one month, and stated that all headaches had ceased since using the glasses.

Harley-street, W.

TWO CASES OF MALIGNANT PUSTULE.

BY L. A. PARRY, M.D., B.S. LOND., F.R.C.S. ENG.,
ASSISTANT SURGEON, ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, BRIGHTON.

A YOUNG Dutchman, aged 23 years, who had been in Hove only a few days, came in to see me one morning with a small sore place on the back of his right wrist. He said that about 18 hours previously he had noticed an itching sensation there, but it had not been very painful nor had it made him feel ill at all. On examining the wrist there was a small dark eschar with a ring of vesicles placed irregularly round it. There was marked œdema for some distance, and very distinct lymphangitis extending up above the elbow both back and front. There were very few constitutional symptoms. From the appearance of the primary lesion and the acute and rapid œdema I had no doubt that I had a case of anthrax. I excised at once a large area of skin and subcutaneous tissue, a circle about 1½ inches in diameter, which included the eschar and the vesicles and some surrounding healthy tissue, and painted the raw surface with pure carbolic acid. The patient made an uninterrupted recovery. The local symptoms began to clear up at once, and no severe constitutional signs appeared.

I was unable to trace the source of infection. The patient had nothing to do with leather, hides, or wool, nor had he been in contact with any horses or other animals. There is no anthrax in Hove, nor has there been any for years. Yet he must have been infected in the town, for the incubation period is generally a few hours or, at the most, does not exceed three days.

The second case is that of a man, aged 53 years, who was engaged in repairing baskets used in the foreign postal service. This work included the fixing of hinges and fastenings of strips of the skins of animals. He had a small pimple on his neck, which he scratched after working in some raw hides. From the small scratched pimple there rapidly developed a typical malignant pustule. There was a very considerable and rapidly spreading œdema round the anthrax pustule. The patient was sent by me at once to hospital, and the lesion was excised, but in spite of this he died a short time after.

The variety of external anthrax known as malignant pustule is generally (in this country in more than 99 per cent. of the cases) found on some exposed surface, such as the face, hands, or arms. Both my cases illustrate this. As to the source of infection in my cases, in the first I can find none of the usual causes, and I can only suggest that some unusual and unrecognised accidental handling either of an infected animal or infected animal product took place. As anthrax in animals is fairly abundant and frequent (in 1892 there were over 300 outbreaks in Great Britain, and seven of these were in Sussex), this is not difficult to imagine. In my second case the infection was almost certainly from the leather straps which the patient cut in the course of his work. This is, of course, an unusual source, but as he handled raw hides it is an easily explicable one. These hides were used untanned and were simply cut and soaked in water. A similar case had been known in the Post Office some years before. New regulations have been made since the second case by the authorities with the object of preventing its occurrence again.

The prognosis of malignant pustule depends very largely on the treatment adopted and the stage at which it is carried out. But there are other factors of importance; thus it is much more fatal on the neck than on other parts of the body. In this country, where the disease is rare and perhaps not always recognised at once, the mortality is high. During the years 1873–93 there were 115 cases of external anthrax in London, and of these 20 per cent. were fatal. Of the cases treated at Guy's Hospital at a later date, 1896–98, only 1 out of 26 proved fatal. The statistics of foreign countries are much more favourable. M. Le Roy des Barres had 72 cases, 57 in leather dressers and 15 in hair workers, and of these 62 recovered. Muskett of South Africa describes 50 cases with no death. His treatment consisted of ipecacuanha internally and externally. Mr. S. L. Woolmer of the Argentine Republic reports nearly 500 instances with only 2 deaths. Probably his unique opportunities enabled him to recognise the lesion at the very earliest stage. In this connexion the following extract from a letter from Argentine may be of interest:—

Here in camp, where one never sees a doctor, and when many of our peons often get anthrax during the summer, they do not die, and get well when treated by an ignorant native. Here when a man takes the infection it can be recognised at once as looking like an angry boil with a black or dark purple head; off he goes to a "curandera," generally an old woman. She takes a piece of thick wire, heats it red hot, and proceeds to burn away the centre of the boil. As the process goes on the flesh can be seen to burn away without feeling it till the sound part is reached.

The only treatment for malignant pustule that need be referred to is that which is practically universally adopted—namely, destruction of the primary focus of infection, either by caustics, the cautery, or the knife. The last of these is the best. It is that which is adopted at Guy's Hospital, where the results of late years have been very satisfactory. The pustule should be freely excised, with a good margin of healthy skin round and the raw surface painted with some strong caustic, such as pure carbolic acid. If this treatment is undertaken early the results are exceedingly good. Untreated cases are usually fatal within the week.

Prophylaxis is important. Unfortunately, very little can

be done for the external variety of anthrax. The wet cure of hides is largely adopted by the trade instead of the dry cure. It should be universal. For the internal varieties of the disease important regulations have been drawn up by the sanitary committee of the Bradford town council. These regulations, important as they are, are, in my opinion, not so good as those originally suggested by Dr. T. W. Hime, the medical officer of health of Bradford.

Hove.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF CHOREA TREATED BY THYROID EXTRACT.

BY PERCY A. RODEN, M.D. ABERD.,
HONORARY PHYSICIAN TO THE BRINE BATHS HOSPITAL, DROITWICH.

THIS case having caused me a considerable amount of anxiety, I publish it with the hope that others who have had similar cases may relate their experiences and so shed a further light on this very distressing malady.

The patient, a girl, aged 10 years, was brought to me three years ago with acute symptoms of chorea. Her restlessness was very marked, more especially in the arms and legs which were never quiet. The face and neck were very slightly affected. There were no facial twitchings, but an occasional jerk of the head to one side. The heart appeared to me quite normal; there was no murmur to be detected at the apex or at the base; the apex beat was not displaced, and there was no indication of any enlargement. I treated the child with arsenic in steadily increasing doses, at the same time giving gentle saline aperients (sodii phosph.), and ordering a simple diet which should be nourishing and at the same time not irritating—viz., porridge made of quaker oats, plenty of milk and cream, farinaceous puddings, vegetables, and ripe fruit. The child, however, showed no improvement. I ordered her to remain away from school, and commenced a course of treatment with potassium iodide, and as that gave no result I tried the combination of iodide with the bromide of potassium, still with no improvement. After having tried salicylates and quinine without good effect I took the child into St. John's Hospital for brine baths, and in a fortnight she was able to return home apparently well. She then returned to school, but in a month's time the jerky movements and want of coördination began to return, and the child became listless and showed signs of wasting. I ordered her once more to be kept from school, and prescribed cod-liver oil together with bromide and iodide of potassium, and then as she showed no improvement I took her once more into St. John's Hospital where she quickly lost her jerky movements, and was able to return home apparently quite well.

I was greatly in hopes that this second course of brine treatment would prove permanent. I did not see the child for some months, but was asked by the mother at the beginning of this year to call and see her, as she was worse than ever. Accordingly I went and found the girl suffering badly. Her mother begged me to take her once more into the hospital, which I intended to do, but while talking to her the other children (two girls) came in from school looking rosy and well, and I noticed that each of them suffered with goitre. I then examined the throat of my patient, but found no trace of goitre. I could not help thinking that perhaps she might have some thyroid insufficiency so I gave her teaspoonful doses of the fluid extract of the thyroid gland (prepared by Duncan and Flockhart of Edinburgh) twice a day with the most surprising result. The child showed marked improvement in the first week and returned to school in the second week, still continuing with the thyroid extract. With this she persevered twice a day for a month, and then was ordered to take it only once a day for the next month.

I have seen the child frequently and she looks rosy and well, showing no sign of chorea. This improvement has now been maintained for over nine months.

Droitwich.

A CASE OF CONCURRENT EXTRA- AND INTRA-UTERINE PREGNANCY.

BY FRANCIS W. DAVIDSON, M.B., CH.B. ABERD.,
LATE HOUSE SURGEON, ROYAL HOSPITAL, RICHMOND.

ON the morning of Feb. 9th of this year I was called in to see a woman, aged 32 years, who had been seized with a sudden sharp pain in the right side of her abdomen. I found the patient in bed in a collapsed condition. She was very pale and her pulse was small, rapid, and thready. Her symptoms and general appearance were those of internal hæmorrhage. The history was briefly as follows. She had not menstruated since the middle of December, 1909. At intervals during these two months of amenorrhœa she had sharp pains in her right side, but as they did not last long she had not sought medical advice.

On examination I found she was very tender over the lower part of her abdomen and quite dull in the flanks. I diagnosed ruptured ectopic gestation and ordered her immediate removal into the Croydon General Hospital. She was admitted under Dr. J. Wayte, who performed a right-sided cœliotomy the same afternoon. On examining the extracted ovum he found two fœtus of about two months' development. The patient made a good recovery and was discharged from the hospital on March 13th. About the middle of May she informed me that she thought she was still pregnant, as she had "felt the baby moving" since the end of April. I told her to come back and see me in a couple of months. This she did, and an examination left me in no doubt that she was about seven months pregnant. I gave her the middle of September as the probable date of accouchement and on Sept. 17th I delivered her of a healthy full-term female child. There was no trouble with the abdominal scar at the confinement and the patient had a perfectly uneventful puerperium.

Thornton Heath.

VASO-MOTOR RHINITIS OF 20 YEARS' DURATION; SUBMUCOUS RESECTION; COMPLETE RECOVERY.

BY CHARLES A. ADAIR DIGHTON, F.R.C.S. EDIN.,
HONORARY OPHTHALMIC AND AURAL SURGEON TO THE SCARBOROUGH HOSPITAL.

THE following case, which came under my charge early in April of this year, seems worthy of notice.

A well-built, particularly healthy-looking man, aged 30 years, came to me complaining of attacks of hay fever and rhinorrhœa occurring regularly every seventh day and completely incapacitating him from work on those days. He had been a butler, but owing to the disease had to give up his situation and is now a painter. Twenty years ago he had an attack of influenza and bronchial asthma, since which time he had had an attack of hay fever and rhinorrhœa every seventh day. He had been to several infirmaries and had had his frontal sinus opened and both sides of the nose cauterised with no effect. There was no history of accident or injury. On examination the nasal septum was found to be markedly deflected to the right side, showing a large bend in the superior portion and a large ridge on the vomer in the lower portion. The concavity on the left side was compensated for by a large middle turbinal. No polypi or pus was present, and the antrum was normal on transillumination. Under cocaine adrenalin anæsthesia I removed the nasal septum and ridge by the submucous method. The man returned to work on the third day after the operation and has continued at it ever since, with no sign whatever of any recurrence of the symptoms and has had no treatment whatever beyond a menthol spray after the operation followed by an alkaline douche, these being altogether stopped at the end of a fortnight.

The chief points of interest seem to be: (1) the antecedent bronchial asthma and influenza, probably setting up a condition of hypertrophic turgescent rhinitis in an already predisposed nasal cavity, the turgescence increasing for seven days and terminating in an attack of rhinorrhœa and hay fever; (2) the extraordinary periodicity of the attacks; and (3) the severity of them. Ballenger in his book notes a case of coryza œdematosa which appears somewhat similar, but in it the patient showed several œdematous spots, which

were entirely absent in my case, as the only signs present were a seemingly acute hypertrophy and turgescence of the mucous membrane during the attack, whilst between attacks the nose, except for deformity and enlarged turbinals, was normal in appearance.

Scarborough.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

The Clinical Aspects of Metastatic Cancer of the Ovary.

A MEETING of this society was held on Oct. 24th, Mr. CHARTERS J. SYMONDS, the President, being in the chair.

Mr. J. BLAND-SUTTON read a paper on the Clinical Aspects of Secondary (Metastatic) Cancer of the Ovary. He said that the subject of cancer of the ovary had interested him during a quarter of a century; during the whole of that period he entertained the gravest doubt in regard to the existence of primary cancer of the ovary. He was still in doubt concerning it. Observations published during the last eight years had established the fact that solid tumours of the ovary large enough to be perceptible to eye and hand in the hypogastrium, which on microscopic examination exhibited the structure of carcinoma, were nearly always secondary to primary foci of cancer in the breast, gall-bladder, or some part of the gastro-intestinal tract, especially the pylorus and colon. Many large solid tumours of the ovary, unilateral and bilateral, which exhibited the structure peculiar to cancer, and regarded as arising primarily in the ovary, were, in truth, secondary to cancer in some other organ. When patients were submitted to operation for solid ovarian tumours, especially if the tumours were bilateral and accompanied by vomiting and ascites, a careful examination should be made of the abdominal viscera, especially the stomach and sigmoid flexure of the colon. Some pathologists who willingly admitted that the solid cancerous tumours, such as had just been considered, were metastatic, still believed that many cystic ovarian tumours with a cancerous structure were primary. When cancer attacked the stomach, cæcum, or gall-bladder, the cancerous cells permeated the muscular and serous coats in relation with the primary growth and found their way into the general peritoneal cavity. Many of those cells were conveyed by the peritoneal fluid into the recesses of the pelvis and lodged on the ovaries, Fallopian tubes, and uterus. Cells which fell upon the ovaries implanted themselves, grew, replaced the ovarian tissue, and in some instances became large and easily recognisable tumours. From his observations he had come to the conclusion that when the cancerous cells implanted themselves upon a normal ovary the result would be a solid tumour, but it occasionally happened that cancer arose in the gastro-intestinal tract of a woman who had a cystic ovary. In such circumstances the cancerous particles implanted themselves on the wall of the cyst and grew quickly into large and formidable masses. In addition he had to add the Fallopian tube. Primary cancer of the Fallopian tube was a very malignant form of cancer, and the operative treatment of this disease had rarely been followed by enduring success. It was a well-known fact that when the mucous membrane of a Fallopian tube was infected with pathogenic micro-organisms, the changes in the tubal tissues resulting from such infection led to the complete occlusion of the cœlomic ostium of the tube. Some years ago he was able to demonstrate that an occluded ostium occasionally occurred in cancerous Fallopian tubes and that the closure of the mouth of the tube exercised an important influence on the course of the disease. When the ostium of the tube remained open the cancerous particles were poured out cornucopial fashion into the pelvis, and soiled all the adjacent tissues and organs. Nearly all the patients who submitted to operation for the removal of a cancerous tube, in whom the mouth of the tube remained open died with recurrence of the disease within a year. It must not be imagined that the implantation of cancer on the walls of ovarian cysts was an uncommon event. Within a period of 18 months (from March, 1909, to October, 1910) seven examples had come under his observation. The primary foci were distributed among the following organs: stomach, 2; hepatic flexure of colon, 1; sigmoid flexure of colon, 1; uterus, 1; Fallopian tube, 1; and in 1 the primary focus was undetermined. The question naturally arose as to the advisability of operating in many cases of that kind. The same argument applied to operations performed for the relief of cancer in any situation. When patients came under observation with a tumour of the size of a football in the lower half of the abdomen which was interfering with the bladder, the rectum, or both those organs, producing pain and great distress, perhaps accompanied by vomiting, the surgeon was bound to give the patient relief. No surgeon hesitated to perform colotomy in patients with acute intestinal obstruction caused by cancer in the upper part of the rectum. The surgeon would rarely have any difficulty in satisfying his conscience concerning the necessity of an operation, but he would at times be sorely tried when determining how much or how little he should remove. On several occasions he had removed bilateral ovarian cancerous masses and the uterus, and in the same operation removed a cancerous obstruction in the sigmoid flexure and joined the ends by circular enterorrhaphy. In some instances the patients had survived the operation and lived in comfort two or more years. It was more common for death to ensue within a year of such an operation. One of the most striking features in the after-history of patients from whom malignant ovaries had been removed was the rapidity with which the cancer recurred in the pelvis, even in cases where the uterus and pelvic peritoneum seemed free from infection at the time of the operation. When surgeons removed bilateral ovarian tumours which appeared to be malignant, they should carefully examine the gastro-intestinal tract, the gall-bladder, and the Fallopian tubes for evidence of primary cancer. If the disease was in a situation favourable for excision it should be removed; and if there was no obvious evidence of dissemination beyond the pelvic organs, it was a useful proceeding to remove the uterus as well as the ovaries. When the primary disease was too advanced for removal the patient's condition was often made more bearable, if not comfortable, by the removal of the ovarian masses, but it must be borne in mind that in attempting to do that the lives of patients were often shortened. Finally, a prolonged study of the question strengthened the conviction he formed many years ago, that primary carcinoma of the ovary remained unproven.

Dr. BERNARD H. SPILSBURY read a paper on the Pathology of Certain Ovarian Tumours, and in the course of his remarks said that he had encountered malignant metastatic ovarian growths only in very bad cases in which the peritoneal cavity had been flooded with cells.—Dr. F. J. MCCANN said that in the light of recent researches it was the duty of surgeons to examine carefully for a primary cancer in these cases, but it was to be remembered that some of these patients were in a desperate condition.—Mr. J. D. MALCOLM said that so far as solid tumours were concerned he was inclined to agree with Mr. Bland-Sutton.

OPHTHALMOLOGICAL SOCIETY.

Marginal Keratectasia.—Colloid Excrescences of the Membrane of Bruch.—Endothelioma of the Orbit.—Exhibition of Cases.

A MEETING of this society was held on Oct. 20th, Dr. G. A. BERRY, the President, being in the chair.

Mr. GEORGE COATS described the pathological features of a case of Marginal Keratectasia formerly shown to the society by Mr. J. H. Fisher. They consisted essentially in a loss of the superficial lamellæ in the periphery of the cornea, and their replacement by a loose vascular fibrous tissue. The membrane of Descemet had undergone enormous compensatory thickening and showed many ruptures plastered over with new layers of hyalin substance. In one area the epithelium was œdematous and desquamating, either as a result of commencing ulceration or of leakage from the anterior chamber. From a study of recorded cases it was shown that marginal keratectasia is usually the result of "furrow keratitis" (Schmidt Rimpler) or "marginal atrophy of the cornea" (Fuchs), a condition in which, without ulceration, a groove develops in the upper periphery of the cornea, usually between an arcus and the limbus; ectasia, distortion of the cornea, and astigmatism, against the rule, were produced by the giving way of the floor of the groove. As to pathogenesis there were two opinions: (1) that the condition was purely degenerative; and (2) that it was

inflammatory. In favour of the first there was the common absence of injection clinically and of round cell infiltration microscopically, as well as the association with arcus senilis; in favour of the second, the occasional presence of injection and even photophobia, or of pseudopterygium or pterygium, and the fact that vessels crossed the floor of the groove. Actual ulceration was probably excluded by many cases carefully watched over long periods. It was possible that a combination of these two explanations was correct—viz., that the products of degeneration set up a low form of inflammation, or that a low form of inflammation induced degeneration.

Mr. COATS also read a paper on an Unusual Instance of Colloid Excrescences of the Membrane of Bruch. The case was reported chiefly because it afforded an opportunity, rarely obtained, of comparing an ophthalmoscopic appearance with its histological foundation. The patient, aged 58 years, was achondroplasic and had glaucoma in both eyes. V.R. = fingers at 3 feet H. +7 D. V.L. = perception of light. In the right eye the media were fairly clear, and the fundus was strewn in every part with flat, scaly, irregular, white or grey areas, with a slightly wavy surface, and with distinct glitter on moving the light. The borders were sinuous and rimmed with pigment; pigmentation also occurred on the surface, especially towards the periphery. The choroid generally was degenerate. In the left eye there was a detachment of the retina; this eye was subsequently excised. Pathological examination showed that the areas were due to an aberrant type of colloid excrescence of the membrane of Bruch. In addition to the ordinary rounded forms, flakes and irregular spongeworks of colloid material were found. The choroid was very degenerate, and showed evidence of the former presence of a flat detachment. All the measurements of the globe were notably small, and in other respects a degree of infantilism was suggested. The relationship of these conditions with the glaucoma was discussed. The glaucoma itself was peculiar in that there was no adhesion of the corneo-iridic angle, and so far as could be seen no hindrance to drainage. It was suggested that the rise of tension might be due simply to a disproportion between the secretion and the amount of drainage available—normal so far as it went, but insufficient. The other eye, however, though glaucomatous, was not unduly small, at least in its external measurements. Another possibility was that the iris root had been in apposition with the ligamentum pectinatum, but not adherent, and had come away in the fixing fluids. Or there may have been an alteration in the chemical nature of the fluid to be drained. The pathology of glaucoma with open corneo-iridic angle was also discussed.—The papers were commented on by Mr. E. TREACHER COLLINS, Dr. C. MARKUS, and Mr. J. HERBERT FISHER.

Mr. LESLIE J. PATON communicated the later history of a case of Endothelioma of the Orbit. The growth was removed, but as it recurred locally the orbit had to be eviscerated, and the lymphatics leading down to an affected gland excised. Subsequently there was further invasion of glands in the anterior triangle; and when these were removed a further involvement took place above the clavicle and in the axilla. The patient ultimately died from a very large intrathoracic development. The growth was stated to be pathologically a simple endothelioma.

The following cases were shown:—

Dr. MARKUS: A case of Peripheral and Central Bulging of the Cornea; also a case which presented Unilateral Retraction of the Upper Lid and von Graefe's Sign.

Mr. C. S. BLAIR: A case of Endothelioma of the Lacrymal Gland.

THE SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

Sleeping Sickness.

A MEETING of this society was held on Oct. 21st, Professor RONALD ROSS being in the chair.

Dr. ARTHUR W. G. BAGSHAWE read a paper on Recent Advances in Our Knowledge of Sleeping Sickness. He said in regard to etiology that an important piece of negative evidence had come to hand. The islands of Principé and San Thomé were a few miles apart in the Gulf of Guinea. They had a similar population, similar vegetation, the same climate. Principé contained tsetse-flies, San Thomé did not. On Principé there was much sleeping sickness; of nearly 2000 persons examined by the Portuguese Commission 23·5 per cent. were found to be infected. On San Thomé, though three months were spent there, the members of the Commission were unable to find a single case; and that was not due to want of opportunity, for cases of sleeping sickness were frequently imported into each island. On San Thomé, moreover, they found all the blood-sucking insects which they had seen on Principé, with one exception, the genus Glossina. That was to his mind presumptive evidence that in nature transmission of sleeping sickness occurred only exceptionally, if at all, in the absence of tsetse-flies. It confirmed the old observations in the West Indies and on the American continent, and supported the belief that sleeping sickness would never spread in a country where there were no tsetse-flies. Could they still adhere to the belief that among the tsetses the species palpalis was the only carrier? Until quite recently it appeared that they could. Unfortunately, in Northern Rhodesia and Nyasaland sleeping sickness had in several cases, European as well as native, been there contracted, and they were practically certain that Nyasaland, if not the Zambesi and its tributaries, was outside the area of distribution of Glossina palpalis. That suggested that another species of tsetse-fly might be capable of acting as carrier. But if sleeping sickness was really being diffused in Rhodesia by tsetse-flies other than palpalis, why had the disease not spread in East Africa by the agency of Glossina pallidipes and fusca, or on the high ground in the Katanga by that of Glossina morsitans? He suggested as a provisional hypothesis that it was because on those uplands the air was too cool and too dry to admit of the parasite completing its development in the body of the insect. To the suggestion that Glossina morsitans might be responsible for those infections it might be objected that the cases were few and scattered, whereas the disease should spread rapidly in places where a carrier was so abundant and so bloodthirsty, but it was very surprising to notice, even in the case of Glossina palpalis, the slow rate at which the disease spread in the most favourable circumstances. Since Kleine opened a new road to investigators by showing that tsetse-flies could, after a latent interval, be permanently infected with pathogenic trypanosomes, their knowledge of the subject had grown, but it could not be said that it had reached finality. That such late development was the rule in the insects which transmitted trypanosomes from mammal to mammal seemed probable. When the development of the trypanosome in the fly was discovered the non-infective interval appeared to be a definite fixed period. A long series of experiments carried out by the Sleeping Sickness Commission seemed to demonstrate that it might be very variable. They were still in the dark as to what went on in the insect during the non-infective period. The fact that the trypanosomes in the alimentary canal were infective went to show that there was no invasion of the body fluids and afterwards of the salivary glands. There was no evidence that Trypanosoma gambiense was infective to the tsetse-fly at any one stage of its life-history more than another. No observer had obtained any evidence of germinal infection. There seemed to be no such thing as hereditary transmission in the fly of those trypanosomes which were pathogenic to mammals. Perhaps the most striking discovery was that of Bruce and his colleagues in Uganda, that the flies caught on the shore of the Victoria Nyanza, cleared of inhabitants for some two years, were able to infect monkeys with sleeping sickness. Administrators had nursed the hope that the flies, compelled to feed on the lake shore vertebrates rather than man, would soon lose their infectivity, and then it would be possible, they supposed, to plant the same or a different population on the shore without risk. That would, in any case, have been a dangerous step in view of the difficulty of discovering infected persons, but now the idea must be quite given up. If it were definitely proved that wild animals formed a reservoir of the sleeping sickness virus, it was plain that all places where such animals and the sleeping sickness fly coexisted would be uninhabitable by man till the circle was broken by the extermination of either the vertebrate or the invertebrate host. Though no cases of infection by sexual coitus had been recently reported, experimental work suggested that it might occur. In regard to diagnosis more observations had been recorded on auto-agglutination, but they did not yet know the cause of

the phenomenon. Todd found that it was at its maximum just after trypanosomes had been numerous in the blood; if that were generally so, the curve of auto-agglutination might follow that of periodicity. Todd had published a table showing the proportion of cases in which trypanosomes and auto-agglutination respectively were found in 1406 persons examined on a single occasion in the Congo State. It showed that, while auto-agglutination might be absent when trypanosomes were present, of cases in which the corpuscles clumped a large proportion harboured trypanosomes; thus when agglutination was present 183 persons had trypanosomes and 212 had not; when it was absent, the figures were 24 and 987. The association of that phenomenon and trypanosome infection in man was thus well shown. It remained, therefore, true that well-marked clumping of the red corpuscles in a person who had visited or resided in an infected area was a phenomenon which should lead the observer to make repeated search for trypanosomes. The discovery of the trypanosome in one or other of the body fluids remained the only certain means of unmasking a trypanosome infection. Concerning the symptoms, an analysis in 50 published cases of sleeping sickness in Europeans showed that the most frequently recorded were, in descending order: fever, erythema, loss of strength, increased frequency of heart beat, somnolence, œdema, large spleen, anæmia, headache, and epileptiform convulsions. In the last 12 months no new trypanocide had come into use for treatment unless it were aniline antimonyl tartrate. They had learned little more as to the use of arsanilates such as atoxyl and soamin. Arseno-phenylglycin promised to be superior to either, but the data were as yet incomplete. The most favourable reports of the drug came from Togoland, where in Dr. von Raven's hands the results were good. It must be premised, however, that sleeping sickness in Togoland seemed more amenable to trypanocides than sleeping sickness on the other side of the continent. In German East Africa Eckard had much less success, but as he did not give the drug in the right way they might disregard his results. Von Raven had followed the method insisted on by Ehrlich of giving one or two large doses and no more. Ehrlich had pointed out the advantage of getting in the trypanocide when parasites were numerous in the blood. The theory was that some killed at once produced by their death antibodies, and to those the remainder succumbed. Tryparosan, introduced by Ehrlich, was a drug which promised to be of service. Broden and Rodhain tried it both intravenously and by mouth; the latter method was the more effective. Aniline antimonyl tartrate had been used with some apparent success by Thiroux, who found it more effective and less toxic than the potassium salt. None of the trypanocides at present in use could be relied on to banish the parasites from the cerebro-spinal fluid. Time had only emphasised the inefficacy of any treatment in advanced cases; life might be prolonged, but ultimate recovery could not be hoped for. They had now many years' experience of the disease in Europeans, and a study of the published cases led to the belief that recoveries almost certainly occurred, and, if the nature of the disease were recognised early enough, might be not infrequent. That opinion was shared by authorities such as Todd, Broden, and L. Martin and Darré. It was, of course, open to anyone to say now or five years hence that persons who had apparently recovered might relapse. When, however, they had a case such as that of the patient whose disease was diagnosed in 1903, and certainly existed in 1900, and who had now been in vigorous health for years, they were, he thought, justified in believing that the recovery was real. At present, unfortunately, they had no certain test of cure. Even susceptible animals might fail to be infected when trypanosomes were scarce. Of 30 Europeans who had died from the disease only two survived more than three years from the discovery of trypanosomes. That tended to show that patients who had survived more than three years, and were free from symptoms, had a chance of recovery. The human tissues tended to get the better of that as of all parasites. Five Europeans who had lived from 4¼ to 7½ years since trypanosomes were found in them were in June of this year in excellent health. As far as could be ascertained 3, 3½, 3½, 5½, and 7 years had passed since symptoms were observed. What share chemo-therapy had had in the restoration to health of those Europeans it was difficult to say; the treatment which many had was both short and simple. It was possible that their infections were mild and that they would have recovered without the use of drugs, never reaching the advanced stage. The broad principles of prophylaxis had been known since the discovery that glossina palpalis transmitted the disease. They consisted either in the removal of natives, infected or not infected, from the areas haunted by the fly, or in the destruction or banishment of the fly itself. Obviously the latter was the true prophylaxis, and if it should prove that wild animals harboured the virus, it was to measures directed against the fly that they must look more and more. The only certain way at present known of getting rid of tsetse flies was clearing—i.e., removing the vegetation which sheltered them and afforded opportunities for breeding. Recent work on drug prophylaxis suggested that some efficient preventive might be found in that direction. Morgenroth and Halberstaedter had been studying the action of quinine when injected into mice simultaneously with the virus of nagana. They found that when the mice were fed on quinine for a few days before the inoculation and the medication was continued afterwards no infection occurred. They had not yet found how long it was necessary to continue the quinine feeding. If the quinine was introduced under the skin it merely delayed the infection; if into the peritoneum it had no effect at all. The method should be tried with larger animals, for the mouse, owing partly to the large quantities of trypanocides it would bear, was the most easy of all mammals to treat. He was not aware of any attempts to administer trypanocidal drugs to monkeys and other susceptible animals while they were being subjected to the bites of infected flies. That surely was a promising line of research. In regard to South American trypanosomiasis, though the form of human trypanosomiasis discovered by Chagas in Brazil differed in many respects from the African disease, it deserved a short mention. It was briefly described in April of last year, but few details were available till the beginning of 1910. The parasite differed from that of sleeping sickness in two particulars; instead of multiplying by longitudinal fission in the peripheral blood it split up into eight merozoites within its limiting membrane in the lung capillaries, and, though that seemed less certain, it spent part of its life in the red corpuscle. In consequence of its mode of multiplication it had been named by Chagas schizotrypanum. The symptoms produced in man were similar to those of sleeping sickness, but there was no mention of lethargy or somnolence; the clinical records were at present scanty. The transmitting agent was a bug which sucked blood at night. It was the true host, for after feeding on an infected man or animal it was not capable of infecting another till eight days had passed, but after that remained infective for an indefinite period. Chagas believed that the forms which were to infect the new vertebrate left the alimentary canal and appeared in the body cavity, eventually reaching the salivary glands. At any rate, there seemed little doubt that trypanosome forms did appear in the body fluids. Chagas expressed the belief that only bugs which had flagellates in their salivary glands were infective, but he had brought no experimental proof; against that belief was the fact that he infected many animals by the introduction of fluid from the bug's intestine. From the result of his transmission experiments with different species of animals he concluded that the forms capable of infecting the bug developed only in certain animals; he instanced a South American monkey and man. He could not infect bugs from infected guinea-pigs. No observations besides those of Chagas had been published.

UNITED SERVICES MEDICAL SOCIETY.

Presidential Address.—Discussion on "Soldier's Heart."

A MEETING of this society was held at the Royal Army Medical College on Oct. 12th, Colonel Sir DAVID BRUCE, C.B., F.R.S., the President, being in the chair.

The PRESIDENT in addressing the members at the opening of the new session said: The subjects which may be brought before this society are, of course, very varied, including surgery, medicine, hygiene, organisation, and administration, on sea and land, during peace and war, at home and abroad, and it is therefore difficult, perhaps, to find a sufficient audience of medical officers interested in every paper which may be brought before this society. The other medical societies in London are more differentiated,

and therefore feel this difficulty less. But it must be borne in mind that it is not our business to become specialists to the exclusion of the other branches of our profession. We may be called upon at any moment to do the work of the oculist, laparotomist, bacteriologist, physicist, chemical analyst, &c., and in places where there are no experts to call in to our aid and often not even a book to consult. At the beginning of the siege of Ladysmith the first thing I was called on to do was to sew up several holes in a small intestine which had been wounded by an accidental revolver shot. When I look back on the same siege I see many things in the light of experience which could have been done better. For example, at that time we did not know so much about the breeding of flies as we do now. With our present knowledge I am sure we could have prevented to a great extent the truly Egyptian plague of flies which occurred and the consequent increase in the spread of enteric fever. In addition to being a surgeon and entomologist, it was very necessary to be a sanitary specialist, as the water-supply and the disposal of refuse in Ladysmith were also difficult to cope with. These arguments are brought forward to induce every naval, army, and territorial officer of the medical services within reach to attend our meetings. However interested they may be in some special subject, they will perhaps hear something, or see something demonstrated here, which will be of supreme advantage to them on some future occasion. Now what are the subjects which are most important at present to us as service men? In the front rank still stand enteric fever and dysentery. If anything could be done to enable the soldier to escape these diseases in time of war a very great advance would be made. In times of peace, in barracks and camps, doubtless the mode of fighting typhoid fever and dysentery by means of ordinary sanitary methods is the sound one. But on active service in the field it does not seem possible to keep them altogether in hand by these means, and some other method must be added. For my own part, I have always looked to some process of artificial immunisation as the most probable way to reach the wished-for result. If the soldier could be made completely immune to enteric fever and dysentery, even for only six months, the problem would be solved. Antityphoid inoculation was in vogue during the last South African war, but it proved useless. Since then the method has been improved by Leishmann, and the substantial lowering of the case-incidence is very gratifying, but whether this artificially induced immunity will stand the strain of active service remains to be proved. Malaria is another important malady affecting soldiers, and in spite of the epoch-making discoveries of Laveran and Ross little seems to be done in India and the colonies to prevent its ravages. Lately, it is true, a conference on malaria has been held at Simla, and something may now be done, but it is 30 years since Laveran discovered the cause of malaria, 12 since Ross discovered the mode of spread, and the same length of time since Koch demonstrated the use of quinine as a means of prevention. *Festina lente.* Plague is beginning to lose its terrors, as has been the case with cholera, now that its mode of conveyance by means of the rat-flea has been established and means of preventing it made possible. The work done under the direction of the Lister Institute by Lamb, Liston, and others of the Indian Medical Service is most illuminating and worthy of all praise. Sand-fly fever, although non-fatal and of short duration, also causes much sickness in many parts of the world, and has been the subject of investigation during the last two years by Birt and Marett. The interesting discovery that while in the larval stage the sand-fly depends for nourishment on the droppings of the wood-louse may open some way of prevention. The so-called seven-days' fever described by Rogers and Clayton is also of interest to the Navy and Army, but more work will require to be done before its true nature and mode of spread are established. In surgery there are numerous important questions, such as anæsthetics and antiseptics on active service, and many others. The effects of the spirochæta pallida and the gonococcus are still far too marked on our sailors and soldiers. A great deal could be done in the way of prevention if more determined efforts were made on the part of the military authorities and medical officers. The treatment of these diseases has progressed of late years, and there seems some likelihood of further improvement in this direction in the future. On the hygienic side of our work there are, of course, many of the most important subjects affecting the sailor and soldier. I have been struck lately by the discovery that beri-beri is due to the polishing of rice, by which it loses the greater part of its nourishing power. It might be worth investigating, if it has not already been done, as to how much of the nourishing power is taken from wheat by like processes. Then, again, there are questions of tinned foods and their effect on health. Why did so many of us suffer from jaundice in the South African war? How best to filter water in the field, the question of clothing, and the best mode of carrying kit, should the soldier's boot approach more to the natural shape of the human foot than it does now, or is the present shape satisfactory? The question of physical training of the soldier is also most important, and its effect on the soldier's heart. Medical organisation for war is completely altered. Questions coming under this heading are naturally of supreme importance to service officers. The Territorial Medical Force has been lately established in a much more serious fashion than the old Volunteer Force, and the organisation of voluntary aid societies has been put on a definite footing. We hope to have papers by Territorial officers on the special difficulties which affect their service. These and many other subjects ought to employ the energy and time of this society. Much has been done, but much more requires to be done. What is wanted is work, intelligent persevering work, as in my way of thinking Nature may be looked on as something ductile, which is capable of being moulded into any shape or form by the worker who is not discouraged by failure—

> "but strong in will
> To strive, to seek, to find,
> And not to yield."

Lieutenant-Colonel R. J. S. SIMPSON, C.M.G., R.A.M.C., and Dr. M. S. PEMBREY opened a discussion on "Soldier's Heart." Lieutenant-Colonel SIMPSON presented statistics which showed that the incidence of both valvular and functional disease of the heart attained its maximum in the third year of service, and that in spite of improvements in the physical training of soldiers the incidence was the same now as in 1890. The clinical features of disordered action of the heart were, in addition to increased rapidity in the pulse-rate, blue cold hands, defective muscular development, a low skin temperature, increase of the knee-jerks, and a generally increased muscular irritability. The blood pressure was high, ranging about 140 mm. Hg. As to treatment, he thought it a great mistake to put the patient to bed or to pay too much attention to the cardiac condition. At Woolwich they were kept employed in the garden, with great advantage; but he was of opinion that "disordered action of the heart" quite unfitted a man for soldiering. He suggested the possibility that the disease arose in persons with a congenital defect of their muscular system.—Dr. PEMBREY gave an outline of the mechanism regulating the heart beats. He agreed with Deane that there was no normal pulse-rate, but that each man had a pulse-rate peculiar to himself. The maximum incidence of cardiac disabilities in the third year of service showed that there must be something in a soldier's life which tended to the production of heart diseases. Soldiers at work were under a disadvantage as compared with civilians, since they worked heavily clothed and with a pack; the consequent rise of temperature and the dilatation of the cutaneous vessels threw a strain on the heart. Alcohol and smoking were factors common to civilians and soldiers, but he thought that those officers were right who did not permit smoking on the march. He suggested that the sharp tone in which orders were given might have an influence, since the necessary instantaneous response caused an increase in the pulse-rate; this had been shown by experiments on firemen. He agreed with Lieutenant-Colonel Simpson about the bad effects of bed on such cases, but did not agree that they should be invalided.—Dr. JAMES MACKENZIE asked whether men were admitted to hospital or rejected for service because they had a murmur or because they broke down. Many healthy hearts did show murmurs and he thought the rejection of recruits for a murmur alone was a mistake.—Surgeon-General A. M. BRANFOOT, C.I.E., I.M.S. (retired), attributed disordered action of the heart to cigarette smoking.—Dr. BYRES MOIR asked whether anyone had noted a connexion between tall men and disordered action of the heart. He thought small men were likely to make better soldiers, so far as the heart was concerned. An abnormally slow pulse was bad; such cases were

liable to syncope.—Lieutenant-Colonel H. E. DEANE, R.A.M.C. (retired), said he no longer believed that the position of attention had anything to do with soldier's heart nor over-training, since the men affected were soft, flabby men. Swedish exercises were no better than any other. He thought that clothing might have something to do with the causation.—Lieutenant-Colonel C. H. MELVILLE, R.A.M.C., suggested that the apparent increase in heart diseases in the third year of service might be attributed to the rejection of men coming up for foreign service. He attributed soldier's heart to the over-exercise of recruits before they were properly fed, and suggested that recruits should be fed up for a month before any serious work was given them. It was necessary to reject men with heart murmurs, since one could not separate injurious from harmless murmurs in a recruiting station.—Major W. S. HARRISON, R.A.M.C., referred to the work of Davy in 1876. Davy attributed soldier's heart to the compulsory position of "attention" which, as he pointed out, was accompanied by a habitual semi-expansion of the chest and loss of action of the respiratory pump. Lieutenant Hayes had done some experiments for Major Harrison, counting the pulses of men "standing easy" (in which position it was impossible to expand the chest in the soldier's habitual manner) and after five minutes' standing at "attention." In 29 observations there was an average increase of 7·5 beats in the pulse-rate after standing at "attention," the maximum increase being 20 beats, while in only 3 instances of the 29 was there no increase in the pulse-rate. Major Harrison also referred to a personal experiment, where he found that his pulse-rate was increased by 15 beats when he put on a tight jacket.—Fleet-Surgeon W. E. HOME, R N., thought that marines suffered more from heart troubles than bluejackets, and attributed the difference to the better feeding of the latter.—The PRESIDENT said that the diagnosis of valvular or functional disease of the heart in the Army was often a matter of personal equation in the observer. He related a personal observation when shooting on a very hot day; whilst he was wearing his coat he was much oppressed, but when he removed his coat he was able to shoot for the rest of the day in comfort. He suggested that the proper way to solve the etiological problem was by means of a series of well-conducted experiments.—Lieutenant-Colonel SIMPSON and Dr. PEMBREY then replied.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at Liverpool on Oct. 21st, Dr. W. K. Walls, the President, being in the chair.—Dr. H. Leith Murray, Dr. R. Stenhouse Williams, and Dr. A. J. Wallace (Liverpool) communicated a paper on the Incidence, Characters, and Significance of Bacillus Coli in the Urine of Gynæcological Patients Before and After Operation. They found it present in 44·5 per cent. of normal urines examined before operation, and 93 per cent. after operation. The type in every instance was the B. coli verus of MacConkey, but agglutinative differences were readily made out. There appeared to be no relation between post-operative temperatures and the presence of the bacillus. The suggestion was made that, in inflammatory conditions, the bacillus in question may, more often than is thought, be a secondary infection.—Dr. Wallace showed an Unusual Specimen of great interest. The uterus was enlarged to the size of the six months gravid organ by the collection within it of several pints of dark, chocolate-coloured fluid. It was removed from a married woman, aged 67 years, who had passed the menopause 17 years previously. There was no new growth of the uterus to explain the condition. The history was of only three months' duration, and the signs and symptoms had led to the diagnosis of a malignant ovarian cystoma. Operation disclosed a dark-red, angry-looking uterine enlargement, which was thought to be due to a rapidly-growing sarcoma. Total hysterectomy was performed with fatal result (shock). The walls of the uterus were composed of fibro-muscular tissue, varying from three-eighths to one inch in thickness and without trace of lining endometrium or epithelium.—Mr. R. Favell (Sheffield) reported a case of Cæsarean Section for Concealed Accidental Hæmorrhage. The patient, a primigravida, aged 24, had been seized with acute abdominal pain and collapse the day before admission. She was seven months pregnant. On admission she was very pale and collapsed; pulse rate, 120; respirations, 40; marked œdema of the legs and face. The uterus was unduly enlarged, tense, and tender. The os was closed and the cervix not taken up. There was a little vaginal bleeding. There was only a drachm of urine in the bladder and that was loaded with albumin. Cæsarean section was at once performed. The uterine wall was of a mottled purple colour. More than two pounds of blood-clot was found in the uterus. The fœtus, well developed for seven months, was dead. There was no post-partum hæmorrhage. In spite of saline injections and other diuretic measures, anuria and uræmic coma ensued. Death occurred on the fourth day.—Dr. T. B. Grimsdale (Liverpool) recounted a case of Full-term Ectopic Pregnancy and showed the decomposing macerated fœtus which he had removed from the abdominal cavity. The patient, aged 24 years, had borne one child five years previously. There had been amenorrhœa for two years and an abdominal swelling for a few months less. Fifteen months previously she had had slight abdominal pain for two days; this was not accompanied by vaginal bleeding. Afterwards the abdominal swelling seemed to get smaller. Eight months later pain again occurred for a short time. For a month before admission to hospital she had had constant abdominal pain, and had been getting thinner and experiencing night sweats. Consideration of the history and the physical condition led to a correct diagnosis. The sac was intra-ligamentous; it contained a quantity of offensive gas as well as the stinking fœtus. The placenta was not seen. The sac was sutured to the abdominal wall and packed with gauze. Four months elapsed before it was closed and the wound healed.—Specimens were exhibited by Dr. D. Lloyd Roberts (Manchester), a Uterus showing Subserous Fibroids (calcified), Fibroid Polypus, and Cancer of Cervix; and by Dr. A. Donald (Manchester), (1) Infected Fibroid of Uterus; and (2) Cancer of Corpus Uteri.

Reviews and Notices of Books.

The Ear and Its Diseases. By ALBERT A. GRAY, M.D. Glasg. With stereoscope and 123 illustrations, of which 37 are stereoscopic. London: Baillière, Tindall, and Cox. 1910. Pp. 388. Price 12*s.* 6*d.* net.

COMING as it does from the pen of the scientific man whose researches upon the labyrinth have gained for him the blue ribbon of international otology, Dr. Gray's book naturally awakens many anticipations, and we may at once say that, in our opinion, these are favourably realised. Fertility of idea and suggestion combine with moderation and lucidity of expression to render the book one of the most important productions in recent otology. We are constrained to sound this high note of praise, not because we are at one with the author in all or most of his opinions, but chiefly because of the peculiarly stimulating quality of his writing.

Dr. Gray is well equipped for his task of expositor, and he does not spare pains. Upon the problems of acoustics and physiology he brings to bear a mind trained in the schools of physics and mathematics, while a wide clinical experience and lively critical acumen render his opinion upon such subjects as the indications for operation in aural suppuration worthy of the most weighty consideration.

The chapters upon anatomy and physiology are characterised by both depth and clearness. The researches and theories of the older workers are accurately, if briefly, detailed, and the results of the author's own investigations, many of which already occupy an honoured place in the history of otology, are imparted with becoming prudence and restraint. As illustrative of the suggestiveness of the comments in this section we may refer our readers to the remarks upon the powers of orientation manifested by certain animals, and upon the variable nature of sensory stimuli.

The section on general semeiology is remarkable for an effort to rehabilitate paracusis Willisii as a reliable guide to "the position and nature" of certain pathological conditions.

Whether or not this effort will succeed remains to be seen; but whatever the outcome may be, as a feat of speculative reasoning it certainly compels admiration. In this chapter also the author's theory upon the production of tinnitus is one which will create much interest even if it also may evoke some criticism. The pathogenesis of otosclerosis is another subject to which Dr. Gray has devoted much work and thought, and we believe that we express the general opinion when we say that at the present time his views hold the field to the exclusion of all others.

Apart from the author's views upon the vexed questions of otology—naturally the most attractive feature of his book to the philosophical mind—the volume will be found to be an eminently readable and practical guide to diseases of the ear, which we can confidently recommend to the beginner no less than to the expert. Our notice would be incomplete did we fail to call attention to the excellence of the illustrations.

Medical Supervision in Schools. By EDWARD M. STEVEN, M.B., Ch.M. Edin., Royal Commissioner for South Australia, 1909. London: Baillière, Tindall, and Cox. Pp. 268. Price 5*s.* net.

Dr. Steven's book represents a part of the result of his tour in Great Britain, Canada, the United States, Germany, and Switzerland as commissioner to inquire into medical inspection and allied subjects on behalf of the Government of South Australia. The volume describes the special systems in force and the special methods used in Great Britain, on the Continent, and in America, and will be useful as enabling the school doctor in one place to compare the detail of his procedure with that of a colleague on the other side of the globe. These comparisons cannot fail to be fruitful, and are made much more vivid by the provision of some 40 good photographic illustrations of all kinds of details—from school nursing to school baths—in various parts of the world. Dr. Steven's method brings out some piquant divergences of opinion, as when he quotes the diatribe of Dr. Sheard of Toronto against medical inspection of school children, which is described "as a pure fad, instituted principally by women and agitators ..... who desire easy billets for their friends, with good pay and little work." Dr. Sheard can hardly be dealing with conditions analogous to those existent in other and larger urban centres, and it is conceivable that he does not know what all those conditions are.

There are also interesting divergences of fact in the various chapters which make suggestive reading. Thus it is known that the percentage of phthisis among London school children is very low, whereas Dr. Steven informs us, from the information he has collected, that in New York "cases of incipient phthisis are innumerable." This applies apparently chiefly to the Italian population. An isolated observation made in this section is also of some interest; it is a note on "the lack of care exercised by the average American general practitioner in regard to his personal appearance. It is no uncommon circumstance to meet the average school medical officer in no better habiliment than a third-rate London clerk." Dr. Steven mentions also a beard "of three days' growth, greasy clothes, and sometimes a quid of tobacco in his cheek." Fortunately, this observation (which might perhaps have been made in other countries also) does not prevent Dr. Steven saying of medical inspection in New York that "the authorities can well command the admiration and esteem of all nations throughout the civilised world for their honesty of purpose," and "their extreme desire and unswerving endeavour to protect their children." It is unfortunate that this does not prevent the terrible overcrowding in the tenements and the high rate of incidence and mortality of phthisis, matters upon which we have commented recently in THE LANCET.

One of the most interesting sections of the book is that dealing with Germany and Switzerland. Here we are told the details of examination and treatment in Cologne, Charlottenburg, Munich, Frankfort on the Main, Wiesbaden, Strasburg, and Zürich. It is with regard to treatment in the special school clinics that German experience is particularly valuable just now, and the detailed descriptions of the dental clinics at Strasburg and at Cologne are very useful for comparative purposes. Dental clinics also exist at Wiesbaden and Zürich. At Wiesbaden the question of the treatment of school children, apart from teeth, has been temporarily solved by the establishment of a voluntary clinic by six consultants who give their services free, the rent of the building being paid by the town.

Zürich devotes a good deal of attention to stutterers and issues long printed instructions for use at home and for treatment at school. To Charlottenburg belongs the honour of having established the first "open-air school" (although the medical officer, Dr. Neufert, prefers to call it "forest school"), and the seventeenth chapter contains a useful description of the buildings and organisation. In one matter Germany is notably in advance of this country and that is in the provision of school baths. Dr. Steven sums up his impressions of this detail of school life in his penultimate chapter and gives some good diagrams and sketches of baths in Wiesbaden, Frankfort, Munich, and Cologne.

We are so much in the habit of hearing of the German superiority in school matters that it is rather remarkable to learn from Dr. Steven of the impression made upon him by the poverty of Germany. Dr. Steven says it "must be distinctly understood that the latter [Wiesbaden] is by no means the only place in Germany where this is particularly noticeable," and goes on: "Much more distress, in the shape of abject poverty, as evinced by the pinched faces, eager, hungry expressions, and sparkling eyes, exists in enlightened Germany than in most civilised countries." The observation suggests itself that it may have been the existence of this urgent poverty which quickened and stimulated the application of medical inspection and medical treatment in Germany.

Dr. Steven's book may be recommended to the school doctor and the educationist as an interesting and useful record of the actual organisation and methods in use in the different places described, and will serve a good purpose as a source from which further suggestions for organisation may be drawn.

Die Operative Geburtshilfe der Praxis und Klinik. (*The Operative Midwifery of Practice and of the Clinique.*) Von Dr. HERMANN FEHLING, Ord. Professor der Geburtshilfe und Gynaekologie zu Strassburg. With 77 illustrations. Wiesbaden: J. F. Bergmann. 1909. Pp. 190. Price 4*s.*

THE object of this work is to afford the general practitioner a *résumé* of the advances which have been made of recent years in the practice of operative midwifery. As Professor Fehling points out, the busy practitioner has neither the time nor the knowledge needed to enable him to determine what is good and what is bad practice with regard to the new methods which are introduced from time to time, and it is most important that he should recognise clearly the class of operation which he is justified in undertaking himself and that for which the patient should be entrusted to the care of a specialist or sent into a properly equipped hospital or home.

The book is concerned solely with the various operative procedures of midwifery and is divided into some 20 sections. In the description of the extraction of the after-coming head in a flattened pelvis the author recommends in cases of difficulty the use of Walcher's position.

The illustration, however, in which the two assistants are holding the legs of the patient, hardly gives a true representation of this position, since it is essential that the patient's legs should be allowed to hang freely if any real increase in the conjugate diameter is to be obtained. In a later chapter a more correct drawing of the proper attitude is given, with the patient represented as hanging with the legs free over the end of a special elevated plane. The question as to the correct foot to seize in the performance of internal version is always a matter upon which there may be a legitimate difference of opinion, but we think that in the figure given of internal version with a dorso-anterior position of the shoulder the representation of the introduction of the right hand, the patient lying on her back, is a mistake, and the use of the left hand with its palmar aspect corresponding to the abdomen of the child would be more convenient and more correct. It is interesting to note that while Sir James Simpson taught that it was best to seize the leg of the opposite side of the body to the presenting shoulder, most foreign obstetricians rightly recommend seizing the lower leg—namely, that corresponding to the presenting shoulder. That this is the correct method of performing version as well as the easiest has been demonstrated conclusively by Galabin, who has pointed out that the force applied to the lower leg acts at a greater mechanical advantage, producing rotation in one plane, than traction applied to the upper leg, which produces a combined rotation of the trunk of the fœtus about a transverse and a longitudinal axis, so as to bring into the os the opposite pole to the shoulder originally presenting.

The figure of Tarnier's forceps given is that of a very poor pattern of axis-traction forceps, a matter in which the English school of obstetricians appears to have a distinct advantage over most others if we may judge by the axis-traction forceps figured in many foreign text-books of midwifery. We notice, too, that the author apparently recommends a very inferior pattern of Levret's perforator, and, like most German obstetricians, prefers the blunt hook for decapitation, a preference which personally we can never understand, converting, as it does, a comparatively easy operation into a difficult one. The treatment of cases of ruptured uterus is another matter upon which there are many differences of opinion, but we are surprised to find Professor Fehling recommending that in cases of rupture where the child has escaped partly into the abdomen, it should be extracted if possible through the rent by the feet rather than that abdominal section should be performed.

The book will prove useful, no doubt, to those for whom it is written.

Surgical Diagnosis. By EDWARD MARTIN, M.D., Professor of Clinical Surgery in the University of Pennsylvania. Illustrated with 445 engravings and 18 plates in colours and monochrome. London: Henry Kimpton. Glasgow: Alexander Stenhouse. 1910. Pp. 772. Price 28*s.* net.

ON the accuracy of the diagnosis depends mainly the success of the treatment, and it is in diagnosis that more mistakes are made than in treatment itself. It is, however, far easier to teach the student the correct treatment to be adopted for various conditions than it is to make him capable of distinguishing those conditions each from the other. It is only in the out-patient room and in the wards that diagnosis can really be learned, but great assistance can be rendered to the student by suitable books. It is not possible by books alone to teach diagnosis, but judiciously used books are of real value, for they will remind the student in what direction he should search for symptoms or signs, and they will enable him to estimate the relative value of the various indications supplied by the case.

The first chapter on the laboratory diagnosis has been written by Dr. W. T. Longcope, and it is useful so far as it goes, but considering the important position that has now been assumed by laboratory methods of diagnosis, we consider that fuller treatment would have been of greater value. It is of little use merely to say, "To estimate the coagulation power of the blood Wright's tubes may be used, but the new instrument devised by Boggs is much simpler in application and probably more accurate," without a word as to the nature of these instruments. We may, however, refer with approval to the excellent plates which illustrate this chapter. Dr. H. K. Pancoast has supplied a useful, if brief, chapter on the applications of the X rays to surgical diagnosis.

In succeeding chapters various systems of the body are taken in order, such as the bones, the joints, and the bursæ, and their most common lesions are briefly referred to. A chapter then follows on diseases of the nervous system written by Dr. T. H. Weisenburg. This is illustrated by some useful plates showing the innervation of the skin and the relation of various nerve trunks to the spinal nerves. The diagnosis of injuries and diseases of the nervous system, always so puzzling to even experienced observers, is here made fairly simple, and the teaching of the book should be of real service in clinical work. The other chapters deal with various regions of the body: one treats of the head, face, and neck; another of the spinal column, and so on.

The whole book is very extensively illustrated, the majority of the illustrations being reproduced from photographs of typical lesions. Although theoretically a reproduction from a photograph is more likely to give an accurate representation of the condition present, it must not be forgotten that the lighting of many photographs is inexpertly managed, with the result that a photographic reproduction such as that of a goitre on p. 328 may be practically of no value, for it is impossible to see that any swelling is present. But the outline drawings illustrating the injuries to the bones in the neighbourhood of the joints are excellent.

When the difficulty of writing a book of diagnosis is considered, we think it may be said that Professor Martin and his coadjutors have attained a high degree of success in their endeavour. Used sensibly the manual will afford the student much assistance in diagnosis.

Lehrbuch der Speziellen Pathologischen Anatomie für Studierende und Aerzte. (*Text-book of Special Pathological Anatomy for Students and Practitioners.*) Von Dr. EDUARD KAUFMANN, Ord. Professor der Allgemeinen Pathologie, und Pathologischen Anatomie; Direktor des Pathologischen Instituts der Universität Göttingen. Fifth revised and enlarged edition. With 686 illustrations. Berlin: Georg Reimer. 1909. Pp. 1383. Price, paper cover, M. 23; bound, M. 25.50.

THE appearance of a fifth edition of Professor Kaufmann's text-book is good evidence of its popularity in his own country, and from our examination of its scope and nature it deserves the reputation it has achieved. It gives an exhaustive account of the morbid conditions met with in the various systems and organs of the body, including their macroscopic and microscopic appearances, so that it is more than a mere catalogue of morbid anatomical changes in the organs. To each section is prefixed a brief description of the anatomy and development of the organ with which it is concerned. The various malformations, inflammatory changes, new growths, parasites, and other abnormalities are then described at some length, and, where necessary, the pathogenesis of these conditions is discussed and any theories offered in explanation are given. The book is copiously illustrated by figures demonstrating the gross and microscopical changes described. The subject-matter is well arranged, and various different-sized types are used, thus facilitating reference. The illustrations are in many cases less elaborate, and often more diagrammatic, than is

now the vogue in English text-books on pathology, but they are explicit and are sufficiently clear to be useful. Apart from the authorities quoted in the text, and Professor Kaufmann is scrupulous in giving the names of those whose views he refers to, there is a bibliography at the end of the book extending to 75 closely printed pages. The only criticism we have to offer is that the work of English pathologists receives but little notice, though this is a not uncommon occurrence in German text-books. Professor Kaufmann's book is a valuable work of reference, especially as representative of German pathology.

LIBRARY TABLE.

The Rearing of Children. A Practical Handbook for Mothers. By J. P. O'HEA, M.B. Lond., F.R.C.S. Eng. London: The Scientific Press, Limited. Pp. 175. Price 2*s.* net. *A Manual of Nursery Hygiene.* By W. M. FELDMAN, M.R.C.S. Eng., L.R.C.P. Lond., Lecturer on Midwifery, Hygiene, Infant Care, Nursing, &c., to the London County Council. London: Baillière, Tindall, and Cox. 1910. Pp. 168. Price 2*s.* 6*d.* net.—The increasing interest taken in the study of infancy and childhood is evidenced by the number of books devoted to supplying information in regard to the care of the young. There are many matters in which it is highly desirable that those having charge of children should be educated in order to avoid the numerous preventable diseases and disorders to which the young are so liable. In regard to the feeding, clothing, and general management of infants and children there is still a lamentable ignorance among many persons. Dr. O'Hea's little book supplies in small compass and in simple yet readable language information which is calculated to enable mothers to do the best for their offspring. The first section is devoted to the feeding of infants, and the directions given are sound and in accordance with the generally accepted principles of infant feeding. The rules for breast feeding are set forth, and full directions are given for artificial feeding when for any reason suckling by the mother is impracticable. The second section gives some general information about the ordinary infectious diseases, with directions for the management of children affected by them. The third and fourth sections deal with rickets and some of the common ailments of childhood. Useful hints in regard to breathing exercises are also given. The book is characterised by the sound common sense of its recommendations.——Mr. Feldman states in his preface that his book is intended for mothers of the so-called middle classes and for district nurses and health visitors. It also contains a large amount of valuable information concerning the care and management of infants and children in health and in illness. Questions of clothing, feeding, and of the general hygiene of the nursery are dealt with scientifically and in accordance with sound common-sense principles; moreover, wherever possible, the reasons for the recommendations offered are given. There are chapters on the use and abuse of patent or proprietary foods, on ailments due to improper feeding, and on the nature, prevention, and treatment of rickets. Simple directions for the management of infants in convulsions are also given, and some general information on the infectious diseases, on tuberculous disease, and on some common ailments is afforded. An interesting chapter is devoted to vaccination, and in it the fallacies of the antivaccinationists are exposed. The second part of the book is concerned with the health of the mother. It gives some useful information regarding the hygiene of pregnancy and the periods of lying-in and lactation. This little book should be useful in diffusing important information to mothers and others concerned in the management of children. We can cordially commend it for this purpose.

A Manual of Normal Histology and Organography. By CHARLES HILL, Ph.D., M.D., formerly Assistant Professor of Histology and Embryology at the Northwestern University Medical School, Chicago. Second edition. London and Philadelphia: W. B. Saunders Co. 1909. Pp. 468. Price 10*s.* net.—We have little to add to the remarks which we made on the first edition of this manual. To deal with the whole subject of the gross and microscopical anatomy of the organs of the human body in a volume of this size necessitates considerable compression. This is carried so far that the book would not constitute a sufficient text-book for students, in this country at all events. Its strong point is its illustrations, which are numerous, and for the most part good. As a supplement to lectures on histology, or as a means of rapidly looking through the subject dealt with by a lecturer, it has merits. The attention devoted to the teeth should render it acceptable to dental students. There are brief notes on preparation of material in the introductory section and on laboratory methods and formulæ at the end. It is not very clear why these should not have been combined in one chapter. The print and paper are good, and the price is moderate for an American book.

Francis Bacon: a Sketch of his Life, Works, and Literary Friends; chiefly from a Bibliographical Point of View. By G. WALTER STEEVES, M.D. Brux. London: Methuen and Co. 1910. Pp. 230. Price 6*s.* net.—This modest volume makes no attempt to give any fresh details of Bacon's life, and it adds little that is new to the list of his works. As the expanded title indicates, it consists of a short historical summary of the great philosopher's writings. Though this summary is to some extent chronological, Dr. Steeves has classified Bacon's works into three main headings: (1) philosophical; (2) literary; and (3) professional, or legal. So little is attempted in the way of synopsis or criticism of the material, that the purely literary output of Bacon's pen occupies far the largest part of these divisions, and even readers well versed in Bacon will find their attention drawn to rare fragments of considerable value. As an instance, the tract on "The Character of a Believing Christian in Paradoxes and Seeming Contradictions" is accepted as genuine by Dr. Steeves, and his judgment in the acceptance is probably correct. It certainly forms a valuable addendum to Bacon's "Confession of Faith," though it is not mentioned either by Rawley or Tenison. To those who know little of Bacon's writings this volume will be a good guide with which to start, while the copious details of minor works will make it indispensable to the real scholar of Baconian wisdom. The book is studded with facsimiles of various title pages, which are interesting, but are inserted in such a haphazard way that they start out of the pages like electric advertisements of whisky or meat extracts in the streets of London.

The Abuse of the Singing and Speaking Voice: Causes, Effects, and Treatment. By E. J. MOURE and A. BOUYER, Fils. Translated by MACLEOD YEARSLEY, F.R.C.S. Eng. London: Kegan Paul, Trench, Trübner, and Co., Limited. 1910. Pp. 130. Price 12*s.* 6*d.* net.—The appearance in English of Moure and Bouyer's manual on the abuse of the voice is very welcome. The book is one which should be read not only by every teacher of singing but by laryngologists. The faulty technique so prevalent to-day, which, as every throat surgeon knows, often ends in irreparable damage to the vocal organs, is, we are told, dependent upon three factors: first, the failure on the part of teachers to recognise and to allow for physical disproportion, when it exists, between the several

parts of the voice-producing mechanism—lungs, larynx, and upper air-passages; secondly, the practice of habitually forcing the voice to its extremes of power and compass; and thirdly, the too frequent use of the "chest register." In the way of treatment more can be got from preventive than curative measures. Consequently, it is advised that both at the outset of his training and during its progress the student should be placed under the surveillance of the laryngologist working in coöperation with the teacher. In these and many other important matters the book marks a new departure, and if its injunctions can be carried into effect it may herald a brighter era for vocalists. The translation is careful and exact, but shows some tendency to adhere too rigidly to the French idiom.

Manual of Medical Jurisprudence, Toxicology, and Public Health. By W. G. AITCHISON ROBERTSON, M.D., D.Sc. Edin., F.R.C.P. Edin., F.R.S. Edin. Second edition. Edinburgh: John Currie. 1910. Pp. 560. Price 8*s*.—In THE LANCET of Sept. 5th, 1908, we reviewed the first edition of this work and explained its nature and scope. We considered that it contained all that was necessary for the student to know in regard to medical jurisprudence, toxicology, and public health for the ordinary pass examinations in the final subjects, but for the higher examinations a larger work would be necessary. We now have to repeat that opinion, for the author states in his preface that as so short a period has elapsed since the appearance of the first edition, few changes have been rendered necessary. The passing of the Poisons and Pharmacy Act, 1908, receives brief consideration, as does the Children Act of the same year. A short description has been added as to the mechanical filtration of water, taking note of the many processes which have been patented for purifying water on a large scale by mechanical means. It is affirmed that by such methods the water is filtered more quickly than, and quite as thoroughly as in the filter-bed, that it is continuously efficient, that it costs much less to install, and "almost nothing to keep up, while a very small area of ground suffices." A very short account is given of Bell's patent process and of the "Candy filters," but no comment is made on their efficacy or practicability.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XLI., Nos. 1 and 2. London: C. F. Clay, Cambridge University Press. Oct. 11th, 1910.—The present part contains: 1. A Reversed Action of the Vagus on the Mammalian Heart, by H. H. Dale, P. P. Laidlaw, and C. T. Symons. The well-known phenomenon is best exhibited in the cat, and with the use of paraldehyde as an anæsthetic, after the previous action of chloroform or ether, either vagus produces it equally well. It is exhibited also with tropine in from 50 to 150 milligramme doses injected intravenously, and with nicotine in 1 to 2 milligramme doses. Hordenine methiodide may be substituted and curare also. Many text figures show the effects of the vagus stimulation when the animals have been subjected to these drugs. The authors of the article think that the effects are due to the presence in the vagus of normally masked accelerator fibres. 2. Chemical Structure and Sympathomimetic Action of Amines, by G. Barger and H. H. Dale, from the Wellcome Physiological Research Laboratories. The chemical side of this investigation is due to Mr. Barger and Mr. A. J. Ewins, whilst Mr. H. H. Dale is responsible for the physiological experiments. The importance of the ketones and of the corresponding secondary alcohols in causing and intensifying the adrenin-like action in blood pressure has been shown by various observers, and it was supposed by Dakin that this effect was due to the catechol nucleus, but evidence is here given that certain amines produced by putrefaction, none of which have a catechol nucleus, have a similar action to adrenin. Hence the conception is inadequate. The authors, therefore, proposed to trace the variations in the intensity of the specific action through a series of compounds intermediate between the putrefactive amines, in particular *p*-hydroxyphenylethylamine, and adrenin itself. These compounds simulate the effects of sympathetic nerve stimulation on muscle cells and gland cells. Hence, instead of terming the action of such bases "adrenin-like" they propose to substitute the term "sympatho-mimetic." The rest of the article is devoted to the action of the various amines, with many woodcuts exhibiting their effects. Catechol, they find, has no sympatho-mimetic action. 3. The Gases of the Arterial and Venous Blood of the Cat, by George A. Buckmaster and J. A. Gardner, from the Physiological Laboratory, University of London. 4. An Investigation of the Sino-auricular Node of the Mammalian Heart, by Martin Flack. 5. The Fate of Parahydroxyphenylethylamine, by A. J. Ewins and P. P. Laidlaw, from the Wellcome Laboratories. 6. On the Production of Glycosuria in Relation to the Activity of the Pancreas, by Ivor Ll. Tuckett, M.A., M.D.

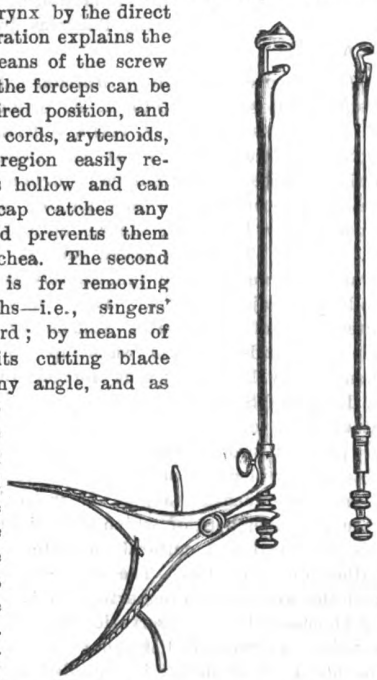
The Quarterly Journal of Medicine. Edited by WILLIAM OSLER, J. ROSE BRADFORD, A. E. GARROD, R. HUTCHISON, H. D. ROLLESTON, and W. HALE WHITE. Vol. IV., No. 13. October, 1910. Oxford: At the Clarendon Press. Subscription price, 25*s*. per annum; single numbers, 8*s*. 6*d*. each net.—The contents of this number are: 1. The Pulse Immediately Preceding the Epileptic Attack, by Alexander G. Gibson, T. Saxty Good, and R. Greenwood Penny. Tracings were obtained immediately before the fit in five epileptic major attacks. They show that there is no alteration of the pulse sufficiently definite to affect the amplitude of the wave up to the point where clonic convulsions prevent further record being taken. 2. Influenzal Septicæmia, with a Short Review of the Present Status of Bacillus Influenzæ, by Hugh Thursfield. Details are given of two cases from which the bacillus influenzæ was obtained by blood culture. Dr. Thursfield suggests that the so-called influenza bacillus is in reality only one of a group, the members of which show similar, if not identical, morphological and cultural characters but possess different pathogenic properties. The suggestive contribution is dealt with this week in a leading article. 3. Hereditary Hæmophilia, by Thomas Addis. Observations upon 12 cases are recorded showing a marked deficiency in the coagulability of the blood. This defect is regarded as the only immediate cause of the condition. 4. A Further Note on Hæmatoporphyrinuria not due to Sulphonal, by T. K. Monro. 5. Two Cases of Acute Endocarditis, by John Cowan, A. M. Kennedy, A. R. Patterson, and John H. Teacher. An interesting clinical and pathological study of the heart in two fatal cases of endocarditis is given. Microscopical examination of the *a.v.* node and bundle revealed well-marked inflammatory lesions which are regarded as explaining certain alterations in the *a.c.* interval of the jugular pulse curves. 6. Tuberous (Tuberose) Sclerosis, by J. S. Fowler and W. E. Carnegie Dickson. A case is recorded and an analysis is given of the literature of the subject. The writers conclude that tuberous sclerosis constitutes a definite form of idiocy, and that it may sometimes be diagnosed during life by the recognition of some of the associated tumours in a mentally defective person who is, or has been, subject to epileptiform convulsions. 7. Coupled Rhythms of the Heart, by John M. Cowan and W. T. Ritchie. They prefer the term coupled rhythm for the conditions described to that of pulsus bigeminus, and they do not include the pulsus alternans. They divide the cases into

two groups—those of the ventricles alone and those of both auricles and ventricles. Coupled rhythms may occur from various causes and are often due to a regularly recurring extra-systole, most frequently of ventricular origin. The writers of the paper sum up their views in the following sentence: "Whenever an enfeebled heart is unduly irritable in an abnormal site, any excessive rise of intracardiac pressure may produce a regularly recurring premature systole which originates in the irritable area." 8. The Outlook of Sufferers from Exophthalmic Goitre, by W. Hale White. The after-histories of a considerable number of hospital and private cases are given, with a view to throwing light upon the outlook of patients with this disease apart from operative measures.

New Inventions.

IMPROVED LARYNGEAL FORCEPS.

Messrs. Krohne and Sesemann have recently made this instrument for me, and I have found it very useful for operations on the larynx by the direct method. The illustration explains the mechanism. By means of the screw the cutting part of the forceps can be rotated to the required position, and the growths on the cords, arytenoids, or inter-arytenoid region easily removed. The cap is hollow and can be opened; this cap catches any pieces removed and prevents them passing into the trachea. The second attachment shown is for removing very small growths—i.e., singers' nodes from the cord; by means of the same screw its cutting blade can be fixed at any angle, and as the blade fits into a depression on the foot-piece which is under the cord the growths can be removed and the risk of injuring the cord is reduced to a minimum. The different attachments can easily be removed from the handle.



GEORGE N. BIGGS, M.B., B.S. Durh.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

A COUNCIL meeting of this association was held at 34, Copthall-avenue, London, E.C., on Oct. 18th. Mr. D. B. BALDING was in the chair.

A letter was considered from a country member complaining that the guardians in his district had appointed as district medical officer a practitioner who resided seven miles away from his district. This had been sanctioned for one year by the Local Government Board, but recently he had been re-elected by the guardians for a further period of three years. It was unanimously considered by the council that the matter required investigation; that on the face of it it was a scandal to appoint a district medical officer living seven miles away from his district, having regard to the necessities of the sick poor.

A communication was received from a public vaccinator complaining that because he had resigned his district medical officership on account of inadequate remuneration he was now threatened with the loss of his vaccination office. The local division of the British Medical Association had banned the appointment he had resigned, and so far there had been no applicants, but he felt sure that if no one would take this post at the old rate the guardians would endeavour to attract applicants by adding the post of public vaccinator to it. Strong comments were made by those present on the unprotected position of the public vaccinator, and the unscrupulous use made by the guardians of the remuneration from this source to underpay Poor-law appointments. It was regretted by the council that no assistance could be given to their correspondent. Under the present law only a month's notice need be given by the guardians to determine any public vaccinator's office, and this could be done without any reason being given, and it appeared that the Local Government Board had no control in the matter at all.

Another correspondent wrote complaining of the refusal of his guardians to allow him the extra fee of £2 for attendance on a long case of phlegmasia dolens on the ground that he had not attended at the confinement of the patient, having only received the order 12 days afterwards. He quoted from Art. 182 of the Gen. Ord. of July, 1847, which lays down that a district medical officer shall be entitled to a fee of £2 in any "special case where great difficulty may have occurred in the delivery, *or long subsequent attendance in respect of some puerperal malady, or affection, may have been requisite.*" There was some difference of opinion on this point. It was thought by some that in order to be entitled to this fee the medical officer must have been called to the confinement or very shortly afterwards. But a majority of the council thought that under the article any long-continued attendance on a puerperal case was sufficient, and the honorary secretary was instructed to write and advise the member to push his claim and proffer the assistance of the association.

A delegate from the district medical officers of a metropolitan borough also attended the council meeting to ask for assistance. He stated that the guardians, owing to a recent resignation of one of the district medical officers, were endeavouring to reduce the number of district medical officers from five to four and to force on to two of their number the vacated district under very inequitable conditions. The district medical officers claimed that there should be a re-arrangement of the whole area. That under the present arrangement only one of their number received about the average payment of the district medical officers throughout the metropolitan district—viz., 3*s.* per order. That all the others were being paid less than 2*s.* per order. They had sent in a memorial to their board of guardians, and if this were ignored they proposed to carry it to the Local Government Board. The council expressed its sympathy and promised all the assistance in its power.

The honorary secretary read a letter from Mr. Shirley Fussell asking the association to appoint four delegates to meet delegates from the National Poor Law Officers' Association, the Union and Rural District Clerks' Association, and the Workhouse Masters' and Matrons' Association in a joint conference to consider the recommendations of the Royal Commission on the Poor-laws affecting the interests of Poor-law officers, and report as to what action (if any) it is necessary or desirable to take now, or in the future, to safeguard the interests of the service.

The council appointed Mr. W. Holder (Hull), Mr. A. A. Napper (Cranleigh), Dr. F. S. Toogood (London), and Dr. Major Greenwood (London) to represent the Poor-law Medical Officers' Association in the proposed conference.

CONTINENTAL ANGLO-AMERICAN MEDICAL SOCIETY.—The annual meeting of this society was held at 81, Boulevard Malesherbes, Paris, on Oct. 15th. The annual dinner was held in the evening at the Carlton Hotel, Paris. The chair was occupied by Sir Frederick Treves, who warmly congratulated the society on its excellent work, laying stress on its usefulness in uniting and in bringing to the notice of the profession at home responsible men to whom patients travelling abroad could be safely entrusted. This very successful gathering was brought to a close by two happy speeches from Professor Tuffier of Paris and Dr. Alexander Lambert of New York, who assured the members of the regard of their colleagues in France and in America.

THE LANCET.

LONDON: SATURDAY, OCTOBER 29, 1910.

Report on the Measures Taken Against Malaria in the Lahore (Mian Mir) Cantonment.

THERE was a considerable conflict of opinion respecting the value of the results obtained at Mian Mir from the experiment, begun in 1901, of applying anti-mosquito measures for the prevention of malaria at that station. By some the experiment was regarded as a failure, although every chance had been given to it; by others it was contended that it would have been a success if the programme had been fully followed up. In consequence of the controversy Mian Mir acquired considerable notoriety, which may have led the authorities recently to change the name to "Lahore Cantonment." As the results of the anti-mosquito campaign remained in doubt, suggestion was made that the Indian Government should institute an impartial inquiry into the Mian Mir experiment. Accordingly they appointed a commission in October last to make the necessary investigation. The commissioners were three in number—viz., the Hon. R. NATHAN, C.I.E., of the Indian Civil Service; Lieutenant-Colonel H. B. THORNHILL, C.I.E., of the Indian Army; and Major L. ROGERS, M.D. Lond., I.M.S., Professor of Pathology in the Calcutta Medical College, only the last of them, therefore, being a medical man, but he a well-known authority on fevers of the tropics.

The terms of reference to this small but well-equipped commission were "to inquire and report upon (1) the manner in which the Mian Mir experiments, which had for their object the extermination of mosquitoes and the abolition of malaria by means of operations against mosquitoes, were carried out; (2) the results obtained from the operations at Mian Mir; and (3) whether operations similar to those employed at Ismailia, Panama, and Lagos can be successfully applied to Indian centres of population." The commissioners visited Lahore cantonment on Oct. 21st and spent six days in making a general survey of the station, examining the drainage system, inspecting the excavations and depressions likely to serve as breeding places for anopheles, searching for adult malaria-bearing mosquitoes, examining the spleens of children in the native bazaars, and testing their blood infection. Statistics and other data were also collected, and evidence was taken on the spot from a number of witnesses resident in the cantonment. On their return to Simla the commissioners examined other witnesses; in all some 22 persons gave evidence, 13 of them being medical men. On their visit to Mian Mir the commissioners were accompanied by Captain S. R. CHRISTOPHERS, I.M.S., who had taken part in carrying out the original anti-mosquito campaign which was begun in 1901. The report of the commission, which is dated Nov. 25th, 1909, was completed with great promptitude, for the interval between the beginning of the inquiry and the report was little over a month. The report is made under five chief headings which relate to (1) description of the cantonment; (2) an account of the operations carried out by Major JAMES and Captain CHRISTOPHERS during 1901–3, and their results; (3) an account of the general operations undertaken by the military authorities from 1904–09; (4) the result of these measures; and (5) an examination of anti-malarial campaigns in other countries with a view to test the applicability of similar measures to Indian conditions. The report comprises some 60 folio pages of printed matter, including tables of statistics. In addition there are two maps and a number of charts. In their summary of conclusions the commissioners say that while anti-malarial operations in Mian Mir were carried out under conditions which were in many respects favourable, yet, on the other hand, there were circumstances which undoubtedly interfered with the success of the experiment. Among these it may be mentioned that the station as well as the surrounding country is flat, the subsoil when wetted becomes impervious, the rainfall is concentrated into the autumn months, and its distribution in some years is favourable to the breeding of anopheles. Moreover, the cantonment is very large (8 square miles) compared with its population (16,000), and its drainage system involves the maintenance of an enormous length of earth drains. A whole series of deep excavations and other depressions lie immediately around the station. Lastly, the native bazaars, lines, and servants' quarters with infected children are interspersed throughout the cantonment with bodies of troops, including non-immune Europeans. As regards the later stage of the anti-mosquito campaign, the commissioners say that the special facilities offered by the military organisation and strength of the station were utilised to the utmost extent, and an immense amount of work was done to abolish the breeding-places of anopheles within the cantonment. The closing of the irrigation channels, the reform of the drainage, and the filling up of depressions during the period 1904 to 1909 must have had an enormous effect in diminishing the opportunities for the breeding of mosquitoes. The commissioners, in fact, assert that it would not be easy to find elsewhere an example of equally thorough and painstaking operations. Notwithstanding all that was done, the mosquito breeding-places were not altogether abolished. Minor anti-larval operations in all parts of the cantonment and in all seasons had not been adequate to suppress completely the breeding of mosquitoes where opportunity for this still existed. The effect of the measures on the malarial conditions of the station appeared to the commissioners to be negative. Adult anopheles, it is said, were as abundant as ever and malaria was no less prevalent than before among the native population. Making allowances for causes affecting statistics, there would seem to be some, though perhaps not very great, diminution of malaria among the British troops. Having regard (1) to the similar reductions in other cantonments, (2) to the degree of perfection with which quinine prophylaxis is now carried out, and (3) to the fact that any improvement that there may be would not appear to be shared by a native population among whom quinine prophylaxis is imperfect or non-existent, the commissioners do not think that there is

any proof that the anti-larval operations have contributed materially to the diminution.

The whole situation illustrates the difficulties of eradicating mosquitoes, and emphasises, in the opinion of the commissioners, the need for further research and experiment. In accounting for this failure two conjectures are hazarded in the report: either (1) the circumstance that a very great but not altogether perfect reduction of breeding-places does not appear to have been accompanied by an improvement of malarial conditions may possibly indicate that where other conditions favour the existence of malaria partial abolition is of no avail until a point is reached nearer total abolition than has hitherto been anticipated; or (2) the existence of an enormous collection of breeding places situated all around the station, but at some distance from it, may enable mosquitoes breeding in those places to frequent the lines and the bazaars for their food in such numbers as to neutralise the effect of diminished breeding within the inhabited area. If this be the case it follows that protective measures would have to be extended far beyond the distance hitherto regarded as necessary. Finally, it may be said that the amount of organisation, supervision, labour, and expenditure devoted to the experiment has been greater than would be possible in any ordinary Indian town of similar size and population. The operations carried out at Mian Mir cannot, therefore, be taken as typical of what might ordinarily be done in Indian towns, and still less in Indian rural districts. In discussing the applicability of the methods adopted in Ismailia, Panama, and elsewhere the commissioners state that the facts which they have summarised on this part of the inquiry do not lead them to conclude that anti-malarial measures such as have been carried out in these places can be readily adopted in India with the assurance of speedy and certain success. The problem, the commissioners add, is one of immense complexity and difficulty, and unhappily no satisfactory solution is yet in sight. Nevertheless, it may be accepted that anti-larval measures combined with quinine prophylaxis offer great possibilities; the Government therefore should not be deterred because of the magnitude of the task or the uncertainty of the issue. In the opinion of the investigators the work for the immediate future lies in patient and searching inquiry and in careful and continued experiment. It is essential for the wide success of any measures that they should have the active coöperation of the people whose interests they are intended to serve, and that they should go hand in hand with general improvement of the sanitary environment of the Indian people whose education in this direction lies at the root of the problem.

Partial Enterocele in an Obturator Hernia.

IN THE LANCET of Oct. 15th there was recorded by Dr. H. LEWIS BARKER a case of Richter's hernia strangulated in the obturator canal. Richter's hernia, as it is most commonly called nowadays, or partial enterocele as it is better named, is a decidedly rare condition, and even since it was first described it has often been confused with other conditions somewhat similar. The essential point in a partial enterocele is the inclusion within the hernial sac of less than the whole circumference of the bowel. In fact, in the majority of cases, the portion included in the sac is less than half the circumference. It is somewhat difficult in accounts by the older writers to be certain what was the condition which they wished to describe, and so it is not easy to determine when this form of hernia was first recognised. In 1700 LITTRE of Montpellier described a form of hernia which had not previously received recognition, for in it the piece of bowel involved formed a pouch-like projection from one side of the bowel. It appears to be fairly certain that in two of the three cases which he had observed the strangulated portion was what we now know as a Meckel's diverticulum. It is possible that the third case was really a partial enterocele, and this is probably the reason why the name of LITTRE was given to this variety up to comparatively recent years. As Sir FREDERICK TREVES, however, has pointed out, LITTRE apparently confused two conditions, for, at all events, two of his cases were examples of strangulation of a diverticulum. The same observer showed that the true partial enterocele was first clearly described by RICHTER in 1778, and therefore suggested that it would be better to confine the name Littre's hernia to the hernia of a diverticulum and to give the name Richter's hernia to the partial enterocele.

We agree that if the names of persons are to be given to diseases or other morbid conditions it is desirable that the name of the author of the earliest description should be employed. But if this rule is to be followed in this case, partial enterocele should be called "Lavater's hernia," for his description was published in 1755, and it was probably written much earlier. While willing to give the credit to all these pioneers in the description of different forms of hernia we think that we have here an excellent illustration of the desirability of not using personal names in the titles which we give to morbid conditions; it is preferable to let the name be, so far as possible, descriptive of the disease. No real objection can be put forward against employing the term "partial enterocele" for that form of hernia which is now generally associated with the name of RICHTER, and hernia of the diverticulum for that which appears to have been described for the first time by LITTRE. When the greater part of the circumference of the bowel is involved in a partial enterocele, the signs and symptoms in no wise differ from those of an ordinary hernia, and if strangulation should occur the symptoms are well marked. If, on the other hand, less than half the circumference of the bowel is involved, the symptoms present, even if strangulation occur, may be remarkably slight. As no occlusion, or hardly any, occurs, there is no obstruction to the onward passage of the intestinal contents, no constipation is present, and vomiting may be infrequent and slight, and abdominal distension is generally absent. In this absence of severity of the symptoms lies the great danger from a partial enterocele, for perforation of the bowel may occur without the appearance of any symptoms suggestive of the likelihood of such an occurrence. It seems to be clear from the statistics that the form of hernia in which partial

enterocele occurs is chiefly the femoral, and therefore it is not surprising that the majority of cases occur in women.

In the case reported in THE LANCET recently the partial hernia was an obturator hernia, and this association is not so rare as would be thought, when we consider how rare any form of obturator hernia is; for the opening in the obturator foramen through which the bowel can make its way is very small, and it can only rarely happen that the whole circumference of the bowel is engaged in the sac. When this association does occur, when a partial enterocele takes place in the obturator opening, the danger of the situation is extreme, for in the first place the nipping of the gut may give rise to hardly any symptoms, and, in the second place, the depth of the hernia from the surface may cause no visible local prominence, and therefore the difficulty of recognising the condition early will be greatly increased. The treatment best adapted for a strangulated obturator hernia has hardly yet been determined. While some are still in favour of approaching the hernia by an incision below Poupart's ligament, most surgeons consider that the intraperitoneal operation gives a better view of the hernia and a better opportunity of dealing with the bowel if its vitality has been seriously lowered. There can be little doubt that the abdominal route offers many advantages.

The Bacteriology of Influenza.

DURING the epidemic which occurred in 1889–91 the disease known as influenza was investigated in a thoroughly scientific manner. We are not now concerned with the history of the malady, but it would seem probable that since about 1650 a disease with similar characters has now and again appeared in this country. Since 1891 there has scarcely been a single year but that a recurrence of "influenza" in one place or other has taken place. The clinical symptoms, however, have varied considerably, and numerous authorities are of the opinion that many of these outbreaks are of the character of "catarrhal fever" rather than of true influenza. This view is to some extent supported by bacteriological considerations, for although in the epidemic of 1889–91 PFEIFFER described a bacillus which has been widely accepted as the causal agent of the disease, this organism has not always been isolated during epidemics of more later years, but other microbes have been found, notably the micrococcus catarrhalis. Not only is this the case, but organisms indistinguishable from Pfeiffer's bacillus have been found in disorders which were not obviously of influenzal origin, so that there appears to be reason to believe that on the one hand what is clinically called influenza is not one disease but a series caused by different microbes, and that on the other hand the organisms hitherto described as bacillus influenzæ are not all identical with it, but belong to a group the various members of which possess very different pathogenic powers. The bacillus first described by PFEIFFER is very small, having about the same diameter as the bacillus of mouse septicæmia, but only half its length ($0 \cdot 2\mu$ by $0 \cdot 5\mu$). It is usually solitary, but it also occurs in chains of three or four. It is non-motile, and, so far as is known, does not form spores. It stains with some difficulty and is Gram-negative. It grows poorly upon artificial culture and is not easy to isolate, as the associated bacteria tend to outgrow it. It flourishes most readily upon culture media containing hæmoglobin or blood, but can also be cultivated upon glycerine agar-agar. This is the well-known and typical Pfeiffer's bacillus; the question is what relation it bears to other organisms resembling it, resembling it indeed so closely that the difference is imperceptible, which are found in conditions other than "influenza."

In the *Quarterly Journal of Medicine* for October is an article entitled "Influenzal Septicæmia, with a Short Review of the Present Status of Bacillus Influenzæ," by Dr. J. HUGH THURSFIELD, in which an interesting summary is given of this matter as it now stands. It is pointed out in this contribution that PFEIFFER and his followers laid down the proposition that where organisms of the bacillus influenzæ type are found there is a definite influenzal infection, and he called certain similar organisms which were found in non-influenzal affections pseudo-influenzal bacilli, attempting a differentiation on grounds of morphology only. Another observer, JOCHMANN, maintains that no essential morphological difference exists between the organisms derived from influenzal and non-influenzal sources. Although there is a general agreement among bacteriologists as to the morphological characters of the organism which PFEIFFER discovered, there is a wide divergence of opinion as to its occurrence in the blood, PFEIFFER and JOCHMANN declaring that when the organism appears in the blood it is usually a post-mortem or agonal phenomenon, while CANON and others claim to have found it in the blood in a large percentage of cases. In connexion with this subject the two cases recorded by Dr. THURSFIELD are of interest. From the clinical aspect, one patient was suffering from an attack of influenza, whilst in the second case there was no evidence of anything resembling such an attack, yet in each instance organisms were found in the blood which corresponded perfectly to the bacillus of Pfeiffer. The first case might justly be classed under the heading of influenzal septicæmia. We have already mentioned that Pfeiffer's bacillus, or rather one indistinguishable from it morphologically, has been found in other diseases. It is fairly frequent in the broncho-pneumonic patches of children dying from diphtheria, usually in conjunction with streptococci and pneumococci, and it has also been demonstrated in measles, in scarlet fever, and in the lungs of patients who have died from tuberculosis. Probably in these cases of mixed infection Pfeiffer's bacillus was only present as a saprophyte. A similar organism has also been found in whooping-cough, but here, as Dr. THURSFIELD points out, the question is more complicated. Some observers have not been able to distinguish the microbes found in this disease from Pfeiffer's bacillus, but BORDET demonstrated certain differences in cultivation which tend to show that the organisms described by him are not the same as those connected with influenza, but are the causal agent of whooping-cough. Further evidence was forthcoming in the appearance in the blood of specific immune substances. Another condition that has recently attracted attention is a purulent form of cerebro-spinal meningitis. In this instance also organisms have been found resembling both in morphological and cultural characteristics the

bacillus of influenza. COHEN, however, is of opinion that this form of meningitis is in reality a new disease due to an organism which, though in many respects similar to Pfeiffer's bacillus, can be distinguished from it by its pathogenic effects upon rabbits and guinea-pigs. Dr. THURSFIELD likewise mentions that similar organisms have been found in cases of otitis media, and in four cases at St. Bartholomew's Hospital in pus from the antrum of Highmore.

It will thus be seen that the presence of an organism conforming in every particular to Pfeiffer's bacillus does not necessarily indicate that there has been an influenzal infection. There would appear to be many "strains" of the bacillus, each possessing very different pathogenic powers, being in this particular somewhat similar to the characteristics exhibited by bacilli of the colon group. In some respects also a resemblance to the pneumococcus and other organisms is shown, in that although present in an apparently healthy body or in a lesion, they do not produce their usual morbid effects. Further, the bacillus of Pfeiffer has been found in the secretions of the nose and throat for long periods after an attack of influenza has subsided, and it has been suggested that in this manner the interval between one epidemic and another may be bridged over. The question whether such cases may come under the category of germ carriers offers an interesting field for further research. The points referred to by Dr. THURSFIELD are of importance and his remarks are well worthy of attention. Some of his conclusions can only be confirmed by further investigation should epidemics of typical influenza again break out, but other subjects to which he draws attention, such as the pathogenic organism of whooping-cough in the form of Bordet's bacillus, can be more readily inquired into. It would also be desirable that more positive information should be acquired in regard to the bacteriology of the frequent epidemics of so-called influenza, which are constantly occurring, but which have probably a different origin.

ON Wednesday last His Majesty the King conferred the honour of knighthood upon Dr. J. Kingston Fowler and Mr. A. Pearce Gould, investing them with the insignia of a Knight Commander of the Royal Victorian Order.

THE WORKMEN'S COMPENSATION ACT. — At Barnstaple (Devon) county court last week, before Judge Beresford and Mr. A. W. Lemarchand, sitting as medical assessor, the widow of a local slaughterman claimed compensation from a butcher for the loss of her husband, who died last May from anthrax. For the defence it was contended that the case did not come under the Act, as the deceased was not a workman under contract for service. He only worked two days a week for defendant and employed another man. The killing of the cattle took place at a slaughterhouse provided by the railway company and for which no charge was made, and the deceased provided his own tools. These facts, the counsel contended, were contrary to the ordinary relationship that existed between the master and servant. His honour was of opinion that the only question was whether deceased contracted anthrax during the time he was in the employ of the butcher, and as that was proved the widow was entitled to recover, and he awarded her £150

Annotations.

"Ne quid nimis."

THE DEATH OF PRINCE FRANCIS OF TECK.

THE death of H.S.H. Prince Francis of Teck removes from our midst one who as a man was deservedly popular among those privileged to be his friends, and who was indefatigable in the employment on behalf of others of the influence associated with his high position In the interest which he evinced in charitable work during the recent years of his life he followed worthily in the steps of many of his family, and with the practical good sense which is one of their leading characteristics, he knew how to concentrate his energies in one or two directions at a time so as to secure the fullest possible effect for the assistance which he proffered. Thus, having sympathy with manly training and with men in the making, he left a name that will long be remembered by many boys now growing into manhood in Hoxton; and thus also in espousing the cause of the sick and injured poor of London he associated his name and influence with the effort to relieve the needs of the Middlesex Hospital, and devoted time and personal effort to the substantial improvement of its financial position. For such work as that to which we have referred he was singularly fitted by personal gifts of disposition and manner, by a genial bearing towards his fellow men, and a simple courtesy free from all suspicion of effort or affectation. In that which he did on behalf of the Middlesex Hospital he had achieved marked success; the further endeavours upon which he was bent would have had the same fortunate issue, and we express our deep regret that on the threshold of middle age his career of usefulness should be cut short. Prince Francis had been suffering for some time from an affection of the nose. After his return from Marienbad, where it had been recognised as an empyema of the antrum, an operation was performed and the cavity was drained. On Sept. 28th the Prince went to Balmoral, and soon after arriving there he suffered from occasional paroxysms of cough with expectoration. He kept quiet and was not at any time exposed to chill. On Oct. 4th he was suddenly seized with severe pain in the right side; his temperature rose to 102·5° F., and a friction sound was detected at the right base. The signs of effusion gradually developed, and he was unable to travel south when the Court left on Monday, Oct. 10th. On the following day a consultation was held, and it was decided that he probably had an empyema, for which an operation would be necessary. The pneumococcus had previously been found in the expectoration. As there were then no urgent symptoms, and as his general condition had somewhat improved, it was decided, after a further consultation, that he should travel to London on Oct. 13th and proceed at once to the nursing home. He was seen on arrival, and at the examination the physical signs which had been reported were found. On the same afternoon, Oct. 14th, an exploratory puncture revealed the presence of a condition requiring early operation—this was performed the same evening. The fluid removed contained a pure culture of pneumococcus. After the removal of the pressure upon the lung by the opening and draining of the pleura, examination showed that an excavation existed in the right upper lobe and that the pneumococcal infection had spread from the lung to the pleura. The temperature fell to normal on the morning of Oct. 15th, but there were no other signs of improvement. The temperature rose again for three days, and then for four days it was normal. The toxic effects upon the nervous

system were very pronounced throughout the illness and in the early hours of Saturday, Oct. 22nd, the heart began to fail, the patient passing away at 11 A.M.

INCARCERATION FOR LIFE AND ITS CONSEQUENCES.

JUST 12 years ago the Italian anarchist Luccheni was sentenced to life-long imprisonment at Geneva for the murder of the Empress of Austria as she was entering a steamboat on that lake. It was said at the time that he selected his opportunity so as to commit the crime in a canton where the death penalty had been abolished. However that may be, he was sentenced to solitary confinement within the prison of Evechê, and for a time seemed to reconcile himself to his fate with a cynicism which might pass for equanimity. But in his case, as in well-nigh every other of the kind, symptoms of mental alienation betrayed themselves, mainly in explosions of anger accompanied with violence, in one of which he nearly killed the director of the prison, M. Perrin. Since then, the surveillance imposed on him having been made more stringent, the isolation, and the morbid brooding, intellectual and moral, which it encourages, began to tell, and he was closely watched as an inmate whose next outburst might be homicidal or suicidal, or both. Set to work at bookbinding, an occupation which seemed to soothe him, he had his work prescribed for him a few days ago by the head of that *métier*, but in a sudden access of discontent, passing into rage, his language and demeanour became so aggressive that he was consigned to his cell to await "discipline." No sooner had the door closed on him than his fury became maniacal. He seized every utensil within reach and hurled it through the window, endangering the wayfarers in the street below with the débris, and attracting a crowd to the spot. This brought the new director, M. Ferres, accompanied by six able-bodied keepers, to his cell, where, after a violent struggle, he was pinioned and placed in an underground place of detention. Such explosions, occurring so frequently in the case of criminals expiating the life-penalty in seclusion, are now regarded in Italy as the inevitable outcome of the treatment, and, issuing as they do in chronic mania and finally in dementia, are already reviving discussion as to the justice, or the wisdom, of exposing the felon to such a fate. A few months ago Passanante, who attempted King Humbert's life in 1878 when on a royal progress through Naples, died, prematurely, a decrepit imbecile in the asylum for the criminal insane at Montelupo in Tuscany, and the miserable spectacle he presented for years before sufficed to awake misgivings in Italian medico-legal circles as to whether the gallows or the guillotine might not appropriately resume its function, after more than a generation's experience of the futility of solitary imprisonment for life as a deterrent and of its cruelty as a penalty. Reference was made in the course of discussion to the classical debate on capital punishment in our House of Commons in the late "sixties" of last century, when John Stuart Mill powerfully advocated its retention on the ground of humanity, and another authority, Sir George Bowyer, clinched that thinker's argument by facts drawn from his experience of Italy as to its deterrent value. Since then M. Briand, the French Premier, has seen the wisdom of a return to the guillotine, after the non-success of its quasi-humanitarian substitute, "burial alive within four walls," in checking the rising, spreading "tide of bloodshed" among the civil population. A similar revulsion of feeling and conviction is apparent beyond the French frontier, and the suicide of Bresci at San Stefano, the tragic "life-in-death" of Passanante at Montelupo, and now the maniacal outbursts and terrible fate of Luccheni at Evechê, will go far to bring about the revival of a punitive method rescinded on grounds of sentiment rather than of legislative wisdom. Luccheni committed suicide in the subterranean cell to which he had been relegated a few hours before. His violence in demeanour and language had so far calmed down that his keepers allowed a brief interval to elapse before renewing their watch over him. He had indeed been singing gaily after being removed to the strong room, and it was with something more than surprise that at 6 P.M. on the occasion of the evening visit he was found dead, suspended by his leathern waist-belt from the iron grating of his window. Post-mortem examination is expected to yield results, particularly as to the cranium and its contents, which will give peculiar interest to the medico-psychological report on the man and his history. Megalomania, or the symptoms which lead up to it, were, in the opinion of more than one specialist, in evidence not only at the trial in November, 1898, but also during the years of subsequent detention, in so much that his repeated outbursts of rage, invariably coincident with "wounded *amour propre*," came to be looked for as inevitable on every occasion when the discipline or the work connected with it was not to his taste or liking. According to some who have been interested, psychologically, in his case, his intense love of notoriety, his eager craving to "get talked about"—conspicuous throughout his whole career in society or when excluded from it—explains the act of self-murder which makes his fellow prisoners congratulate themselves (according to the Italian journals) on having been thus relieved of an eminently disagreeable, not to say dangerous, companion.

THE PHYSIOLOGICAL STANDARDISATION OF CARDIAC DEPRESSANTS.

IN the *American Journal of Pharmacy* for October Dr. Thomas S. Githens and Mr. Charles E. Vanderkleed contribute an account of their work on the physiological standardisation of cardiac stimulants and depressants. Of the former class they worked on apocynum, convallaria, digitalis, squill, and strophanthus. So much has been published on the standardisation of these drugs that it need only be mentioned that the investigation throws light on the amounts required to produce certain effects, a phase of the subject which has received but little attention. The group of cardiac depressants includes aconite, gelsemium, and veratrum, and nearly related to them is another group, including physostigma, lobelia, and conium, which act chiefly on the voluntary muscles and kill by respiratory rather than cardiac failure. The investigation showed that with all these drugs toxic symptoms are manifested even under the influence of comparatively small doses, whereas with drugs of the digitalis series a dose slightly less than the toxic dose causes only slight toxic phenomena. On this account the dosage of the cardiac depressants is not as sharply defined as that of the cardiac stimulants, and in making a standard for these drugs it is necessary to fix an arbitrary period of time within which the animal should die, the period suggested being three hours. The heart depressants are characterised further by the production of evident effects when given in sub-lethal doses. Thus, aconite causes violent retching, gelsemium is likely to produce convulsions followed by paralysis, while veratrum stands between them in regard to these phenomena. The drugs which cause death by failure of the respiration—viz., conium, physostigma, and lobelia—can all be standardised by chemical means, as their activity is largely dependent upon their alkaloidal content. But in the case of aconite, gelsemium, and veratrum, although their activity depends upon the presence of certain alkaloids, their physiological activity is not necessarily proportional to their alkaloidal strength. The physiological activity of aconite is mainly

due to aconitine, but this alkaloid is liable to split off a methyl or a benzoyl group during the preparation of galenicals, whereby the aconitine becomes inactive although capable of responding to the chemical reactions of an alkaloid. This is particularly likely to occur when the preparations of aconite are kept for a long time. Veratrum contains an active alkaloid, veratrine, together with several inactive alkaloids, and similarly gelsemium contains gelsemine and gelseminine, of which the former has practically no effect upon mammals. In the case of these drugs, therefore, it is necessary to standardise by physiological means, in order to avoid the misleading results that may follow from a chemical assay. The method adopted consists in determining the amount of the preparations of these drugs that proves fatal to guinea-pig within three hours. It was noticed in the case of gelsemium that the tincture was much more toxic than the fluid extract, on the basis of equivalent amounts of total alkaloid, while in the case of aconite just the opposite result was obtained. It seems probable that the prolonged percolation which occurs in the preparation of the tincture dissolves a higher proportion of the intensely active gelseminine. In spite of the diverse chemical characters of the alkaloids of veratrum, it was found that the activity of its preparations agreed quite closely with the percentage of alkaloids present. It is the intention of these investigators to continue the comparison of the results of physiological and chemical methods of assaying drugs, including a series of comparisons with conium, physostigma, and lobelia.

SANITARY CONDITIONS AND INFANT MORTALITY IN LANCASHIRE TOWNS.

THE Registrar-General's list of large towns dealt with in his weekly returns includes 15 towns in the county of Lancaster, with an aggregate population estimated to the middle of this year at very nearly 3,000,000. The mean reported annual rate of mortality in these Lancashire towns during the past summer quarter was equal to 14·5 per 1000. It may be well to compare this death-rate with the rate of mortality in the county of London during the same period, which did not exceed 11·0 per 1000. Thus the rate of mortality from all causes in the Lancashire towns exceeded that which prevailed in the whole county of London, with a distinctly urban population little short of 5,000,000, by more than 30 per cent. One of the main causes of the excess of mortality last quarter in the Lancashire towns was the greater fatality of diarrhœa, principally infantile, which caused an annual rate of 1·48 per 1000, nearly three times as high as the rate from the same cause in London, which was but 0·55 per 1000. Fatal infantile diarrhœa is now recognised as to a large extent the result of neglect and ignorance in the treatment of infants. It seems improbable that the proportion of the population suffering from actual poverty is smaller in London than in the aggregate of the Lancashire towns, and therefore it is difficult to explain this marked excess of the death-rate in the Lancashire towns otherwise than as the result of less efficient sanitary administration than obtains in London. It is indeed impossible to doubt that the excess of mortality in the Lancashire towns, compared with London, implies a lower standard of sanitary condition, and such a conclusion is supported by comparison of the statistics of infant mortality during the past summer in the Lancashire towns and in London, the results of which comparison are not affected by the probable over-estimate of the present population of many of our largest towns. During last quarter the deaths of infants under one year of age in London did not exceed 95 per 1000 of the registered births, against 129 and 109 in the corresponding periods of 1908 and 1909. In the 15 Lancashire towns, however, the mean rate of infant mortality last quarter was equal to 143 per 1000 births, showing an excess of more than 50 per cent. upon the London rate; in the summer quarters of 1908 and 1909 the mean rate of infant mortality in these 15 towns was 171 and 134 per 1000 respectively. In these Lancashire towns the rate of infant mortality last quarter ranged from 96 in Barrow-in-Furness, 98 in Rochdale, 103 in Warrington, and 113 in Oldham, to 157 in Bury, 158 in Wigan, 161 in Bootle, 179 in Burnley, and 209 in Preston; thus in each of the 15 Lancashire towns was the rate of infant mortality last quarter higher than in London. It is specially noteworthy that whereas, speaking generally, the rate of infant mortality last quarter in our largest towns showed a distinct decline from the rate recorded in the same period of last year, the rate was actually higher in 11 of the 15 Lancashire towns, and only showed a decline in Liverpool, Wigan, Bolton, and Bury. These facts call for the serious attention of the urban sanitary authorities in Lancashire, and of the ratepayers by whom those authorities are appointed. The much-needed decrease in the loss of life and health of infants in our urban populations will not become general until a rate of infant mortality exceeding 100 per 1000 births is fully recognised as discreditable to the community in which it continues to prevail.

VISUAL DISTURBANCES OF PSYCHICAL ORIGIN.

APART from the familiar diplopia and polyopia of hysteria there is a little known though well-defined disturbance of vision of central origin to which the term "dysmegalopsia" has been applied. The word signifies defective visual recognition of the real size of objects, which are usually thought to be either larger or smaller than their normal dimensions—macropsia and micropsia are the terms used to denote these changes. Micropsia may occur from paralysis of accommodation, but ordinarily it is due to some lesion in the visual centres, and similarly with macropsia. In fact, two types of dysmegalopsia have been distinguished by Fischer: cortical dysmegalopsia, a condition that follows anatomo-physiological laws, and transcortical dysmegalopsia, which follows psychical laws. The nature of the cortical lesion has not been determined, and indeed the literature on the subject is very meagre; yet the cases that have been described, by reason of the definiteness of the symptomatology, are of the greatest interest. A new instance of the condition, furnishing apparently unique features, is recorded by Dr. Liebscher of the Irrenanstalt in Brünn in the *Monatsschrift für Psychiatrie und Neurologie* for August. His patient was an arterio-sclerotic of 62 with typical involution melancholia, including auditory hallucinations. He complained that everything he looked at was shaking or vibrating, especially if his left eye only was used. Frequently micropsia was observed. Objects appeared to the patient smaller than they really were. Frequently, too, the upper parts of letters of the alphabet placed vertically seemed to him to be "broken" and to be bent to the left. A remarkable feature of the visual defects was that sometimes the left side of any object appeared larger than the right; thus the examiner's face seemed to be swollen on the left side; a square seemed to be an irregular four-angled figure; a circle was drawn out into an ellipse on the left. The patient was unable to indicate correctly the length of objects under certain conditions; when two matches were placed parallel to each other he imagined that one was longer. A curious fact was that the process of vision was associated with a most unpleasant feeling; people he looked at seemed "to be sticking in his eyes," especially if they came near. Repeated ophthalmological examination failed to discover any defect whatever in media, eye movements, optic discs, or retinæ. There was not the

slightest trace of nystagmus, and the patient's eyes were fixed easily and instantaneously on any object presented to him, yet it appeared to him to be shaking or vibrating. The explanation of this interesting phenomenon is thus given by the writer. It is well known that in nystagmus the patient commonly declares the object to be still, although his eyes are moving; in the present case the object seems to be moving although the eyes are still—in a sense the converse of nystagmus. In the case of nystagmus the patient has learned to combine the visual impressions obtained from the stimulation of different parts of the retina into one, whereas it is clear that in the writer's case only one part of the retina is being stimulated, yet the patient gets the impression of a moving picture. The presumption is that hypersensitiveness of the retina leads to its becoming momentarily functionless as the result of what is for that retina too strong a light stimulus; it recovers immediately, but again becomes fatigued by the continuance of the stimulus; thus, as long as the patient gazes fixedly at an object it appears to be "coming and going"—in other words, to be vibrating. In this connexion the phenomenon of star-twinkling occurs to the mind. The hyperæsthesia of the retina is linked to the unpleasant affective tone accompanying the process of vision; the patient complained bitterly if people came too near him. The explanation of the other disturbances is not simple, and would take us too far into the question of spatial projection and false localisation in space.

DOES A BLACK SKIN PROTECT AGAINST MALARIA?

IN a recent issue of a daily paper we find it stated on the anonymous authority of a "well-known London doctor" that blackness of the skin, however produced, protects against malaria, and it is said that "if you are going to a country where malaria is rife stain yourself all over with walnut juice, or black yourself with burnt cork, and you will be less liable to catch the disease." And the explanation is given that the browning of the skin prevents the actinic rays of sunlight penetrating the skin, and so helping the malarial parasite to mature; and therefore we are told "if white men had artificially coloured skins, or even wore black underclothing, they would be in the same position as the natives—protected to a certain extent against the malarial parasite maturing." We should be interested to know on what facts the "well-known London doctor" bases his statement. It is true that, on the whole, the coloured races suffer less severely from malaria than the white races, but we are not aware of any evidence which even suggests that this is due to the colour of the skin. Of course, it is possible that the staining of the skin with walnut juice or burnt cork may have a deterrent effect on the mosquito and so prevent the inoculation of the parasite, but this, we should imagine, was more than doubtful. The immunity of the savage races is probably the result of evolution by selection.

ACUTE PANCREATITIS.

ACUTE pancreatitis is still an obscure disease, and it is generally impossible to diagnose its existence from other acute abdominal conditions until the abdomen has been opened, and even when this has been done the diagnosis is often far from easy. The etiology of the condition is still puzzling. Medical treatment is very unsatisfactory, and though many operations have been performed very few recoveries have been recorded. As to the results of surgical treatment it is hardly safe to base an opinion merely on the recorded cases, for successes are much more likely to find their way into print than are failures. In 1908 Mr. Mayo Robson was able to collect 59 cases in which an operation had been performed, and of these 23 recovered, but these statistics certainly do not represent the true proportion of successes. In the present issue of THE LANCET is recorded a case of acute pancreatitis under the care of Mr. A. E. Barker, in which two operations were followed by recovery. The diagnosis was made during the operation and it was based chiefly on the discovery of patches of fat necrosis in the great omentum. At the second operation extensive fat necrosis was found also in the retroperitoneal tissue, and a large collection of inflammatory fluid was evacuated from the lesser sac. Complete recovery followed, and we congratulate Mr. Barker on the issue of his very interesting and successful case.

THE DIAGNOSIS OF TWIN PREGNANCY: A NEW SIGN.

THE recognition of a multiple pregnancy is often a matter of some difficulty, and although the more frequent practice of abdominal palpation renders the possibility of its being overlooked less likely, yet even at the present day, according to most authorities, it is not recognised before the birth of the first child in more than 50 per cent. of the cases. Capuron, after having been a teacher of obstetrics for 50 years, one day said to Pajot, "There is but one way by which you may know a twin pregnancy; if you have seen one fœtus born and find that there is another in the uterus you may be sure there are twins." We are not nowadays quite so unable to prophesy, but in some cases the certain recognition of the presence of more than one child in utero may be almost impossible. Quite recently, indeed, at a large London lying-in hospital a case was operated upon by Cæsarean section for contraction of the pelvis, and only when the uterus was opened was the presence of a second child discovered. Such mistakes should be rarer and rarer as the practice of abdominal palpation becomes more prevalent and greater skill is acquired in this method of examination. There is no lack of signs which may indicate the presence of a twin fœtation; it is their certain recognition which is so often difficult. The finding of two bags of membranes, the existence of a furrow between the two fœtuses, the presence of too many small or large fœtal parts, the large size of the abdomen, the apparently excessive length of the fœtal axis, and the auscultation of two hearts beating at different rates, while all valuable diagnostic aids, may not be present or their significance may be misunderstood. The diagnosis of a twin pregnancy before labour sets in is a matter of no little importance to the mother and cannot fail to bring credit to the medical attendant. In spite of this, in a very large percentage of the cases the condition is overlooked, and any addition to our knowledge therefore which will prevent such mistakes in future is to be welcomed. Dr. C. J. Gauss believes that he has discovered a sign of considerable importance in this connexion, and in a paper recently published in the *Zentralblatt für Gynäkologie*[1] lays stress upon the presence of an anterior parietal presentation in the case of the first of twins when it is presenting by the head, as a point of considerable diagnostic value. As a result of the small size of the head and of the leverage action produced by the second child upon the body of the first, due to the want of space in utero, he maintains that this presentation is to be met with in so large a proportion of twin pregnancies as to render it of great value. In several cases where the diagnosis had proved impossible by the abdomen the presence of such a presentation has led him to the successful recognition of a twin pregnancy. An anterior parietal presentation, corresponding as it does to a marked degree of Naegele's obliquity

[1] Zentralblatt für Gynäkologie, No. 40, 1910, p. 1281.

and associated with abnormally easy recognition of the anterior ear, occurs so infrequently in a normal pelvis as to render its occurrence in such conditions most suggestive of a twin pregnancy. This sign has the drawback that it is not available until labour has commenced, and it is, of course, only present when the first child presents by the head, but such a presentation occurs in some 70 to 80 per cent. of all twin pregnancies. It should therefore, if further observations tend to show that it is as constant an occurrence as Dr. Gauss supposes, prove of considerable value in helping to make a diagnosis in doubtful cases of multiple pregnancy. The question is well worth further investigation, and in our opinion this physical sign has only one drawback—namely, it involves for its recognition the necessity for making a vaginal examination, whereas most of the other signs of multiple pregnancy can be recognised when present before the onset of labour and by examination of the abdomen only.

GARDEN CITIES AND TOWN PLANNING ASSOCIATION.

IN giving prominence to the appeal of this association for funds in order to establish its work upon a firm financial footing, we wish again to express our approval of the objects which it seeks to accomplish and the means adopted. The operation of the new Housing and Town Planning Act calls for serious and zealous attention, and this association is largely responsible for the great practical interest now being taken in garden city and garden suburb schemes. But useful and praiseworthy as are the efforts to create garden suburbs and garden villages, it would be a grievous mistake to treat them all alike as entirely satisfactory compensations for the detrimental conditions as to health and physique under which the dwellers in large manufacturing towns suffer who are divorced from nature. There are garden suburbs and garden suburbs. The development of the true garden city scheme depends upon the decentralisation of industry; this scheme affords the artizan the opportunity of combining the advantages of town and country life, and as the welfare of our race in the future depends upon a satisfactory solution of the difficulty of securing healthy and happy conditions of life for the industrial worker and his family, it is sincerely to be hoped that the Garden Cities and Town Planning Association, 32, Birkbeck Bank Chambers, W.C., the only society which advocates and organises the control of a separate town or city with a fixed relation to surrounding agricultural land, will receive that measure of support which its treasurer, Mr. Francis E. Fremantle, claims from all those who feel the importance of the subject in its physical and moral aspects.

SPEECH IN CASES OF CUT-THROAT.

IN THE LANCET of May 22nd, 1909, p. 1501, a letter appeared detailing a case of cut-throat in which the question arose whether it was possible for a person whose larynx had been divided above the vocal cords to speak so as to be understood. We then, in commenting on this case, expressed the opinion that the speech of such a patient might be quite comprehensible. In the *China Medical Journal* of May this year Dr. E. M. Merrins of Wuchang has reported a case in which a man attempted to kill himself by cutting his throat. The knife passed completely through the larynx just above the true vocal cords. An attempt was made the next day to suture the severed thyroid cartilage, but the patient tore the wound open and no further operative treatment was adopted. Dr. Merrins tried to see what power of speech the man possessed. The attempt was made about a fortnight after the injury, but the wound still gaped wide above the vocal cords. With the wound exposed he was able to speak so as to be easily understood, but it was a weak whisper. When the throat was bandaged he was able to speak much more distinctly, and when the neck was flexed so as to close the wound he was able to speak clearly and well. The question of the possibility of comprehensible speech after a severe cut-throat wound may easily be of great medico-legal importance, and we believe that all surgeons who have had much experience of cut-throats will agree with the opinion we expressed last year, that comprehensible speech is perfectly possible, even though the larynx is divided immediately above the vocal cords.

DEATH AFTER THE REMOVAL OF TONSILS AND ADENOID GROWTHS.

IN the *American Journal of the Medical Sciences* for September Professor Francis R. Packard has reported a remarkable case of death following the removal of the tonsils and of adenoid growths. He finds that a mistaken impression prevails among general practitioners that the operation is comparatively safe. He regards the operation as so serious that he thinks it ought to be performed in hospital instead of at the patient's home. Ether he believes to be the safest anæsthetic, and he has never known a case of death which could be attributed to it, though he has personal knowledge of three cases in which death occurred after the administration of chloroform, in which nothing else had been done which could have been fatal. Except in cases where he is certain that his directions will be rigidly carried out regarding preparation for operation, he requires his patients to enter hospital the day before operation, and after operation he keeps them there for at least 24 hours longer if there is any elevation of temperature or other important symptom. The following is the fatal case which Dr. Packard uses as the test for his remarks. A girl, aged three years, was brought to him with the history that she had been perfectly healthy until a year ago. During the past two months she had suffered from frequent coughs and colds, and constantly slept with her mouth open. She had become languid and had little appetite. On examination she was apparently healthy except for a somewhat sallow complexion. This her mother attributed to frequent bilious attacks. The tonsils were rather large, with wide-open crypts, some of which contained cheesy material. Digital examination showed a large soft mass of adenoid tissue blocking the naso-pharynx. The heart and lungs were normal. At 1 P.M. on Sept. 30th, 1909, she was anæsthetised for operation. The anæsthetisation was started with ethyl chloride and followed by ether given by the drop method until she was unconscious. Then the ether was administered by a vapourising apparatus through a metal mouth-piece. There was much mucus in the nose and throat during the operation. The total amount of ether used was three ounces. The tonsils were loosened on both sides by blunt dissection. The left was removed by digital manipulation and dissection with scissors. The right was removed with a small guillotine after freeing it from the surrounding tissues. The adenoids were then removed with a forceps. Considerable bleeding followed, but at the conclusion of the operation there was no active bleeding. The anæsthetisation lasted 14 minutes and the child was on the table 10 minutes. About 30 minutes after the operation, when she was recovering from the anæsthesia, her pulse was good. At 4.30 P.M. her throat was examined and no bleeding could be seen. At 5.30 the nurse noticed that her colour was not good, but there was no evidence of bleeding. The pulse was good and she seemed in fair condition. At 6.30 the temperature had risen to 100° F., the respirations to 36, and the pulse to 156. A tongue depressor was inserted to see if there was any bleeding, and this caused her to vomit. Something appeared to occlude her larynx, and tracheotomy was performed, but no cause of obstruction could be found, and the child died

about 7 P.M. A necropsy was not allowed. Professor Packard regards it as practically certain that death was due to the status lymphaticus.

THE MYSTERIOUS DISEASE IN SUFFOLK.

A COMMUNIQUÉ has been received by the press from the Local Government Board dealing with four deaths which occurred over a month ago at Freston in Suffolk. As a result, the fact has now become public that there were grounds for believing these deaths to have been due to plague, the pneumonic symptoms, which were puzzling, being capable of explanation in this way. We were glad to observe that the occurrence of these deaths caused little comment at the time, as undoubtedly considerable public apprehension, and much of it of a needless kind, would have been aroused by the belief that plague had established a foothold in this country. Nothing of the sort has happened. A bacteriological examination was made in regard to material taken from two of the patients, and although opinions were not unanimous, it certainly seemed possible that the pneumonia had been due to plague. Subsequently rats and hares found dead or dying in the same locality have been examined on behalf of the Local Government Board, and of these three rats and one hare have been found to be infected with plague. In consequence the rural district council has held conferences with Dr. H. T. Bulstrode, of the Local Government Board, and every sort of systematic effort to destroy rats and remove accumulations of refuse is being undertaken in the most thorough manner. Having regard to this activity on the part of the authorities, and to the fact that no cases of human illness suspicious of plague have occurred since Sept. 26th, we feel justified in saying that there need be no serious anxiety about the outbreak.

THE CONSERVATIVE SURGERY OF THE EXTREMITIES.

IN the last Archives of the Middlesex Hospital Sir Henry Morris has emphasised the value of conservative treatment in injury and disease of the extremities. In cases of severe injury to the hand he has refused to amputate when sent for to do so, and practised conservative surgery with gratifying results. His rule is not to amputate through the forearm for an injury of the hand because of extensive laceration of the skin, crushing of the fingers, and fractures of the phalanges if the main vessels and nerves at the wrist are not damaged. He simply trims away skin or parts of digits that are hopelessly beyond recovery, and for the rest cleans the part thoroughly and wraps the whole hand in lint soaked in carbolised oil. Afterwards, instead of removing the lint he daily re-saturates it by pouring on fresh carbolised oil. In this way he has allowed the same lint to remain covering the injured part for 8, 10, or 14 days or longer. When the lint is taken off it will be evident what tissues will recover and what will have to be removed, either by nature alone or assisted by surgery. To save even only one digit will generally provide a more useful extremity than a hook or any form of artificial hand short of the most elaborate and costly. Occasionally there may be disappointment, and the removal of a cumbrous bone or a stiff and useless finger may be necessary. But, as a rule, the surgeon will be gratified by the patient returning after some time, perhaps years, to express his gratitude and show with pride the use he can make of his partial and unshapely hand. It is, of course, important to save any part, even the merest stump, of the thumb. If the muscles which oppose the thumb to the digits be not entirely damaged, and especially if any part of any one of the fingers has been spared and its flexor and extensor tendons still have some action, it is wonderful to what varied and great use this remnant of a hand can be put. Sir Henry Morris was one day accosted by a railway porter who showed him with great thankfulness a hand consisting of a broad, strong palm and a stunted thumb and little finger. Many years before he had been sent for to amputate the forearm, but had only trimmed off some skin and fingers. The man had been able to do all his work satisfactorily. In operations on the extremities for disease, such as caries, necrosis, and tumours, Sir Henry Morris also recommends conservatism. A young woman came under his care in 1876 with myeloid or endosteal sarcoma of the lower end of the radius. Instead of amputating he excised the lower ends of the radius and ulna, and left the patient with a very useful hand. There was never any recurrence, and she brought up a large family and used her hand well for housework. Loss of more or less of the foot is not so important as a corresponding loss of the hand, but Sir Henry Morris advises here conservatism also in injury and disease of the lower extremities. Though the movements of the hallux are much more restricted than those of the thumb, the advantages of a foot as entire as possible, both for security in standing and for spring and elasticity in walking, are considerable.

AT the Surgical Section of the Royal Society of Medicine on Nov. 8th a debate will be held on "The Treatment of Fractures in the Neighbourhood of the Joints." The discussion will be opened at 15, Cavendish-square, W., at 5.30 P.M., by Mr. Robert Jones (Liverpool). Fellows and members of the section who wish to take part in the debate are requested to send their names to the senior honorary secretary of the section, Mr. Jonathan Hutchinson, 1, Park-crescent, London, W.

THE TREATMENT OF SYPHILIS WITH EHRLICH'S DIOXYDIAMIDOARSENOBENZOL.

BY SANITÄTSRAT DR. WILHELM WECHSELMANN,

PHYSICIAN IN CHARGE OF THE DERMATOLOGICAL DEPARTMENT OF THE RUDOLF VIRCHOW HOSPITAL IN BERLIN.

(*Translated for* THE LANCET.)

Professor Paul Ehrlich has for several years been engaged in systematic attempts to discover chemical substances which might be serviceable in the treatment of certain infectious diseases—namely, those in which the natural recuperative powers of the system, assisted by the formation of specific antibodies, are unable to bring about a restoration of health. The new system of treatment has been called chemotherapy, and in the preliminary investigations hundreds of chemical compounds were prepared and tested on infected animals without satisfactory results being obtained. All of these earlier preparations acted destructively on the antibodies; while attacking the protoplasm of the parasites they caused organic lesions in the animals. It therefore became necessary to discover substances capable of destroying the parasites, or, which comes to the same thing therapeutically, capable of hindering their propagation—a mode of action which Ehrlich has called sterilisatio magna—and at the same time not injurious to the patient, at least in the doses required for the destruction of the parasites. Among hundreds of such preparations it was found that dioxydiamidoarsenobenzol in its action on spirillosis in animals was the one which best fulfilled these conditions.

Dr. Hata, to whom Professor Ehrlich entrusted these experiments, found that after the remedy was taken into the system the spirilla of fowl spirillosis and of relapsing fever disappeared immediately; in observations on rabbits it was seen that primary ulcers swarming with spirochætæ healed rapidly, and in 24 hours the animals were free from spirochætæ. With the object of bringing the remedy into use for the treatment of patients

Alt made many trials of it on paralytics. These observations showed that the substance, which was in every instance tolerated by monkeys in doses up to 0·15 gramme per kilogramme of the animal's weight, had no poisonous action on the human subject in doses varying from 0·3 to 0·5 gramme. Iversen then reported gratifying results in relapsing fever, and Schreiber observed that the symptoms of syphilis very soon disappeared under treatment with this preparation. In March of the present year Professor Ehrlich sent me a sample of it for further trial. I soon recognised that in some instances recovery was possible in the case of suckling infants infected with syphilis and so invaded with spirochætæ that a fatal issue seemed inevitable; necropsy of those which perished revealed no evidence of arsenical action on the internal organs. Several observers, such as Truffi, Pazini, and especially my assistant Dr. Siesskind, have proved that the spirochætæ disappear from papules and primary affections, in some cases after 24 hours, while in other cases they still exist after days. Iversen has lately made similar observations in preparations of glands.

At the present time there is a great distrust of new arsenical preparations. It was therefore necessary to prove that the new remedy was far superior to others of a like kind, and I began by trying it on incurable cases. In the year 1906 a male patient, aged 18 years, came under my care on account of a malignant form of syphilis which did not yield to injections of calomel and Zittmann's treatment. He was next attended by Professor Buschke, and in October, 1906, he had a syphilide of a cockade pattern on the body, ulcerative invasion of the fauces, thickenings of the bones, and more particularly on the glans and on the penis eight deep ulcers as large as peas. Inunction, sajodin, injections of calomel, arsenic, steam baths, sulphur baths, and iodide of potassium were employed, but with so little success that in February, 1907, the patient's temperature continued for more than a week at 39° C. and the invasion of the fauces progressed. Inunction was resumed in March. On April 28th the eruptions had healed up in some places, partly by granulation, but those on the head were unchanged; the uvula had disappeared. Zittmann's treatment and iodipin were employed from April 28th to May 7th. Injections of corrosive sublimate were given on May 23rd and atoxyl subsequently, the latter being limited to three injections of 0·2 gramme; two courses of inunction were at the same time resolved on. Having refused further treatment the patient was discharged on July 6th. The ulcers of the fauces had in great part healed up with the formation of immense cicatrices, and some of the syphilide was also healed, but a patch about the size of a German mark (a coin similar to an English shilling) remained on the gluteal region. He very soon had to seek admission to the Charité Hospital, where he was treated with ten injections of atoxyl and six injections of calomel. In November he entered the Lichtenberg Sanatorium, where he had 32 inunctions, iodide of potassium, and sajodin. In April, 1908, destructive ulceration of the penis made its appearance. On May 20th he returned to the Virchow Hospital under Professor Buschke, and was treated with injections of arsenic, injections of calomel, iodised casein, iodide of potassium, and inunction. On August 31st he was discharged at his own request. In November and December of the same year he was treated in the Charité with calomel. From February to June, 1909, he had treatment with inunction in Lichtenberg. In August, 1909, he was again in the Virchow Hospital under Professor Buschke. From October to December he was treated in Lichtenberg with inunction and calomel. From January to March, 1910, he had the Josef treatment with inunction and iodide of potassium. It is therefore certain that every possible form of treatment had been employed without benefit.

On April 2nd, 1910, the patient was admitted into my wards. The miserable man then had on the inner side of the upper part of the thigh a bluish-red patch, partly cicatricial and partly ulcerating, about the size of the palm of a small hand; he had also on the crown of his head a similar patch measuring 2 centimetres by 6 centimetres diagonally with slimy serpiginous ulcers; several bones showed thickening, and there was ulceration in the throat. On the penis there was open slimy ulceration of the skin, the glans, and the ventral surface of the penis down to the fascia. He said that since the commencement of the disease in 1906 the penis had been superficially sound for only a few days. On April 13th he was given 0·25 gramme of Ehrlich's new remedy No. 606, whereupon rapid recovery began. After about four weeks the skin of the penis was lost once more (*zerfiel noch einmal*) and at the same time there was a thickening at the lower end of the right radius. On a second injection of 0·45 gramme being given on June 27th this healed in two days and the penis was almost completely covered with new skin after a third injection on August 8th. The patient was now quite recovered and fit for work.

A very similar history is recorded in the following case of incurable lues:

CASE 2.—A working girl, 25 years of age, was, in July, 1905, affected with lues and had received several inunctions and injections in the Charité. For years she had not been able to hold her fæces. On May 5th, 1909, she was received in my wards of the Virchow Hospital in very poor condition. She had a number of foul ulcers, each about two-thirds of an inch deep and 5 inches long, arcuate in form, mounting from the posterior commissure high upon the nates. There could be seen a few evidences of healing in the form of atrophic scars on the margin of which the progressing ulcers were located. The rectum was very much infiltrated, and showed two strictures which hardly admitted a finger, and upon which deep ulcerations were visible. Wassermann reaction, + + +; weight, 45 kilogrammes. She received five calomel injections, but they had to be given up on account of diarrhœa. Potassium iodide was continually given. From May 12th she received inunctions; the incontinence was somewhat improved; weight, 40 kilogrammes. The ulcers received treatment with the Roentgen rays. The patient left the hospital on July 3rd, although her condition was hardly improved, but returned after four days' absence. She then received calomel injections and local treatment with calomel, as she could not very well stand metallic mercury. On May 4th the patient received 0·3 gramme of Ehrlich's 606. After a few days a cleaning up and healing of the large abscesses commenced, and on May 18th the ulcers were entirely healed, with the exception of a few very small places on the right side. At the same time the condition of the rectum improved, and the rectoscopic examination showed only a simple erosion on the stricture. The general condition was very much improved; the weight remained at 40 kilogrammes. After a second injection the small erosions of the right side were almost entirely healed.

CASE 3.—A man, 23 years of age, showed seven months ago the first effects of syphilis; four weeks later there appeared an exanthem. From Nov. 28th, 1909, until the middle of March, 1910, he received 35 injections of mercury salicylate and calomel. For the past three months he had suffered from pains in both knee-joints. On May 5th, 1910, the patient was received into my wards in a very poor condition. He was very much emaciated, and his skin had the appearance of that of a corpse. The face looked like a Death's head with an expression depicting the highest pain. The whole body and face were covered with ulcerations, incrusted, which reached through the skin into the subcutaneous tissue, together with scars. There was a fœtid smell from the nose. The septum was perforated; the left concha and vomer were ready to drop off. There were large ulcerations in the naso-pharyngeal region, and the uvula was destroyed in its left side. The patient could hardly swallow, on account of the extreme pain, and had to be fed by injections through a tube. The pulse was very small and of poor quality, 120 and over. We did not dare to give an injection, but as his condition grew steadily worse under iodipin injections and as the end was to be expected in the very near future, 0·4 gramme of Ehrlich's 606 was injected on May 21st. The temperature did not rise and the pains did not amount to much. After two days there appeared a great improvement in his general condition, and on May 26th the beginning of a cure was everywhere apparent. On May 30th the uvula had healed. The ulcers were entirely healed. The bony support of the nose had been thrown off *in toto*; the fœtor had disappeared. On June 7th the patient could swallow and could walk around. His weight was, on May 21st, 41·5 kilogrammes; on June 5th, 42·5; and now 57 kilogrammes. He was discharged as cured.

From this time onward all the syphilitic patients were treated with the new remedy, and the symptoms almost always disappeared very quickly. Up to the present time I have treated over 1100 patients. Eroded chancres become clean after from 12 to 24 hours; in cases of marked sclerosis the cleansing process takes place with equal rapidity, but absorption requires longer. There were only four instances in which an exanthem appeared after the healing of the primary sore; in two of these patients it was seen to have disappeared spontaneously on the first and seventh day respectively after the injection, and the two other patients received a second injection. The plaques muqueuses of the mouth heal up in from 24 to 48 hours even if the patient smokes continually. Roseola fades in a few days, and the same occurs with malignant ulcerative syphilides, rupia, moist papules, the small papular syphilides which are under other conditions so refractory, and gummata. The large papular syphilides disappear more slowly, and with them a second injection is often necessary. The results are very favourable in syphilitic disease of the bones, nocturnal pains in the bones disappearing as if by magic.

This sudden stopping of the pains at certain hours can be explained only as the result of a killing of the spirochætæ, as the peculiar appearance of the pains in the bones during the night's rest can be explained only as a biological demonstration of the parasites. In view of experience with other

arsenical preparations, we could not but fear for the optic nerve. We therefore see that every patient has his eyes examined by a specialist before we give the injection. In cases in which there are changes in the optic nerve—a circumstance which quite often occurs—we have not given an injection save as explained below. According to animal experiments, a toxic influence upon the optic sphere is not very probable. It has been demonstrated that some aromatic arsenical derivatives produce in mice peculiar disturbances of coördination, these mice become dancing mice. Rötig has proved that these dancing mice show degenerations of the vestibular nerve, and some of them degenerations of the optic tract. These changes do not appear with the new remedy. And clinical observation seems also to favour the opinion that "606" can be used even in cases of diseased optic nerves. One of our first patients had not been examined for her eyes. After the injection it was found that she had received in my wards an inunction treatment, at which time the optic nerve on each side had had a dim margin and was venously hyperæmic (neuritis optica). The patient remained without any pathological affection of the fundus oculi and retained her full vision (Dr. Fehr).

Lately we have also seen that patients who have been treated with atoxyl or arsacetin stood "606" very well; in these cases also there was not observed any affection of the ocular organ, and this refers to several thousand cases. Even when there was a suspicion of the optic nerve being affected, and in patients suffering from atrophy of it, I have ventured to give an injection on the urgent request of the patient, whom I had made aware of the possibility of danger; this I did in the hope of checking the pathogenic process, and there has not up to the present time been any ill effect. It is even probable that recent optic neuritis may have to be treated with the new remedy as being of syphilitic origin; this is much more frequent than is generally supposed, and in our systematic examinations of patients suffering from secondary syphilis we have found it in about 3 per cent. of the cases. Incomplete recovery from this condition will probably be a factor in subsequent degeneration.

On other diseases of the eye, such as iritis and choroiditis, the remedy has an effect; in parenchymatous keratitis it may occasionally lead to some improvement, but is often of no use—probably because the slight vascularity of the tissue hinders the penetration of it by the remedy. Visceral syphilis, gummata of the testicle, syphilitic tumours of the larynx, icterus, epileptiform attacks of syphilitic origin, cerebral syphilis, paresis of the trochlearis and abducens muscles, and pulmonary syphilis were very favourably influenced. In tabes the subjective improvement was very great; there was almost always a diminution of the shooting pains which are often extremely severe, the unsteadiness of the gait became less, and incontinence of urine due to weakness of the bladder decreased. Whether the remedy produced these results by suggestion or by virtue of its salutary properties is not yet determined. Among the objective improvements a return of mobility in rigid pupils could be absolutely demonstrated in recent cases, but where degenerative processes were present this did not occur. The remedy may always be tried in tabes, because in this disease syphilitic changes amenable to treatment may co-exist with the sclerotic processes, and for the same reason a trial of it may be made in recent cases of progressive paralysis; in advanced cases I have not as yet seen any good result. Very advanced degeneration of the central nervous system and serious disorders of the heart and vascular system are to be regarded as contra-indications. According to our observations, made in conjunction with Professor Nicolai, the injection often leads to a fall in the blood pressure, and this may occasionally in cases of cardiac debility be very dangerous—a circumstance which deserves careful attention, because in particular cases symptoms of hypersensitivity were observed by us about the eighth or ninth day. These patients had a high temperature, reaching over 41° C., together with either (1) an exanthem resembling that of measles or scarlet fever, or (2) an enanthem causing pain in the throat (*angina*). All these symptoms disappeared in a few days, but they might signify danger in cases of weak heart.

One of the principal difficulties in the introduction of Ehrlich's dioxydiamidoarsenobenzol into medical practice has been the fear that repeated administration of it in small doses was dangerous on account of the possibility that symptoms of hypersensitivity might make their appearance. There was a similar dread of the repetition of somewhat large doses, on account of results obtained by actual experiment in cases of trypanosomiasis. Experience has proved that both of these anticipations were groundless. The case mentioned at the beginning of this article showed that the insufficient action of the first dose of 0·25 gramme—a dose which was certainly too small—could be thoroughly compensated by subsequent injections, and that no hypersensitivity ensued therefrom. In view of its immense therapeutic efficacy in general and of its failure in exceptional instances only, it may be supposed that in the latter the absorption of the remedy has been hindered by local anatomical conditions. It seems probable that pathogenic foci of this kind are more readily amenable to a reinjection with a dose varying from 0·5 to 0·6 gramme than to a single dose of greater amount; it has been found that the quantity just mentioned is in general sufficiently active. A portion of the relapses may be due to encapsulated foci of disease inaccessible to the remedy. The occurrence of relapses is unquestionable, but in my experience of many hundred cases of syphilis extending over more than six months the early relapses seem to show themselves much less frequently than under mercurial treatment. In particular they seldom take the form of an extensive recurrence of cutaneous lesions, but generally that of relapses in isolated foci, especially as plaques muqueuses in the throat, iritis, choroiditis, and paresis of the trochlearis and abducens muscles, which yield to a new injection. Whether permanent recovery has been attained or not is naturally undetermined, because the period of observation has been too short for the purpose.

The Wassermann reaction usually disappears, as has been stated by Alt, and my assistant, Dr. Lange, has found that a time from eight to 40 days is necessary to produce this effect, according to the primary severity of the reaction. In some of the cases this reaction has not reappeared so far. In five cases of absence of the Wassermann reaction in absolute lues a positive reaction appeared after the injection, to disappear again. I take such cases to be those of obscure reaction in which collections of quiet spirochætæ have been set free by the injection and have carried their specific matter into the circulation. These observations are very much in favour of a specific factor in the Wassermann reaction.

As to the technique, Iversen and Schreiber prefer the intravenous administration, which, carefully carried out, is painless, but is followed by shivering, vomiting, and pyrexia. I therefore prefer the subcutaneous administration according to the method developed by Dr. Lange and myself.

The substance No. 606 is dissolved by rubbing in a mortar with from 1 to 2 cubic centimetres of commercial solution of soda; the addition of glacial acetic acid drop by drop then throws down a precipitate in the form of a fine yellow mud which is in the next place suspended in from 1 to 2 cubic centimetres of sterilised distilled water and the fluid is neutralised by decinormal soda solution or acetic acid of 1 per cent. strength, the reaction being very carefully observed with litmus paper. The painlessness of the injections depends on the exactness of the neutralisation. We therefore centrifugalise the suspension, pour the fluid off, and afterwards make a suspension of the yellow mud in physiological salt solution. The suspension is drawn up into the syringe and slowly injected subcutaneously at a point below the shoulder-blade, the place having been previously disinfected and touched with tincture of iodine. A little pain often continues for some minutes after the injection and local lesions are not uncommon.

The new remedy, like all arsenical preparations, is an irritant and therefore often causes inflammation; this usually heals up with induration and thickening, but in some patients with sensitive tissues aseptic necrobiotic processes are set up which run a very slow course. For this reason it is desirable to perform the operation as gently as possible.

My experiences have been confirmed in every respect. It may therefore now be taken as certain that the value of the new remedy is great, nay, more, that it is indispensable, and its danger is shown to be small. Further work will make known the limits of its efficacy, but under all circumstances the discovery of it and the creation of chemotherapy form one of the greatest and happiest events in the history of the natural sciences.

THE EGYPTIAN PUBLIC HEALTH DEPARTMENT.[1]

The Budget of the Public Health Department.

THOUGH this is called an annual report, it appears from the preface that none has been issued since 1906, but we hope that Mr. W. P. G. Graham, the new Director-General, will find time to edit a similar report in succeeding years, for the work done by his officers, especially in controlling plague, must be of general interest to our readers. Unlike most spending departments of a Government service, the total expenditure for 1909—£290,190—was some £8000 less than the ordinary Budget as fixed by the Ministry of Finance. But there were in addition some special credits amounting to more than £105,000, about three-quarters of which were expended on fighting plague and rinderpest and on building a new lunatic asylum. These figures compare very favourably with the annual Budget of £60,000, which was all the Egyptian Government could afford when the first Englishman was appointed to the reformed Public Health Service in January, 1884.

Mr. Graham pays a graceful tribute to his ten divisional inspectors, whose duties are "to act in the provinces as the eyes and ears of the Central Administration." No fewer than four of these inspectors have in recent years lost their lives while in execution of their duties in dealing with diseases such as plague and diphtheria, while a fifth inspector has lately been invalided as the result of disease contracted in the course of his work in the country districts.

The in-patient and out-patient departments of the Government hospitals become more popular every year, and attention is again drawn to the inadequacy of Kasr-el-Ainy Hospital in Cairo, which is an old-fashioned building unworthy of the seat of the Medical School and of the head-quarters of the medical profession in Egypt. There can be little doubt that funds should be provided by the Government for its reconstruction. In the list of diseases notified by the medical officers of infectious hospitals and ambulance services we see that the term "typhic fevers" is used, evidently a translation from the "*fièvres typhiques*," which signifies perhaps that the Egyptian doctors are still in doubt as to whether an outbreak consists of typhus or relapsing fever or a combination of both.

Among the strange anomalies for which Egypt is famous—and it may be remembered that Lord Milner once described Government work in Egypt as a comic opera—it appears that there is no legal power to punish a medical man who gives false certificates of death. We read of a doctor who issued a certificate of the death of a person whom he had not seen, and who was proved to have subsequently recovered from his illness; the facts were reported to the legal authorities, but the action of the medical practitioner was found not to come within the provisions of the existing law!

Ophthalmia, Plague, Infectious Diseases, &c.

We have previously referred in these columns to the endeavours to cope with the all-prevalent ophthalmia in Egypt by the travelling tent hospitals, originally set on foot by the generosity of Sir Ernest Cassel, which take medical aid literally to the door of the fellaheen. The eye patients regularly treated during the year in five provincial towns amounted to more than 12,000, while more than 3000 cases of trichiasis were operated upon and cured. The eye hospital at Tanta dealt last year with nearly 5000 new cases, while 1763 major operations and 2418 minor operations were performed in the hospital, which is the direct outcome of the work done by the travelling tent hospitals. Similar eye hospitals are now being built in Assiut and Mansura partially subscribed for by the local inhabitants. One satisfactory point in connexion with this work is that more than a third of the persons attending for treatment are under the age of 15, and it is hoped that much good will be done by dealing with diseases of the eye in the various Government schools. Attention is being directed to the equally important question of infant mortality, for in the spring of 1909 the death-rate of children under the age of one year rose from a weekly average of 104 per 1000 to 654 in May and to the maximum of 700 in one week in June. The chief cause of death was summer diarrhœa, due apparently to improper food, such as melons, bread, and unripe dates, and to the all-pervading domestic fly.

The plague figures show a marked decrease, both in the number of cases attacked and in mortality, while there were only nine cases of pneumonic plague in 1909, as compared with 168 in 1908, and 250 in 1907. The general measures adopted in Egypt which have successfully kept the plague within reasonable bounds are: (1) Isolation of the sick; (2) disinfection of the persons, clothing, and bedding of "contacts"; (3) isolation of contacts in pneumonic and septicæmic cases, and of suspect contacts in bubonic cases; (4) disinfection of the field of contagion; and (5) measures against rats. During the 11 years that plague has been endemic the number of officially reported cases is 6237, of whom rather more than one-half have died. The question of inoculation against plague has again been considered, but it was felt that its general employment would be so unpopular as to make it of little value. There were 453 cases of small-pox in Cairo alone, in spite of the fact that the vaccine institute distributed more than one million units of vaccine throughout the country. Measles and diphtheria are apparently on the increase, and 8166 doses of diphtheria antitoxin were issued by the Public Health Department. There were two marked local outbreaks of enteric fever, one of which was due to a carrier, a European waiter employed in a hotel, and the other was caused by a local infection occurring in an emergency water cistern on the roof of the building.

Preventive Measures against Malaria and Cholera.

Anti-mosquito measures have been carried out to some extent in Cairo, Port Said, Suez, and Ismailia, the two latter towns having an old reputation for malaria. The report says that a mosquito campaign in Cairo and its suburbs is practically "a luxury," because malaria, yellow fever, and filariasis are almost non-existent, but the writer seems to have forgotten that dengue is often present in Cairo, and that there is much proof that this disease is conveyed by a mosquito. The malaria-bearing mosquitoes are not usually met with in Cairo except between August and November, when there is a rise of the subsoil water during high Nile. In Suez an anti-malarial society, organised by Dr. J. E. Creswell, has proved of much value. Fortunately for Egypt, when malaria arises in that country it is of the benign tertian variety, and although it would be a distinct comfort to the inhabitants to be able to dispense with mosquito curtains, as is the case in Khartum, it cannot be pretended that anti-malarial measures should occupy the chief energy of the public health officials.

The completion of the Hedjaz railway, which is utilised by pilgrims returning from Mecca, increases the anxiety of those who are responsible for the protection of Egypt from cholera. The burden falls upon the Quarantine Department in the first place and the Public Health Department in the second place. To the latter must be accorded the powers of control of possibly infected pilgrims arriving from infected countries and of submitting them to sanitary surveillance for the necessary number of days. This is essential, when it is remembered that in all the investigated outbreaks of cholera in Egypt the disease seems to have been imported there from the Hedjaz. The control of passengers at the port of arrival seems to be all-important and, when tried, has not met with much opposition. Dr. Creswell writes somewhat humorously from Suez on this point: "In the game of hide-and-seek which we annually play with the pilgrims it is well to recognise that they have the advantage of position. Any ill-advised measure which they do not like always fails, and it is to our advantage to meet their wishes in every way we can. The key to the control after their return is proper registration before they leave."

Water-supply.

The Cairo water-supply, a question which has occupied public attention in Egypt for five years, and which was referred to at length by the Special Sanitary Commissioner of THE LANCET (in June, 1909), has now received a solution. The new intake of the company has been fixed at a point below Cairo, 100 yards from the river bank, and therefore in full stream of the Nile, and four modifications of the Jewell system of filtration have been adopted. As no surface-water

[1] Annual Report for 1909 of the Department of Public Health in Egypt. Cairo. 1910. Pp. 131.

drainage or domestic sewage is to be allowed to enter the Nile the site of the intake is less dangerous than it sounds. Ever since 1884 the Public Health Department has been urging on the Government the necessity of draining Cairo, but it is only now that the work has been begun by the negotiation of several preliminary contracts.

The Jewell mechanical system of filtration has been found to be a great success in Alexandria for the last ten years, though that city is dependent upon water "derived from the Mahmudia Canal, which is probably the foulest canal in Egypt." Shone's compressed-air system of drainage has been recommended for the town of Port Said, where the subsoil water is seldom more than three feet below the surface, and where the cesspools were full of mosquitoes until the petroleum method of dealing with them was introduced.

Various Matters.

The goats of Port Said are all being examined by the agglutination test for the presence of Malta fever, and the first lot of 100 goats gave as many as 12 positive reactions. After deducting 82 people whose treatment was not continued because it was found on investigation that they had not been bitten by rabid animals, there remained 612 persons who were treated at the Antirabic Institute during the year. Of these, eight were bitten by animals proved by microscopic examination and by experiments to have rabies. The comparatively high mortality during 1908 compelled Dr. Bain, the director of the institute, to strengthen the vaccine by using material considerably fresher than that used at the Pasteur Institute in Paris, and he believes that he will have still further to strengthen it, for five of the people he treated died in spite of his efforts.

The report is enriched by six typical photographs of pellagra, a subject at which Dr. R. G. White has been working for a few months. He concludes a preliminary report as follows: "Judging from the work so far done one feels only justified in saying that at least damaged maize as found in some of the villages, and presumably used for food purposes by the poorer fellaheen, seems to cause a condition of the nature of a toxæmia. Whether this is due to some poison elaborated by a fungus growth in the grain or to the fungus itself only further research can decide." There are said to be 6500 lepers in Egypt, and it is now proposed that all beggars and vagabonds affected with leprosy should be strictly isolated, and also that certain restrictions should be made as to the occupation followed by lepers, but for all this a new law will be required.

Need of Scientific Investigation in Egypt.

There are few countries in the world that offer so attractive and untouched a field of scientific investigation as does Egypt. The most valuable asset to the land, the labourers on the soil, are decimated by the infectious diseases with which it is the duty of the department to cope, but the initial causative factors of a great many of these are still unidentified. This is the work of the Hygienic Institute, founded in 1896 by Sir John Rogers, and it would readily repay the Government to make such sacrifices as are necessary to place a work of this kind on a sound financial footing. There is no lack of useful experimental and investigational work to be done, but the work awaits a suitable series of laboratories and an adequate staff to undertake it. As the Director-General states so forcibly in his conclusions, the calling of the sanitary expert is a modern one and preventive medicine a modern science. The Egyptians are eminently a people of tradition and habit, and this fact must be taken into consideration in determining the direction in which any given movement shall advance with success. There are three measures upon which efforts should for the present be concentrated. Firstly, a sound organisation of the department upon a wide basis and the employment of Englishmen for much of the scientific and administrative work; secondly, the elaboration of a Public Health Law which shall clearly distinguish between *compulsory* regulation and optional powers granted to local authorities; and lastly, the organised extension of research work in connexion with the recognised diseases of the country, and requiring for its realisation the financial assistance of the Government.

REX *v.* CRIPPEN.

THE trial of Hawley Harvey Crippen, lately the agent in this country for the Munyon Remedies, and stated to possess in America a diploma from a homœopathic institution, who was indicted on the charge of murdering his wife Cora Crippen, known in the theatrical world as Belle Elmore, was opened at the Old Bailey on Oct. 18th and lasted five days, when on Oct. 22nd the Lord Chief Justice passed upon Crippen the sentence of death.

Mr. R. D. Muir, Mr. Travers Humphreys, and Mr. S. Ingleby Oddie represented the Crown, and the prisoner was defended by Mr. A. A. Tobin, K.C., Mr. Huntley Jenkins, and Mr. Roome.

The Case for the Crown.

Mr. Muir, in opening the case for the Crown, told the story of Mrs. Crippen's disappearance, as explained by Crippen. Inquiries from Scotland Yard led to the flight of Crippen, immediately after which human remains were found in the cellar at Hilldrop-crescent, the residence of the Crippens. Mr. Muir described Crippen's flight to Canada with Ethel Le Neve and the investigation of the headless, limbless, and boneless remains made on behalf of the Crown. He suggested Crippen's motive to get rid of his wife was that he might consort with Le Neve. Belle Elmore had totally disappeared, and Crippen, who was the only person who professed to explain the disappearance, admitted that his first account of the matter was totally false. Mr. Muir said that he would show that the mutilated remains had been dissected by a person possessed of such knowledge and skill as Crippen might be presumed to have; that there were circumstances in their appearance which made it probable that they represented the corpse of Belle Elmore; and that the remains contained a poison—namely, hyoscine—which it was known that Crippen had purchased in a large quantity.

We need not tell in detail a long and thrice-told story, but, as bearing upon the scientific evidence, which we narrate at some length, the following two things should be remembered. One of the witnesses for the Crown said that she had seen on Belle Elmore the mark of an old cut about six inches long running from the lower part of the abdomen upwards to the navel. Representatives of a firm of druggists proved that Crippen had purchased five grains of hyoscine hydrobromide shortly before the suggested date of the murder.

The Medical Evidence.

On July 14th, 1910, Mr. A. J. Pepper and Dr. Thomas Marshall visited 39, Hilldrop-crescent, and found animal remains in a hole in the cellar. There appeared to be lime mixed with the soil surrounding the remains.

Dr. W. H. Willcox on analysis found calcium hydrate and calcium carbonate in the earthy material around the remains corresponding to about 30 per cent. of quicklime. If quicklime (calcium oxide) had been mixed with soil the moisture from the soil and from the remains would turn it into calcium hydrate, and the carbon dioxide produced by putrefactive changes would turn this calcium hydrate partly into calcium carbonate, which was exactly what was found.

With the remains were found a pair of female combinations, the undervest of a woman, a man's handkerchief bearing no mark, a pyjama jacket, which was identical in pattern with a pair of pyjama trousers which were admitted by the defendant to be his. This pattern was a remarkable and unmistakeable one. Also with the remains were found three Hinde's hair-curlers containing brown hair several inches long. Microscopical examination showed that the hair was human, and roots were visible at one end indicating that probably the hair had been pulled out. The hair in curlers showed unmistakeable signs of bleaching in the distal portion. There was also some loose brown hair in the handkerchief which was lighter in colour than the other hair, presumably owing to bleaching. This showed roots at one end.

The remains were on examination found to be undoubtedly human. The heart, lungs, liver, kidneys, stomach, and intestines were typically those of a human adult. And also portions of skin and muscles of a human body were present.

The condition of the remains when found showed a

remarkable freshness and freedom from the ordinary signs of bacterial putrefaction. The heart and kidneys especially appeared perfectly fresh, and their structure could be made out quite clearly. There was a relatively considerable amount of adipocere present in the portions of skin and organs found. Bearing in mind that the remains were surrounded by soil heavily impregnated with lime it would be expected that if buried soon after death the ordinary bacterial processes of putrefaction would be delayed, since lime is antiseptic in property; on the other hand, the presence of lime would accelerate the formation of adipocere. It was after a careful consideration of the conditions under which the remains were found that Mr. Pepper, Dr. Marshall, and Dr. Willcox gave it as their opinion that they had been buried from four to eight months. From the conditions of the organs generally, and from the condition of the heart and aorta, it was concluded that the remains were those of an adult of early or middle life. The absence of marked bacterial putrefaction pointed to burial soon after death.

An examination of the remains revealed no cause of death referable to disease or injury. Among the pieces of skin with subjacent muscle found was a piece 7 inches by 6 inches. This piece had on its posterior portion a piece of muscle 4 inches in vertical extent, which corresponded exactly to the left rectus abdominis muscle. At the lower end of this muscle was a layer of tendon which was either part of the tendon of insertion of the muscle or a part of one of the transverse tendinous intersections. Also on the posterior part of this piece of skin was aponeurosis bearing the characters of aponeurosis from the lower abdominal wall. On one side of the posterior part of the piece of skin were muscles with fibres running in two directions, corresponding to the internal oblique and transversalis abdominis muscles. On the left portion of the anterior surface of the piece of skin were hairs arranged in a transverse horizontal line and corresponding to human pubic hairs.

The above characters of the piece of skin in question caused the medical witnesses for the Crown to place its position as being the lower part of the anterior abdominal wall, and the medical witnesses for the defence, Dr. H. M. Turnbull and Dr. R. C. B. Wall, assented finally to this conclusion.

On the anterior surface of the piece of skin stretching from about half an inch above the line of hairs was a mark triangular in shape, the base of the triangle being below. The width of the mark was seven-eighths of an inch below, and it extended upwards four inches. The width at the middle was half an inch and at the upper part a quarter of an inch. This mark was smooth and showed some pigmentation and transverse striation. Along the middle of the triangular mark was a slightly raised line. This mark was emphatically expressed by Mr. Pepper as being an old stretched scar. There were no stitch marks visible, but it was pointed out that these were often absent in stretched scars. Dr. Marshall, Dr. B. H. Spilsbury, and Dr. Willcox formed independently the same opinion as Mr. Pepper with regard to this mark. Stretching from the apex of the mark (scar) described was a curved mark which then extended down in a horseshoe-like manner to the left. This curved mark was stated by the witnesses for the Crown to be a groove due to folding of the skin, and they concluded that it was not a scar because this curved mark showed to the naked eye the marks of sebaceous glands and did not show the smoothness and other characters mentioned in regard to the mark described as a scar.

The medical witnesses for the defence expressed the opinion that both marks might be due to folding of skin and subsequent pressure. It was, however, concluded that while a single fold of the abdominal wall might take place it was difficult for a double fold to occur owing to the elasticity of the specimen. Also folding would not account for the triangular appearance of the portion described as a scar and which appearance was presumably due to stretching.

A microscopical examination was made of several portions of the specimen—the part described as a scar and that described as a groove. Dr. Spilsbury prepared specimens of these and the sections were examined by the medical witnesses for the Crown and by Dr. Turnbull and Dr. Wall for the defence. It was admitted by all that sebaceous glands and hair follicles were present in the groove. In the part described as a scar were—along the line of the incision in the deeper parts of the section—portions of epithelium which were mentioned in the evidence of the witnesses for the Crown as being included epidermis, which is commonly present in the scars following surgical operations. The medical witnesses for the defence stated that this included epithelium, in their opinion, might be the epithelium of sebaceous glands and hair follicles.

The jury asked to inspect the microscopical specimens, but the judge very properly advised that this be not done, since the forming of an opinion on this point involved a very considerable experience of pathological histology.

The piece of skin in question showed no sign of the navel. Mr. Pepper stated that this had probably been removed at the operation, and that it was a not uncommon practice to remove the navel when a long incision was made in the midline of the lower abdomen. Had the navel not been removed it would most probably have been present in the piece of skin in question.

All the medical witnesses were of opinion that the remains showed no certain anatomical signs as to sex.

The remains when found consisted of several portions of skin and muscle, and also the whole of the viscera of the chest and abdomen, with the exception of any pelvic viscera. The viscera of the chest and abdomen had been removed in one mass. This was considered to indicate that the person engaged had been possessed of some anatomical knowledge in the evisceration of human or mammalian animals, but it did not necessarily imply that great practical post-mortem experience was necessary.

The remains included no head nor limbs nor bone of any kind. Also no pelvic viscera were present. Thus, the certain indications of sex and identity had been most effectually removed.

The viscera (stomach, kidneys, intestines, and liver) were sent to Dr. Willcox for analysis on July 22nd. He found in each of these organs an alkaloid which produced complete paralysis of the pupil lasting several days. Cats were the animals experimented on. Dr. Willcox submitted all the organs to the Stas-Otto process and from each obtained a mydriatic alkaloid. In each case a definite purple-violet colour was given by Vitali's test, showing, in his opinion, that a vegetable mydriatic alkaloid was present—viz., atropine, hyoscyamine, or hyoscine. Having found a vegetable mydriatic alkaloid Dr. Willcox proceeded to determine which was present, and by special purification of the alkaloid obtained he found that it was not crystalline but gummy in character. Also he found that on treating a solution of the purified alkaloid with bromine in hydrobromic acid brown spheres were obtained. Hyoscyamine and atropine give crystals with this latter test, and hyoscine spheres. From these characters Dr. Willcox concluded that the alkaloid present was hyoscine.

Dr. A. P. Luff, honorary scientific adviser to the Home Office, confirmed independently the accuracy and suitability of the tests applied by Dr. Willcox, and supported him in his emphatic opinion that the mydriatic alkaloid found must have been a vegetable mydriatic alkaloid and must have been hyoscine.

Dr. Willcox found in the stomach 1/30 grain, in one kidney 1/40 grain, in the intestines 1/7 grain, and in the liver 1/12 grain; total, 2/7 grain of hyoscine, corresponding to 2/5 grain of hyoscine hydrobromide. Dr. Willcox concluded that over half a grain of the salt must have been present in the whole body.

The lungs, when submitted to Dr. Willcox, were more putrefied than any of the other organs; they showed only the merest trace of mydriatic alkaloid, very much less than any of the other organs.

The distribution of the poisonous alkaloid pointed conclusively to that of an alkaloid being administered by the mouth, and entirely excluded the possibility of the alkaloid being the result of putrefaction, since the best preserved organs yielded the greatest percentage of alkaloid.

The uses of hyoscine hydrobromide in medicine were fully considered by the Court. It was pointed out that when used internally it was generally given hypodermically in doses of 1/100 to 1/200 grain, the use being, as a rule, for cases of delirium, delirium tremens, mania, meningitis, &c., where the sedative action of the drug was required. It was also pointed out that the drug was given occasionally as a hypnotic and also in combination with morphine as a sedative. It was mentioned that sometimes the drug was given by the mouth, especially for cases of nerve disease, such as paralysis agitans, &c. Dr. Willcox stated that it was

never given by the mouth in doses of half a grain. Hyoscine is not mentioned in the British or American Homœopathic Pharmacopœias and its use in homœopathic medicine appears to be very rare, though the defendant stated that he bought 5 grains of hyoscine hydrobromide for this purpose. The defendant stated that he used in his practice two-thirds of the quantity he bought, but he could not mention a single patient to whom he had prescribed the drug. Nor could he state where the remainder of the poison was. There is no criminal case of hyoscine poisoning on record.

The Case for the Defence.

Mr. Tobin's speech for the defence endeavoured to show that Crippen was a good-natured man, that Belle Elmore's character was not above suspicion, and that the untruths which Crippen had told were intended to prevent any scandal following upon the action of his wife, who, it was suggested, was alive, while his flight was only what innocent men had done before in a panic. With regard to the medical aspect of the evidence Mr. Tobin suggested that there was a doubt as to the sex of the remains, that the mark on the piece of skin was not the mark of an operation, and that Crippen's anatomical knowledge was not sufficient to have enabled him to perform the dissection in the manner in which it had been performed. Counsel also laid stress on the fact that Crippen when obtaining the hyoscine hydrobromide need not have signed the poison book and that he openly left the record of his purchase at a shop where he was known. Crippen was then called into the witness-box and gave evidence in support of his counsel's opening. His cross-examination lasted three hours, during which time he maintained a perfectly calm demeanour. The scientific evidence for the defence has been outlined above.

The Summing-up, Verdict, and Sentence.

The Lord Chief Justice in his summing-up, after reviewing the evidence in an exhaustive and impartial manner, said if the jury were of opinion that the Crown had not completely proved their case the verdict must be "Not guilty." They must not, however, hesitate to return a verdict of guilty from any fear of what might happen in the future. If Cora Crippen was really alive there had been ample opportunity for bringing her forward. The jury after an absence of half an hour returned into court with a verdict of "Guilty." The prisoner protested his innocence, and the Lord Chief Justice in passing sentence of death warned him not to expect any remission.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE ANNUAL REPORT OF THE COUNCIL.

THE report of the Council of the Royal College of Surgeons, which is to be laid before the annual meeting of Fellows and Members on Thursday, Nov. 17th next, is now published. The report deals with the work in the various departments of the College during the year ending August 1st, 1910.

At the last annual meeting resolutions were carried (1) reaffirming the desirability of admitting Members to direct representation on the Council; (2) the amending of the Midwives Act in order that provision may be made to secure just remuneration for professional services rendered by medical men under this Act; and (3) the promotion of a new Charter and Act of Parliament to incorporate the Royal Colleges of Surgeons and Physicians of London so as to form Royal Colleges or parts of the University of London.

In its report the Council states that the resolutions were submitted to it at its meeting in December, and at the following meeting in January a special committee was appointed to consider and report on the question of the representation on the Council of Members of the College. This committee took the question into consideration and presented a report, which was considered at the meeting of the Council in March, when it was decided to take no steps with regard to this question. With regard to the proposed amending of the Midwives Act, the report states that at the meeting of the Council in December the President called attention to the report of the Departmental Committee appointed by the Lord President of the Privy Council to consider the working of the Act, and he was requested by the Council to address a letter to the Privy Council urging the need for early legislation to give effect to the recommendations of the committee. Copies of the letter addressed by the President to the Privy Council and of the letter which he received in reply are contained in the report. In reference to the proposed combination with the University of London a letter was received from the secretaries of the Royal Commission on University Education in London stating that the Royal Commission would be prepared to receive information regarding the views of the College upon questions connected with medical education in London and would like to have a statement of the nature and scope of the evidence proposed to be given. The Council appointed a committee to prepare a statement, and authorised the committee to coöperate with any committee of the Royal College of Physicians which might be appointed for the same purpose. Similar action having been taken by that College, several joint meetings of the representatives of the two Colleges were held and a report was drawn up. This report was approved and adopted by the Council of the Royal College of Surgeons in March, 1910, but when submitted to the Royal College of Physicians for approval it was referred to a committee of that College for consideration.

The by-laws relating to the admission of women to examination for the diplomas of the College have been approved by the Secretary of State for Home Affairs, and the first woman to be admitted a Member of the College received her diploma in May last.

The jubilee of the charter enabling the College to grant Licences in Dental Surgery took place during the period with which the report deals, and was celebrated by a dinner in the library of the College in December, 1909. The President was in the chair, and, besides the Vice-Presidents and Council, there were also present a considerable number of representative members of the dental profession from London and all parts of the country.

Notice having been given by the Society of Apothecaries of London of its intention to promote a Bill in Parliament to give the Society authority to grant diplomas in dental surgery, &c., and for other purposes, a petition against the Bill was lodged by the College, and in opposing the Bill the College had the support of the British Dental Association, the National Dental Hospital and College, and many of the teachers of dental surgery in London. Technical objections to the Bill were raised in Parliament on the ground that it sought to alter public Acts and that public Acts cannot be altered by means of private Bills, and it was ordered by the Speaker to be withdrawn as a private Bill.

With regard to the regulation made by the Council in June, 1909, that all candidates for the Licence in Dental Surgery of the College entering at a recognised dental hospital or school should be required to produce a certificate of having attended at a recognised dental hospital or school a course of practical instruction in the administration of such anæsthetics as are in common use in dental surgery, it seems probable, says the report, that this regulation will become general. In November, 1909, the General Medical Council adopted a recommendation to the licensing authorities that every candidate for a Licence in Dental Surgery should be required to produce a certificate that he has attended such a course. With regard to the general question of the administration of anæsthetics, the Council has had before it the text of a Bill entitled the Anæsthetics Bill, 1909, and has taken into consideration the conclusions adopted by the General Medical Council in reference to this Bill and has concurred generally with the views of that Council upon the subject.

The report contains copies of the addresses of condolence which were presented by the Council of the College to the King and Queen Alexandra upon the occasion of the death of King Edward VII., together with the replies received from the Home Secretary and from the Lord Chamberlain to Queen Alexandra. A copy of the official letter duly notifying the King's pleasure to continue to be an Honorary Fellow of the College is also included.

With regard to finance, the income of the College shows an increase of £150 on that of the previous year. There is a decrease of £480 in the receipts from the Conjoint Examining Board in respect of the Membership, but in regard to the fees received from the Fellowship, the Licence in Dental Surgery, and the Diploma in Public Health there are increases of £150, £68, and £100 respectively. Although

on account of the limited space now occupied by the Conjoint Board at the Examination Hall a decrease is shown from the amount received in the previous year from the hire of rooms account, yet a considerable sum has been realised from this source of income. The expenditure for the year shows an increase of £648. There is a decrease of £355 in the fees paid to examiners under the Board, while as regards the Fellowship, the Licence in Dental Surgery, and the Diploma in Public Health there is an increase of £83, £106, and £46 respectively. Included in the report is a full statement of the receipts and expenditure accounts.

During the year 344 Membership diplomas have been issued, together with 56 Fellowships, 84 diplomas of the Licence in Dental Surgery, and 36 Diplomas in Public Health, which latter qualification is granted jointly with the Royal College of Physicians.

The chief donations to the museum and library of the College are published in the report, and it is noticeable that in each of these departments of the College the number of visitors and readers respectively has been considerably in advance of those of the previous year.

The obituary list is a long one and is this year noteworthy as it contains the name of the late King Edward VII. The Council states that it regrets his loss the more in that he signified his approval of the creation of the Honorary Fellowship by becoming the first Honorary Fellow. The names of a past vice-president, a member of the Council, and an examiner in midwifery are included in the obituary list, together with 26 Fellows, 227 Members, and 5 Licentiates in Dental Surgery.

Full particulars are given in the report concerning the forthcoming series of College lectures, and any Fellow or Member desirous of having the report sent annually, and whose name is not already on the standing list kept at the College for this purpose, can have the same sent to them, free of charge, on applying to the secretary.

ASYLUM REPORTS.

City of Cardiff Mental Hospital (Report for the Year 1909).—At this hospital the total number of cases under treatment during the year was 873, the average daily number on the register being 673. 189 patients were admitted, and of these 181 were direct admissions. Dr. Edwin Goodall, the medical superintendent, points out that heredity of some kind was elicited in 31·2 per cent. of the admissions and that there can be no doubt that it was present in a number of cases in which no cause could be assigned. As to the "health" of the admissions, it appears that 79 were in bad health, 64 in moderate health, and 46 in good health. 119 patients were discharged. The recoveries numbered 62. Calculated upon the number admitted and excluding transfers this gives a recovery rate of 35·4 per cent. In addition to the recoveries 23 patients left relieved. As regards the duration of residence of those who left recovered, 38 out of 62, or 61 per cent., were in residence for not more than five months, and 29 out of 62, or nearly 47 per cent., for not more than four months. It is claimed that these are high percentages of short period residences in mental cases, and it is hoped that the methods employed to promote recovery are to be credited in considerable measure with these good results. Dr. Goodall points out that it is unfortunately the case that the patients discharged from the public mental hospitals are, without a due period for convalescence, plunged forthwith into their usual avocations, these often being associated with mental stress. In these circumstances it is perhaps astonishing that relapses are not more frequent. There were 81 deaths, and necropsies were held in 75 cases. Judging from the amount of research work done it would appear that much use is made of the excellent laboratory provided by the wisdom of the committee of visitors.

Dorset County Asylum (Report for the Year 1909).—At this institution the average daily number on the registers was 847. 173 patients were admitted. The medical superintendent, Dr. P. W Macdonald, gives a table showing in tabular form the number of persons admitted and the number resident at the end of each year during the quinquennium ending with the close of 1909 He points out that though the figures show a greater variation in the number of admissions than in those resident, the true criterion of variation in the rate of increase or decrease of lunacy should not be based on the admissions, for it frequently happens that persons are admitted who are not reliable factors in computing a table of annual increase. In this class must be reckoned many of the senile, who after a few weeks or months of nursing are fit to return home. Dr. Macdonald raises a question whether it is reasonable that the ratio of the insane to the population should be raised by the inclusion of cases which could have been equa ly well cared for elsewhere, but which because of the difficulty of providing for home care are sent to the mental hospital. Taking first admissions only, it appears that there is a clear 50 per cent. in which there were present maniacal symptoms. This is different from the proportion obtaining a few years ago, when cases of this type were considerably fewer than those in which depression was the main characteristic. Fewer cases of general paralysis and epileptic insanity were admitted. Dr. Macdonald observes that among the causes of insanity the influence of heredity is steadily assuming larger proportions. The percentage of recoveries among those discharged was 40·28. On the female side the percentage of recoveries for the year was 57, whereas among the men it was only 24. The death-rate, calculated on the total number under treatment, was 7·1. Dr. Macdonald reports on the successful results of treating recent cases in the solaria instead of in bedrooms or dormitories.

Hereford County and City Lunatic Asylum (Report for the Year 1909).—The average daily number resident was 505, and 586 persons were under care during the year. 86 patients were admitted. It is very remarkable that as an associated cause of insanity thyroid disease in one or other of its several forms was noted in 16·6 per cent. of the males and 63·4 per cent. of the females. 50 patients were discharged, the percentage of recoveries calculated upon the number of admissions (transfers from other asylums excluded) being 28. The deaths numbered 40, giving a percentage calculated on the daily average number resident of 7·9. Post-mortem examinations were held in 76·5 per cent. of the total number of deaths.

East Sussex County Asylum, Hellingly (Report for the Year 1909).—The average daily number of patients on the register was 1092. There were admitted 277 persons. The proportion of senile cases was higher than in the previous year, while the number of patients suffering from general paralysis was considerably less. 11 patients were admitted with the latter disease, and in only 4 of these could a history of syphilis be obtained, and of these but 2 showed the stigmata of the disease. The number of patients discharged was 191, of whom 108 were recovered, the recovery rate being 43·37 per cent. on the direct admissions. Deaths during the year numbered 98, the death-rate being 8·97 per cent. on the total number under treatment. The mortality from tuberculosis is low, being at the rate of 10·9 per 1000. Dysentery caused only one death. Post-mortem examination was made in 71·5 per cent. of the deaths. The medical superintendent, Dr. F. R. P. Taylor, reports that in 247 of the 277 direct admissions a family history was obtained and that heredity was ascertained in 28 per cent. of the males and 43 per cent. of the females. In Dr. Taylor's opinion it is most important to impress on the public the hereditary nature of mental diseases and to supervise most carefully the education of children who have, through their parents, a tendency to the disease.

Roxburgh, Berwick, and Selkirk District Board of Lunacy (Report for the Year ending May 15th, 1910).—The average daily number resident in the asylum at Melrose was 312·6. The number of admissions during the year was 52, or 20 less than during the previous year, and 14·2 less than the average for the ten previous years. 34 patients were discharged, and of these 23 had recovered, and 11 were relieved. The recoveries as compared with the admissions gave the proportion of 44·2 per cent., the recovery rate for the previous 37 years since the opening of the asylum having been 33·7 per cent. The deaths numbered 23, giving a rate of mortality, calculated on the average number on the register, of 7·1 per cent. The average rate for the previous 37 years was 7·3 per cent. Post-mortem examinations were held in 78·2 per cent. of the deaths. Pulmonary tuberculosis was found to be present in an active form in 34·7 per cent. of all the deaths.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

City of Liverpool.—The annual report of Dr. E. W. Hope, the medical officer of health of this important city, with its population of some 760,357, is always interesting reading. The birth-rate of Liverpool is considerably above the average of the large towns, and although the rate is declining in common with that of the country as a whole, it is still exceeded by only two towns having a population of over 100,000. The general death-rate for the year 1909 was 18·3 per 1000, and in connexion with this rate Dr. Hope draws attention to the fact that the proportion of deaths which take place in Liverpool in public institutions is larger than is the case in other towns. Generally speaking, this phenomenon implies poverty and want, but, as he points out, it may also, and no doubt does, indicate that the institutions have a wide reputation and attract people both from within and without the city. This latter is certainly an increasingly important factor, and with the improvement of infirmaries it will be necessary to be very careful in drawing inferences as to the prevalence of poverty and want from the popularity of these institutions. But whether this be so or not, some 34·3 per cent. of the total deaths in Liverpool take place in Liverpool as compared with 25·8 per cent. in Manchester, 16·9 per cent. in Leeds, and 23·9 per cent. in Birmingham. Small-pox was introduced into the city on six separate occasions during 1909, the disease being ship-borne in three instances and introduced by overland Russian emigrants in three instances. As regards protection against this disease Dr. Hope remarks that the medical inspection of school children is showing that there is growing neglect of vaccination, and that the younger children manifest less satisfactory vaccination than the older ones. It was found that in one Poor-law district nearly 14 per cent. of the children newly admitted to school were unvaccinated. Presumably in referring to less satisfactory vaccination than formerly Dr. Hope has meant vaccination by one mark instead of four, and if this be so it seems a pity that the names of those responsible for the vaccinations cannot be given, as no medical man has any right to administer what is practically an underdose of a drug, serum, or vaccine. With respect to scarlet fever, a chart is furnished showing the death-rate from this disease in Liverpool during the past 60 years, and Dr. Hope adds that for the first half of this period at intervals of a year or so the number of deaths from scarlet fever reached proportions which would now be regarded with astonishment. But from the period when hospital isolation was provided, and better administrative methods adopted, there has been a remarkable drop in the death-rate from this disease, and he thinks that this lesson may be applied to other forms of infectious diseases, such as whooping-cough and measles. An expression of faith in the utility of isolation hospitals coming from a great city such as Liverpool is an important fact and will be welcomed by a large number of medical officers of health. The statement would, however, prove of even greater value if all the data upon which this conclusion is based could have been given, since the scepticism so often expressed by medical officers of health as to the value of isolation, especially in scarlet fever, renders it necessary that this question shall be freely discussed. On p. 48 there is furnished a table showing the death-rate from scarlet fever for each 10-yearly period from the year 1856 to 1905, and the rates given in this table do not seem to fit in with the table on p. 269 in such a manner as to quite justify Dr. Hope's inferences. It would certainly much assist investigation of this very important subject if, from the standpoint of his exceptional experience, he would discuss the matter in more detail in his next annual report or by means of a separate report. Dr. Hope has, we are glad to see, a very firm faith in the value of isolation hospitals, and he predicts that isolation for a limited number of cases of whooping-cough will lead to some diminution of the disease. In connexion with the subject of tuberculosis some very reasonable comments are made in reference to the limited degree of infectivity of the disease. In Dr. Hope's view forms of tuberculosis other than phthisis may be regarded as practically non-infectious, the large majority of the cases of phthisis coming under the same category. As regards the remainder they are, he adds, infectious only under circumstances favourable to infection, and have little, if any, tendency to spread where reasonable precautions can be adopted. He observes that in the great consumption hospitals of the country, notwithstanding the constant exposure of the attendants on the sick, infection is extremely rare, and the same remark may, he says, be made with reference to the Liverpool Hospital for Consumption and to Poor-law institutions. It is, in his opinion, the vicious domestic or living conditions which lie at the root of the evil, and it is against these that sanitary effort in Liverpool has been directed. Dr. Hope then furnishes an interesting account of the work done in the direction of destroying the breeding-places of tuberculosis by the Liverpool Housing Committee, which has now 2200 dwellings with 8075 people under its control. These dwellings have been erected on the sites of the insanitary dwellings which they replaced, and are reserved for the people dispossessed; that is to say, the people whose slums were demolished form no less than 80 per cent. of the total inhabitants. Although this is the case the phthisis death-rate in the new dwellings is only 1·9 per 1000, a rate which is considerably below that of the districts in which the dwellings are situated. With respect to this administrative action Dr. Hope thinks that "no practical sanitarian would suggest that if, instead of spending the money in demolishing the slums, purchasing the sites, and erecting the dwellings, it had been spent in providing sanatoria and in removing and maintaining the diseased people therein, that the results would have been at all comparable either in benefit to the city or to the inmates of the dwellings themselves." It may be added to this statement that 50 beds have been set apart at one of the isolation hospitals for the treatment of cases of tuberculosis. As regards the question of tuberculous milk an instructive chart is furnished showing that under the local powers conferred by the Liverpool Corporation Act, 1900, in connexion with the examination of milk furnished from outside the city, there has been a progressive decline in the percentage of samples found to be tuberculous, but the photographs of some of the country cowsheds on farms which supply milk to the city show that there is still much work to be carried out before a pure milk-supply can be ensured. The quality of the water supplied to Liverpool as indicated by daily bacteriological examination shows that the average number of bacteria has been only 23 per cubic centimetre, that B. enteritidis sporogenes was absent in all cases, and that bacillus coli was only found in 50 cubic centimetres and 100 cubic centimetres of the water. This is a most valuable and interesting report for which we wish to thank the author.

Borough of Sunderland.—The population of this borough reached the estimated number of 159,157 in 1909. The birth-rate was 29·4 per 1000 and the death-rate 17·0 per 1000. The number of women living at child-bearing ages is estimated at 40,252, and the number of children born per 1000 of such women was 116 in the year 1909. There were 229 cases of diphtheria notified and the fatality rate was 14 per cent., and Dr. Henry Renney strongly urges parents to seek medical advice in throat diseases in children, however slight the malady may appear. A localised outbreak of diphtheria occurred in 1909, and the medical officer of health was inclined to ascribe it largely to the fact that the children attacked were in the habit of playing about a sewer ventilator. Since June, 1901, there have been 81 patients treated in the Stanhope Sanatorium as patients of the Sunderland corporation, and of these 46 are dead, 11 well, 8 fairly well, 11 cannot be traced, 1 is ill, and 4 are still in the sanatorium. Of the 46 who died after leaving the sanatorium the average duration of life after discharge was 2 years 2 months. The corporation grants certificates to farmers who comply with the regulations as regards air-space and cleanliness and who keep only cows which have yielded negative results with tuberculin. An interesting observation was made with respect to a farmer who clipped the tails and hind-quarters of his cows and groomed the animals daily, with the object of lessening the amount of pollution, with the result that samples of milk which before this practice showed bacillus coli to the extent of 10,000 per cubic centimetre, subsequently yielded only 10 bacilli coli per cubic centimetre. Tubercle bacilli were found in 7·4 per cent. of the total number of samples of milk examined in 1909.

Plympton St. Mary Rural District.—The council of this district has for several years sent tuberculous patients to one of the Devon sanatoriums, and Mr. S. Noy Scott observes as a

result of his experience that a comparison of the cases sent to the sanatorium with those who remained at home has not yet convinced him that sanatorium treatment leads to such good results as some persons believe. He does not, he says, wish to belittle the great good which sanatoriums have done in impressing upon the public the enormous value of fresh air, good food, and rest in the treatment of phthisis, but he enters a protest against placing an undue reliance upon expensive treatment in these sanatoriums when the fresh air, good food, and rest can be obtained at home. In his judgment the cases occurring amongst the working-classes treated at home live as long as those treated elsewhere. But, of course, it has to be borne in mind that as regards urban communities the fresh air cannot be obtained at home, nor is it easy to carry out a proper course of living without the control secured at sanatoriums.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 7933 births and 4213 deaths were registered during the week ending Oct. 22nd. The annual rate of mortality in these towns, which had been equal to 12·8 and 13·1 per 1000 in the two preceding weeks, declined again last week to 13·0. During the first three weeks of the current quarter the death-rate in these towns averaged 13·0 per 1000. In London the death-rate during the same period, calculated on the probably over-estimated population, did not exceed 12·6 per 1000. The lowest reported annual death-rates last week in these 77 towns were 6·2 in King's Norton, 6·3 in Hornsey, and 7·2 in Walsall and in Handsworth; the rates in the other towns ranged upwards to 19·3 in Wigan, 19·7 in Merthyr Tidfil, 19·8 in Brighton, and 21·4 in Middlesbrough. In London the reported death-rate last week did not exceed 12·6 per 1000. The 4213 deaths from all causes registered in the 77 towns last week showed a decline of 48 upon the number returned in the previous week, and included 504 which were referred to the principal epidemic diseases, corresponding with the number in the previous week; of these 504 deaths, 296 resulted from diarrhœa, 75 from measles, 42 from diphtheria, 37 from whooping-cough, 28 from enteric fever, and 26 from scarlet fever, but not one from small-pox. The mean annual rate of mortality from these diseases in the 77 towns last week was equal to 1·6 per 1000, against 1·5 and 1·6 in the two preceding weeks. No death from any of these epidemic diseases was registered last week in Leyton, Coventry, Ipswich, Warrington, or in six other smaller towns; the annual death-rates therefrom ranged upwards, however, to 4·1 in Southampton, 4·2 in Grimsby, 4·9 in Burnley, 5·3 in Bury, and 7·5 in Brighton. The deaths attributed to diarrhœa in the 77 towns, which had declined in the seven preceding weeks from 527 to 296, were again 296 last week; the highest annual rates from these causes in the 77 towns last week were 2·9 in Middlesbrough, 3·0 in York, 3·6 in Brighton, and 4·4 in Burnley. The 76 fatal cases of measles showed a further marked increase upon recent weekly numbers, and caused the highest annual rate of 3·6 per 1000 in Brighton. The deaths referred to diphtheria, which had been 42 and 34 in the two previous weeks, rose again to 42 last week, of which 15 occurred in London and its suburban districts, 3 in Southampton, and 2 both in Reading and in Stoke-on-Trent. The 37 fatal cases of whooping-cough showed a further decline from the numbers in recent weeks; they included 9 in London and West Ham, and 3 in Manchester and in Sheffield. The deaths referred to enteric fever, which had been 38, 21, and 43 in the three preceding weeks, declined again last week to 28, of which 4 were returned in Plymouth and Devonport, 3 in Manchester, and 2 in Birmingham. The 26 fatal cases of scarlet fever were 7 below the number in the previous week, but included 4 in Stoke-on-Trent and 2 in Barry. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased in the nine preceding weeks from 1423 to 1745, had further risen to 1792 on Saturday last; 231 new cases of this disease were admitted to these hospitals during last week, against 249, 245, and 234 in the three preceding weeks. The 1176 deaths from all causes in London last week included 194 which were referred to pneumonia and other diseases of the respiratory system, showing an increase of 32 upon the number in the previous week, and exceeding by 10 the corrected average number in the corresponding week of the five years 1905–09. The causes of 23, or 0·5 per cent., of the deaths registered during last week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in London (and in its eight suburban districts), Manchester, Leeds, Bradford, Newcastle-on-Tyne, and in 49 other smaller towns; the 23 uncertified causes of death in the 77 towns included 3 in Birmingham and in Gateshead, and 2 each in Liverpool, Leicester, St. Helens, Warrington, and Sheffield.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 821 births and 470 deaths were registered during the week ending Oct. 22nd. The annual rate of mortality in these towns, which had been equal to 14·4 and 12·9 per 1000, in the two preceding weeks increased slightly to 13·0 in the week under notice. During the first three weeks of the current quarter the death-rate in these eight towns averaged 13·4 per 1000, and exceeded by 0·4 the mean rate during the same period in the 77 largest English towns. The annual death-rates in the eight Scotch towns last week ranged from 8·4 and 12·4 in Leith and Aberdeen, to 15·6 in Dundee and 16·8 in Perth. The 470 deaths from all causes in the eight towns last week exceeded by 2 the number returned in the previous week, and included 47 which were referred to the principal epidemic diseases, against 83, 69, and 63 in the three preceding weeks; of these 47 deaths, 25 resulted from diarrhœa, 13 from diphtheria, 4 from whooping-cough, 3 from "fever," and 2 from scarlet fever, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the eight towns last week was equal to 1·3 per 1000, the rate from the same diseases in the 77 English towns being 1·6 per 1000. The deaths attributed to diarrhœa in the Scotch towns, which had been 51, 40, and 29 in the three previous weeks, further declined last week to 25; they included 10 in Glasgow, 4 in Edinburgh, in Dundee, and in Paisley, and 2 in Greenock. The 13 deaths referred to diphtheria showed a decline of 2 from the number in the previous week; 5 occurred in Dundee, 4 in Glasgow, and 3 in Perth. The fatal cases of whooping-cough, which had been 8 and 10 in the two preceding weeks, declined to 4 last week, of which 2 were returned in Glasgow. The 3 deaths referred to "fever" included 2 fatal cases of enteric and 1 of cerebro-spinal meningitis; 1 each occurred from enteric in Aberdeen and Paisley, and the fatal case of cerebro-spinal meningitis in Glasgow. The 2 deaths from scarlet fever occurred in Greenock and Perth. The deaths referred to diseases of the respiratory system in the eight towns, which had been 72 and 69 in the two preceding weeks, increased to 80 last week, but were 4 below the number in the corresponding week of last year. The causes of 10, or 2·1 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death last week did not exceed 0·5 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 619 births and 384 deaths were registered during the week ending Oct. 22nd. The mean annual rate of mortality in these towns, which had been equal to 15·9 and 16·9 per 1000 in the two preceding weeks, further rose to 17·4 in the week under notice. During the first three weeks of the current quarter the annual death-rate in these Irish towns averaged 16·7 per 1000; the mean rate during the same period did not exceed 13·0 in the 77 largest English towns and 13·4 in the eight principal Scotch towns. The annual death-rate during last week was equal to 20·7 in Dublin, 16·0 in Belfast, 15·8 in Cork, 8·4 in Londonderry, 5·5 in Limerick, and 29·2 in Waterford; the mean annual death-rate last week in the 16 smallest of these Irish towns was equal to 17·0 per 1000. The 384 deaths from all causes in the 22 town districts last week showed a further increase of 10 upon the numbers returned in the two preceding weeks, and included 42 which were referred to

the principal epidemic diseases, exceeding by 11 the number in the previous week; these 42 deaths were equal to an annual rate of 1·8 per 1000, the rate from the same diseases last week in the 77 English towns being 1·6, and in the eight Scotch towns 1·3. The 42 deaths from these epidemic diseases in the Irish towns last week included 20 from diarrhœa, 5 from measles, 5 from whooping-cough, 4 from enteric fever, 3 from diphtheria, 2 from typhus, and 1 from scarlet fever, but not one from small-pox. The 20 deaths attributed to diarrhœa exceeded the number in the previous week by 4, and included 8 in Dublin, 8 in Belfast, and 2 in Londonderry. The 5 fatal cases of measles occurred in Belfast, and the 5 of whooping-cough in Dublin. Of the 4 deaths from enteric fever 2 were returned in Dublin and 2 in Sligo; and the 2 fatal cases of typhus occurred in Dundalk. The deaths in the 22 towns last week included 63 which were referred to pneumonia and other diseases of the respiratory system, against 44 and 66 in the two preceding weeks. The causes of 5, or 1·3 per cent., of the deaths registered last week in the Irish towns were not certified; in the 77 English towns the proportion of uncertified deaths last week did not exceed 0·5 per cent., while in the Scotch towns it was equal to 2·1 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeons: F. Bradshaw to Chatham Dockyard, and F. D. Lumley to the *Warrior;* T. Austen to Bermuda Hospital and Dockyard, and F. J. Burns to the *Vernon*. Staff-Surgeons: E. R. L. Thomas to the *Victory*, additional, for disposal; E. O. B. Carbery to the *Calypso*. Surgeons: G. F. Syms to Malta Hospital; F. R. Featherstone to the *Exmouth;* and J. H. Wright to the *Vivid*, additional, for disposal; G. Nunn to the *Shearwater*, additional, and to the *Shearwater*, on recommissioning; and R. H. McGiffen to the *Halcyon*, additional, for the *Leda*, on recommissioning.

ROYAL ARMY MEDICAL CORPS.

Colonel M. W. Kerin, C.B., principal medical officer of the Bareilly, Garhwal, and Dera Dun Brigades, has been appointed to officiate as Principal Medical Officer of the Seventh (Meerut) Division during the absence on leave of Colonel F. B. Maclean. Lieutenant-Colonel R. R. H. Moore has been appointed to the Medical Charge of the Military Hospital at Bulford Camp, Salisbury Plain. Lieutenant-Colonel A. F. Russell, C.M.G., commanding the Military Hospital at Malta, has arrived home on leave. An exchange on the roster for service abroad has been sanctioned by the War Office between Lieutenant-Colonel C. Birt and Lieutenant-Colonel R. H. Hall. Lieutenant-Colonel J. M. Irwin, on vacating his appointment as assistant director of medical services, has embarked for a tour of service in North China. Lieutenant-Colonel R. W. Wright, from Shoeburyness, has been posted for service in the Eighth (Lucknow) Division. Lieutenant-Colonel G. F. Gubbin, from Colaba, has been reverted to the home establishment. Lieutenant-Colonel G. H. Barefoot has been selected for the command of the Station Hospital at Ranikhet. Major T. J. Lenehan, having notified his intention to retire from the service, has had his name removed from the roster for service abroad. Major W. Hallaran has been posted to the Northern Army, India, for duty in the Third (Lahore) Division. Major C. M. Fleury, from Tidworth Park, has embarked for a tour of service in South China. Captain W. C. Croly, from Colchester, has taken over charge of the Military Hospital at Ipswich. Captain H. E. M. Douglas, V.C., on completion of his course of instructon at the Royal Army Medical College, London, has been posted to Woolwich. Captain E. V. Aylen has been appointed Specialist in Dermatology and Venereal Diseases to the First (Peshawar) Division. Captain J. du P. Langrishe has been transferred from Poona to Mhow. Captain W. F. Tyndale, C.M.G., has taken over duty in the Dublin District. Captain W. W. Browne has been posted to Colchester and appointed a Specialist in Health Efficiency and Medical Adviser on the Gymnastic Staff. Captain F. G. Garland, from Conway, has joined at Manchester. Captain C. D. Myles and Captain M. C. Beatty have been posted to the Southern Command from the Royal Army Medical College. Captain S. B. Smith, on completion of duty at Ticknock Camp, has joined at Dublin. Captain R. J. Franklin, Captain R. M. Ranking, Captain T. S. Coates, Captain D. Ahein, and Captain J. H. Duguid, on completion of their promotion course in London, have been appointed to the Cork District. Lieutenant H. V. B. Byatt has been transferred from Khandalla to Poona. Lieutenant F. W. M. Cunningham, from Donard Camp, has taken up duty at the Curragh. Lieutenant H. G. Robertson, from Sheffield, has joined at Derby. Lieutenant C. M. Nichol, from Colchester, has been appointed to the medical charge of the Military Hospital at Weedon during the absence on leave of Captain W. R. Douglas.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel F. C. Reeves, of the Madras Establishment, has been permitted to revert from civil to military employment. Lieutenant-Colonel R. E. S. Davis, Bombay, has arrived home on leave from India. Major T. H. Symons has embarked for India. Major A. Gwyther, civil surgeon at Saran, has been appointed a Civil Surgeon of the First Class in India. Major J. H. McDonald has been selected to act as Deputy Sanitary Commissioner of the Southern Registration District during the absence on privilege leave of Major C. R. Bakhale. Captain E. C. Hudson has been appointed Officiating Health Officer at Simla, vice Captain H. M. Mackenzie, who has taken over the chair of Physiology in the Medical College, Calcutta, during the absence of Captain D. McCay on furlough. Captain M. Mackelvie, officiating civil surgeon of Puri, has been appointed to act as Civil Surgeon of Darbhanga. Captain G. C. L. Kerans has been appointed Specialist in Ophthalmology to the Eighth (Lucknow) Division. Captain W. F. Brayne, special plague medical officer, Pegu Division, has been granted three months' privilege leave. Captain P. K. Tarapore has been appointed to officiate as Superintendent of the Mandalay Central Jail during the absence on leave of Captain A. W. Greig. Captain H. W. Pierpont has joined the Central Provinces and has been posted to Chanda as Civil Surgeon. Captain A. S. Leslie has been appointed as Superintendent of the Insein Central Jail in place of Captain H. H. G. Knapp transferred. The services of Captain C. A. Sprawson and Captain W. Lapsley have been placed permanently at the disposal of the Government of the United Provinces. Lieutenant A. M. Jukes, in charge of the Brigade Laboratory at Shillong, has been appointed a Specialist in the Prevention of Disease.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned Lieutenants are confirmed in their rank: George H. Stevenson, Eben S. B. Hamilton, and Leopold T. Poole. The undermentioned to be Lieutenants (on probation): Cadet-Sergeant Charles John Simpson, from the Belfast University Contingent, Officers Training Corps (dated Sept. 10th, 1910); Aubrey Gardner Brown (dated Sept. 10th, 1910); and David Turnbull Richardson (dated Sept. 30th, 1910).

TERRITORIAL FORCE.

Royal Army Medical Corps.

Welsh Border Mounted Brigade Field Ambulance: Lieutenant Douglas C. L. Orton to be Captain (dated Sept. 15th, 1910).

For attachment to Units other than Medical Units.—Frederick George Harper to be Lieutenant (dated August 12th, 1910).

Attached to Units other than Medical Units.—Lieutenant John Aitken to be Captain (dated Sept. 15th, 1910). Lieutenant Arthur L. B. Green resigns his commission (dated Oct. 26th, 1910). Captain William Moreland Haladay Spiller, Royal Army Medical Corps, to be an Adjutant of a School of Instruction (dated Oct. 12th, 1910).

DEATHS IN THE SERVICES.

Lieutenant-Colonel Robert Anderson, R.A.M.C. (retired), on Oct. 24th, at Bury St. Edmunds. He entered the service in 1868 as assistant surgeon, became surgeon in 1873, surgeon-major in 1880, and reached the rank of lieutenant-colonel in 1888, and retired in 1893. He served in the Egyptian War of 1882, when for part of the time he was in medical charge of the right wing of the Ismailia Palace Hospital (medal and Khedive's Star). He was elected Mayor for Bury St. Edmunds in 1907.

Correspondence.

"Audi alteram partem."

CAN FISH CONVEY THE BACILLUS OF CHOLERA?

To the Editor of THE LANCET.

SIR,—In an annotation under this heading last week you refer to Professor Gosio's researches into the question, the results of which will certainly be awaited with interest.

In the meantime may I say that when a borough medical officer of health I used to make careful inquiries into all the possible channels of infection of typhoid fever when cases were notified, and, among other things, into the question of ordinary cooking fish. In two or three instances in which a cook was the only patient in the house, I could not trace any evidence of infection by water, watercress, shell-fish, flies, contact with suffering patients or carriers, &c. I formulated the theory that infection had possibly been conveyed by fish caught in undoubtedly polluted waters, or which had lain on the stall of a fishmonger who was a vendor of doubtful shell-fish, and that the cook had received infection from the fish, which had been infected either directly in polluted waters or indirectly by the fishmonger handling first, say, polluted infected oysters, and then, without washing his hands, handling the fish. It generally seemed more probable that the fish had *imbibed* infection directly from the polluted waters. I accounted for the fact that the cook was the only person in the household to develop typhoid fever because she handled and *gutted* the fish, while other members of the family only partook of the fish after it had been gutted, cleaned, and either boiled or fried in boiling oil or other grease. I imagined that the cook's hands had become infected by the fish in the raw state and that she had then conveyed infection (typhoid bacilli) to her mouth by unwashed hands. I think this mode of infection both for typhoid fever and cholera and allied diseases (paratyphoid, diarrhœa, &c.) is not only possible but actually does occur occasionally, but I also think it is only occasionally. In other words, I think ordinary fish from polluted waters have in my experience actually been the vehicle of infection; but at the same time I consider it a comparatively rare means of transmission limited only to those who handle and prepare fish in the uncooked state, and amongst these only to a comparatively small proportion who neglect to wash their hands after such handling or preparation and inadvertently suck their fingers or carry other food to their mouths with unwashed hands. Of course, were the fish not properly gutted or cooked other persons might suffer also.

I am, Sir, yours faithfully,

Norwich, Oct. 24th, 1910. J. T. C. NASH.

BODY METABOLISM IN CANCER.

To the Editor of THE LANCET.

SIR,—In your issue of Oct. 1st appeared a report by a committee of the British Association upon the body metabolism in cancer. Acting upon an assumption that the onset of malignancy has an intimate relationship with diminished or perverted function of the reproductive organs, the liability to the malady waxing as the reproductive activities wane, the committee has treated inoculated mice (which sex?) with spermin and orchidin, and with fresh testicular emulsion and extract. The physiological principle involved in the experiments is that the internal secretions of reproductive organs may exert some restraining and coördinating influence upon the growth of somatic tissue elements. Now Beatson and others tried oöphorectomy—accompanied by the administration of thyroid extract—in human mammary cancer; and the results, such as they were, proved the supposition that the internal secretion of the ovaries encourages the mammary cancer. Thus there are two opposing principles serving as a basis for treatment. On the one side it is hoped to retard malignant growth, arising presumably from any epithelial tissue, by the supply of sexual secretions; on the other it is hoped to retard malignant growth arising from a secondary sexual organ, by the withdrawal of such a secretion. But can the committee be sure that the substances used will produce their effect as internal secretions acting directly upon the growths and not in other capacities?

It has been suggested that spermin plays the part of a catalytic ferment which regulates oxidation in the tissues, as witness its use in obesity. And therefore it may have a general effect as a ferment upon the blood serum, and in this way induce conditions unfavourable to malignant growth. Leucocytosis may be expected to follow the administration of organ extracts, and almost certainly of spermin. To induce this state has long been a purpose in treating cancer, though seldom or never has there been more than temporary amelioration. Leucocytosis may not be a factor in the committee's experiments, but it is worth noting that the varied results given in the report are just what one expects with leucocytotic agents.

I would remark that the possible effect on the metabolism of the serum exercised by leucocytes receives hardly any attention. They are unicellular glands, and speaking generally and without reference to a particular kind, an agent that increases their number and probably also their activity may thus indirectly alter the metabolic balance of the serum. And this is one of the channels through which we hope to combat malignancy.—I am, Sir, yours faithfully,

W. T. GIBSON, A.R.C.S.

Newcastle-upon-Tyne, Oct. 23rd, 1910.

A POINT IN PHARMACOLOGY.

To the Editor of THE LANCET.

SIR,—Senile flatulence is a complaint both common and difficult to cure, especially in persons who are not constipated. Some time ago I noticed the good effect produced by powdered cloves given by an old nurse after my fluid preparation of the same spice had failed. I saw that the spirit of cloves was absorbed in the stomach but that the woody fibre passed on to the seat of the complaint. Acting on this, I procured from Messrs. Oppenheimer and Co. some 5-gr. capsules of powdered cloves coated in keratine. They acted admirably and I recommend their trial. I think there are other drugs which might be used in a powder and keratine coated—e.g., assafœtida. Aloes and assafœtida might be given in keratine instead of as a pill, also ferrum redact. in gastric ulceration. I think we might well revise our B.P. pill list and replace many of them by keratine-covered powdered drugs.

I am, Sir, yours faithfully,

Pontrilas, near Hereford, Oct. 24th, 1910. L. L. THAIN.

THE EDUCATION OF THE STUDENT OF MEDICINE.

To the Editor of THE LANCET.

SIR,—I have read Professor Howard Marsh's admirable and thoughtful address to the students at Leeds, and I think every teacher at hospitals ought most seriously to consider Professor Marsh's suggestions and impress more upon the students the cardinal points in their lectures, and not to enter into so much of the minutiæ, comparatively not so important. Of course, this cannot be done unless the different examining boards are willing to take these suggestions into consideration and vary their questions accordingly. No doubt this is a matter that ought to be well considered by the various governing bodies, and it is well worth the attention of the whole profession. So many students now fail at the examinations through the examiners insisting on their answering correctly minor and unimportant questions.

I am, Sir, yours faithfully,

West Cromwell-road, S.W. W. CUNNINGHAM CASS.

MEDICAL OFFICERS OF SCHOOLS ASSOCIATION.—A general meeting will be held at 11, Chandos-street, Cavendish-square, on Nov. 3rd, at 4.30 P.M., when Mr. R. Denison Pedley will read a paper on "The Care of Teeth in School Children." Dr. Stanley Colyer and others will take part in the discussion.

SANITARY PROGRESS AT COPENHAGEN.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

ASTRIDE between the Baltic and the North Sea, Copenhagen claims yearly an increasing number of visitors. Commercially it is of even greater importance on account of the enormous quantity of Danish butter shipped from Copenhagen and consumed in Great Britain. And we also receive a considerable amount of bacon and of meat—notably beef—from Denmark. Therefore, whether by reason of the numerous tourists who visit the country or of the foodstuffs we receive from Denmark, we have a direct interest in the sanitary administration of Copenhagen. Here the cattle are killed for exportation, here the butter and bacon are stored, and here our tourist and holiday folks land. Under these circumstances, it is satisfactory to know that, in respect to sanitary administration and legislation, Denmark is fully entitled to a place among the most progressive nations. Indeed, in some respects she has taken the initiative in giving a good example. Thus it was in Denmark that the compulsory notification of infectious diseases was first enforced. A law to this effect came into operation as far back as 1861. In regard to tuberculosis, Denmark is again in advance. The notification of tuberculosis has been rendered compulsory since 1905. Further, it should be noted that practitioners have to report all the cases they treat so that the town authorities may know what diseases are prevailing and what is the general state of health; but the reports need only give the names and addresses of infectious cases. If this is not done, and the service is gratuitous, the medical practitioner may be punished, so that medical service is not unduly rewarded.

Fresh Fish.

The medical staff attending to all health matters in Copenhagen has its headquarters at the town-hall and is under the direction of Dr. E. M. Hoff, who is Dean, or, as we should say, chairman, of the Royal Health Council of Denmark. To Dr. Hoff I am indebted for much of the information I am able to give and for most courteous and helpful advice. Altogether there are nine medical officers attached to the municipal services and two veterinary surgeons. Of course, the medical staff consults with the engineering staff in regard to questions of drainage, water-supply, &c. In this latter respect I may say that great satisfaction is expressed. The water-supply from artesian wells is ample and is believed to be quite pure. Formerly the sewers fell into the sea by numerous outlets at the nearest convenient points. In 1892 a general sewerage scheme was planned and subsequently carried out. This consisted of building a main collecting sewer along the whole shore-line. At a certain point an outfall from this main sewer was constructed so as to convey the sewage to a distance of two kilometres from the shore out into the open sea. Thus there is no longer any contamination of the harbour or the sea front. This not only puts an end to the nuisances that used to arise, but enables boats full of live fish to come close to shore and right into the town by means of the salt-water canals. In this manner at least the smaller fish are kept alive till the moment they are sold. Any number of wooden boats are pierced with holes and filled with fish; these boats just float on the surface of the water, and the living fish is taken out of them when wanted. But as everyone cannot go to the water's edge to buy fish, there are water tanks on wheels and the live fish is brought to the doors of the people's houses. Never before have I been in a town where all the fish, whether cheap or dear, is so beautifully fresh. The principal fish market was built by the municipality and is let to a wholesale fish salesman. It is a delight to see how clean and bright these premises are kept. There is no spreading the fish on slabs so that dust and dirt may settle on them. Very pretty tessellated tile tanks are filled with running water, and here the smaller fish swim about. The larger fish, such as cod or halibut, are too cumbersome to keep alive, and are therefore placed in the cold-storage rooms.

A Technical School for Servants.

Not only are the fish fresh, but they are generally very well, sometimes even artistically, cooked. At Copenhagen it seems to be understood that good food badly cooked is apt to be disappointing. In any case the domestic servants' trade union has instituted a school where members of the union are taught how to be clean and neat, how to sew, to wash and starch, but, above all, how to cook. A little restaurant is attached to this school where anyone can have a cheap meal, thus giving the pupils an opportunity of exercising their art. The trade union, while insisting that a good servant shall earn from 25 to 30 kroner (a krone equals 1*s.* 2*d.*) per month and pay half a krone subscription to her union, does at the same time endeavour to render her fully competent to accomplish her work. Also, by providing sleeping accommodation, it helps to prevent servant girls falling into bad company or suffering undue hardships when out of employment. It is a pity, however, that the sleeping rooms are not more spacious. The law insists on a minimum of 300 cubic feet per bed, and the dormitories I visited barely gave more than this very scant allowance. This perhaps does not much matter in summer when the windows can be kept open, but in winter they are shut and there is no other means of ventilation. Nevertheless, this servant girls' school and home is an admirable institution, and it is all the more likely to succeed in turning out competent students of domestic economy as it is due to the initiative of the servants themselves and not to patronage coming from outside their own ranks.

Cooking at Sea.

In the same way there is an old frigate moored in a canal close to the most fashionable centre of the town. Here there is a school for ships' cooks. On board a ship with the limited space such as prevails at sea young cooks try their 'prentice hands at making dishes such as are served to passengers on sea voyages. There is an awning on the deck, tables are laid out, and numerous inhabitants of Copenhagen take their meals there, for they are both varied and inexpensive. Thus fully qualified cooks are being prepared for the sea, and it is not necessary to point out that, whether at sea or on shore, efficient cooking not only adds to the joys of life but is a very necessary aid to digestion. In this respect, just as travellers on the Mediterranean endeavour to obtain a berth in an Austrian-Lloyd steamer because of the superior cuisine on that line, so connoisseurs bound for Copenhagen and the Baltic seek to secure a passage on the *Titania* of the Finland Line. Not only is she comfortably furnished, but the chef is renowned among epicures. The 20 or so *smörgasbords*, or appetisers, placed at the disposal of the passengers before meals are marvellously and wondrously prepared. To pick and choose amidst this variety of stimulating flavours should suffice to provoke an appetite even among the most jaded and recalcitrant dyspeptics. As for the ordinary and robust traveller, it means that he will not fail to "eat through his ticket," as the Americans say.

Cheap and Wholesome Bread.

Of far more importance, however, than these delicacies are such articles of primary necessity as bread and meat. It has always been a matter of the greatest difficulty to maintain a high standard of purity in the food-supply. Nor is this entirely the fault of unscrupulous tradesmen. The purchaser is for ever clamouring for cheapness and is too apt to patronise those who lower their prices without inquiring at what sacrifice this reduction is achieved. In this never-ceasing conflict of interests between the purchaser and the tradesman some impartial umpire is needed to regulate market prices. At Copenhagen those who were in the greatest need of some such protection have themselves succeeded in creating the necessary check. It was during the years 1884 to 1886 that the exaggerated charges made for bread brought matters to a crisis. The organised workmen succeeded in borrowing 4000 kroner and established a small coöperative bakery, where they made pure wholesome bread and sold it among themselves at a price that would just pay the cost of production. Thus they produced much better and cheaper bread than the bakers. The enterprise grew. To-day the assets of the bakery are estimated at half a million kroner. To deliver the bread 30 horses and 19 carts are necessary. Fifty-three persons are employed at the bakery and are paid the highest wage in the trade. They work for only eight hours a day and have a week's holiday per year with full wages while away. The bakery is provided with a bathing-room and cloak-room, so that the journeymen bakers can wash thoroughly

and change their clothes before beginning work. The most recent machinery is employed, and next to the bakery stand vast flour mills. Thus not only is a further economy realised by grinding their own grain, but the coöperators know exactly what sort of flour they are using. When I visited the mill I found the millers were mixing Danish rye with small Russian and large German rye so as to secure a good medium flour. The wheat they use for the most part comes from America. Looking at all this from the health point of view the benefit is twofold. First, the bread made is more clean and wholesome, and this example has served to raise the standard of quality throughout the trade. Then the competition has compelled a general lowering in the price of bread. Though the cost of the raw material has greatly increased of late years and higher wages are now paid, nevertheless the price of bread is lower than it was before the coöperative bakery was established. The yearly turnover is about 700,000 kroner, and this is sufficient to steady the prices of the whole trade.

Meat, Milk, and Beer.

The coöperators' next step was to turn their attention to the meat-supply, and they have succeeded in establishing a business which by competition also helps to lower and to check the price of meat throughout Copenhagen. They send their own buyers to the cattle market and then conduct the animals bought to the municipal slaughter-house. After slaughter the meat thus obtained is sold in four well-appointed shops. Altogether a meat business equal to an annual turnover of 300,000 kroner has been established entirely in the public interest.

In regard to the milk-supply the workers have not done so much to influence the general market. A great reform in the milk trade has been achieved, and this I hope to describe at length, but it was not due to the initiative of the workmen's coöperative societies. Nevertheless, there is a large workmen's coöperative milk-supply society. At the town-hall, where all the milk is analysed, I was told that the milk of the coöperative society was very good. This workmen's organisation, after 12 years of existence, now employs 128 grown-up persons and 230 boys to assist in delivering the milk. They sell 8,000,000 litres of milk and 85,000 kilogrammes of butter per annum.

Finally, we have the workmen's coöperative brewery which has an establishment worth 259,966 kroner, employs 150 persons, and sells so much beer that it requires 31 horses and 16 carts to deliver it to the customers. On visiting this brewery I was able to verify that the bottles and casks were properly sterilised before they are used. There is a portable electric light which can be put inside the casks to see that no foreign object is within and that they are quite clean. Though the brewery seemed to me satisfactory I could not find anything new. The workers were better paid, and that should help to keep them in better health, but no attempt was made to demonstrate that the beer was purer, more nutritious, less narcotic, or that it was in any other way superior to the beer sold in the ordinary trade. One thing, however, was insisted upon—namely, that they brewed a very large quantity of what is called anti-alcohol beer. Like many other temperance drinks—ginger-beer, to wit—it does contain some alcohol, but only 1½ per cent. per volume. The other beers brewed are pilsener at 3 to 3½ per cent. of alcohol, lager at 4, and stout at 5 per cent. of alcohol. Considering that mild English ales very frequently contain more than 8 per cent. of alcohol, all these Danish beers may be considered, if not temperance, at least very temperate drinks. But the great point is that we have here an institution which supplies beer to a large section of the population and which has no interest to serve in adulterating this popular beverage.

Higher Standard of Life and Lower Mortality.

While the food-supply of Copenhagen has been improved by the competition of the coöperative societies and the prices have been kept down, the air-supply has also been ameliorated. The sea-front, as already explained, is no longer contaminated by sewage. Within the city some of the worst slums have been pulled down. Streets have been widened and the extension of business in the centre of the town has converted the sites of former slums into offices and warehouses. At the same time the town council has been buying up land in the outskirts and laying out new districts for habitation. The night inspection of lodging-houses has become more rigorous and new sanitary by-laws are in contemplation to render such control still more severe. The system of poor relief has been improved and the various funds that give out-of-work allowances have received subventions from the municipality. Thus with better sanitation, less overcrowding, pure water, cheaper, less adulterated food, higher wages, shorter hours of labour, and more generous relief for cases of distress the health of Copenhagen has greatly improved of late. Last year the death-rate only amounted to 14 per 1000, but it would be unfair to take this exceptional figure; it would be nearer the mark if the average general death-rate is estimated at about 15 per 1000. The infant mortality is also a good indication of the sanitary and social conditions of a town. The average mortality within the first year of life, from 1882 to 1886, was 17·6 for the legitimate and 35·3 for the illegitimate infants, making a total of 21·1 per 100 born. The average percentage from 1902 to 1906 was 12·8, 20·3, and 14·4. While last year among the legitimate infants the percentage of deaths was only 9·4, among the illegitimate it was 15·5, making a total of both legitimate and illegitimate of 10·9 per cent. The same satisfactory story may be recorded concerning pulmonary tuberculosis. In 1870 the deaths amounted to nearly 400 per 100,000 of the population. Without any fluctuation the fatalities from this disease have decreased every year till in 1908 they had fallen to 145 per 100,000.

Abolition of the Contagious Diseases Act.

By the side of these successes there is one measure that does not give much good promise. In 1906 the Contagious Diseases (Women) Act was abolished. It is true that other and even more drastic regulations were introduced, but the result is very doubtful. At the same time that the examination of public women was abandoned it was decided to enforce severe punishments for anyone, whether man or woman, who could be convicted of infecting a person. To-day if a man complains to the police that he has been infected by a woman the police can arrest the woman, force her to be examined, and if it can be proved that she knew she was infected she will be criminally convicted. The authorities provide printed forms to all medical practitioners, and they are advised to give these forms to their patients. Till such patients receive a certificate that they are cured it is a criminal offence to have sexual intercourse. Punishment is inflicted under Clause 181 of the Penal Law of Feb. 10th, 1866, which is a sort of codification of former laws. The clause in question says:—

> If anybody who knows or supposes he or she has venereal disease has sexual connexion with another he or she will be punished with simple imprisonment or, under special conditions, with hard labour.

Thus, not long ago a scandal was occasioned by the arrest of a young man who belonged to a good family. He had seduced and infected several girls, and was therefore condemned to three years' hard labour, not for seducing but for infecting his victims. On the other hand, while thus menaced with severe penalties, all those who are infected have every opportunity provided of getting cured. The town council has appointed and pays 12 medical practitioners to attend gratuitously on any man or woman suffering from venereal disease. At first these medical men were paid 3 kroner (or 3*s.* 6*d.*) for the first visit and 1 krone for the subsequent visits, but now they are paid a regular salary of 2000 kroner per annum. They earned much more under the former method of payment. The present system consists, therefore, of facility of treatment on the one hand and severity of punishment on the other, but it seems altogether insufficient. Where poverty is the cause of prostitution it does not provide the money needed, nor does it take into consideration that the victims, however they may suffer, naturally shrink from denouncing those by whom they have been contaminated. In any case, the results obtained are not encouraging. It may justly be said that the statistics do not extend over a sufficiently long period to form a definite opinion, but so far as they go they are not favourable. Three years have elapsed since the freedom of prostitution was proclaimed and I give the figures for the three years preceding 1906 and the three years following. Before the new law the number of cases of gonorrhœa per 10,000 of the population of Copenhagen was 125, 115, and 114. In 1906, the year of transition,

there were 112 cases; and in the three years following, when the new law was in force, there were 129, 142, and 132 cases. With regard to venereal sores, there were 11 per 10,000 of the population for each of the three previous years, 18 during the year of transition, and 17, 26, and 23 for the years 1907-08-09. Now, the most important figures, those that relate definitely to syphilis, are scarcely less discouraging. The cases of syphilis per 10,000 inhabitants for the three years preceding the new law were 43, 30, and 32, during the year of transition 33, and during the three years following 45, 56, and 49.

It does seem as if among the many successful things done and described above, we have in this last attempt at reform a measure that gives every promise of failure.

(To be continued.)

THE RECENT ARMY MANŒUVRES IN THE SOUTH OF ENGLAND.

(BY A SPECIAL CORRESPONDENT.)

THE annual training of the military forces, which has only recently concluded, furnishes many particulars of more than ordinary medical interest, as the numbers of men employed and their association with army reservists, special reservists, and the Territorial Force has been the first attempt made by the War Office to test the working of Mr. Haldane's new scheme of army administration.

General Arrangements.

The summer training for the majority of the regular forces commenced in August in various localities. During the first weeks in September these troops were more or less concentrated under divisional control of their divisional commanders and employed as such. From Sept. 15th to 17th the 3rd and 4th divisions assembled for inter-divisional manœuvres in Somersetshire at concentration camps. Army manœuvres on a large scale followed, and these took place in the vicinity of Salisbury between Sept. 19th and 24th. Camp equipment was taken on the usual manœuvre scale, two blankets and one waterproof ground sheet per man being carried in the second line of transport. Each unit was provided with one of the new filter water-carts drawn from the mobilization equipment. The dress worn by all regimental officers and men was drill order service dress, the directing staff alone wearing blue undress uniforms (patrol jacket) and black leather leggings and ankle boots. No restrictions were placed by the general officer commanding-in-chief (Lieutenant-General Sir C. W. H. Douglas, K.C.B.) on any of his troops entering public-houses. He published an order reminding all ranks that the inhabitants of the districts in which the training and manœuvres took place would in future judge the army by the conduct and bearing of the soldiers whom they met during the manœuvres, and that it was therefore in the power of the troops to bring credit or discredit on their units and on the service to which they belonged. It is satisfactory to record that the behaviour of the troops was excellent. March discipline was also satisfactory and was strictly observed as being of the highest importance in the interests of efficiency and for the avoidance of unnecessary fatigue to the men. The following rules were enforced:—

1. Cavalry and mounted infantry were not allowed to march along a road more than four horses abreast, particular care being taken to leave a space clear at one side for other traffic.

2. Infantry were not allowed to march more than four men abreast, including commanders and supernumeraries, the left side of the road being followed. In the event of men who were marching on the extreme left of the road being caused greater inconvenience than the others, after each halt the left-hand man of each section of fours was placed on the right when the march was resumed.

Regimental arrangements were made for the supply of beer and mineral water in casks for the troops on arrival in camp. No mineral water in bottles was allowed. The sale of beer was limited to one quart per man per diem and issued under strictly controlled regimental arrangements. Sergeants' messes and canteens were not allowed.

Sanitary Arrangements.

Sanitary detachments were detailed by each unit, as laid down in war establishments, and were placed at the disposal of the officers in medical charge of units. A proportion of each regimental sanitary detachment was detailed to accompany the advance party of the unit proceeding to fresh camping grounds in order to prepare latrines and urinals and have them ready for the troops when they marched into camp. All latrines were on the short trench system, each trench being 3 feet long by 1 foot wide and 1 foot deep and placed 2 feet 6 inches apart. When camps or bivouacs were occupied for more than one night an additional depth was excavated according to the number of days the camp was likely to be occupied. 2 per cent. of trenches were laid down as sufficient for one night and 5 per cent. for longer periods. Urine trenches or pits were dug as part of the latrine system alongside the latrines. All latrine and urine trenches were filled in before the camps or bivouacs were vacated and their sites carefully marked so that other units which might subsequently occupy the ground could avoid them, the turf which was carefully cut being properly replaced. Orders were issued that trenches were not to be dug round the tents or for cooking purposes to avoid disfigurement of the ground and thus avoid claims for compensation. Before leaving camps and bivouac grounds all rubbish, such as empty preserved-meat, milk, and other tins, bottles, hay bands, &c., were collected in heaps near the margin of the camping-ground, and after burning were left ready for subsequent removal; burial was not permitted. Manure from the transport lines was removed to separate sites on the boundary of camping-grounds and left there for the occupier of the land on which the troops encamped. A senior officer was detailed by the officer in command of troops at each camp or bivouac to remain behind until after the departure of the troops, to see that camps and bivouac grounds were left thoroughly clean and fit for immediate occupation by other troops should occasion arise.

The places at which water for the men to drink and wash at, as well as water for horses, were marked by distinguishing flags or notice boards by the Royal Engineers, after selection by the sanitary officers. No water was allowed to be used for human consumption except water that had either been filtered in the service filter water-carts or that drawn from the standpipes of town supplies. Sentries were placed over the watering places and were given written orders as to their precautionary duties. Washing in horse troughs was forbidden. One non-commissioned officer or a private of the Royal Army Medical Corps trained in water duties was detailed to supervise the working of each filter water-cart; he was assisted by a private detailed by the unit concerned.

Camps and bivouacs occupied for more than one night were as a rule hired; other camps occupied by troops within the manœuvre areas were taken up under the provisions of the Manœuvre Act of 1897.

Food-supplies.

As far as possible the food-supplies and the transport services were carried out under active service conditions, the responsibility for the same being delegated to the commanders of the divisions. The manœuvre ration counted from midnight to midnight and consisted of (1) meat, ½ pound fresh and ½ pound preserved; (2) 1 pound bread or ¾ pound biscuit; (3) grocery ration, supplied from Woolwich; and (4) contractor's, haversack and vegetable ration.

The ½ pound preserved meat was eaten for breakfast and the ½ pound fresh meat ration for dinner. In addition to the above, ½ pound of preserved meat was issued on the same day as the rations for Sept. 15th for use as an iron ration. Rations (including grocery, haversack, and vegetable ration) and forage ration were issued each evening for the next day's consumption and were carried as follows:—

(*a*) On the man:—1. 1 pound of bread or ¾ pound biscuit (less the portion consumed at breakfast). Every two men, 1½ pounds of wood in the form of a bundle of sticks 10 inches to 12 inches long, and 1 pound preserved meat (in a tin called the iron ration). The iron rations (½ pound of preserved meat per man) were issued in 1 pound tins and were only to be consumed under the orders of the company commander in the exceptional case of the cook's wagon not reaching the men. When so consumed the fresh meat cooked for dinner was to be eaten by the man in lieu of ½ pound preserved meat at breakfast the next morning. Under ordinary circumstances

the 1 pound preserved meat current ration was consumed at breakfast. 2. Grocery ration:—

⅝ ounce tea.
2 ounces sugar.
½ ounce salt.
} Woolwich ration, each in separate packets.

3. Haversack ration, for midday meal:—

4 ounces biscuit.
2½ ounces cheese.
} Contractor's ration.

(*b*) In the cook's wagon (which formed part of the first line of transport):—

4. Camp kettles and butcher's implements.

½ pound fresh meat per man.
8 ounces potatoes ,,
1 ounce margarine ,,
2 ounces onions ,,
⅛ tin condensed milk ,,
⅛ ounce pepper ,,
1½ pound fuel wood ,,
} Contractor's vegetable ration.

The price of each grocery ration was fixed at ¾*d.* and the cost of the haversack and vegetable ration 3¼*d.* per man. The men were charged at the rates they pay for messing in barracks, any balance being defrayed from the Regimental Institute funds.

Units were in possession of second line transport sufficient to carry one day's supply of bread, meat, groceries, forage, and fuel wood. These supply wagons were replenished from the transport and supply columns, which also carried one day's supplies complete. Each unit had distinguishing flags on all their vehicles provided regimentally. Tents were not as a rule used during the actual process of operations.

(To be continued.)

RECENT OUTBREAKS OF PLAGUE IN THE NEAR EAST.

(BY THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

Plague in Jeddah.

THE epidemic, or annual revival, of plague in Jeddah, described in my letters to THE LANCET of April and May last, came to an end early in May. One fatal case occurred on the 4th of that month, and none subsequently. A fresh revival of the disease must, however, be anticipated in the coming winter. It may be noted in connexion with the internal sanitation of Jeddah and the other towns of the Hedjaz, in regard to the deficiencies of which repeated representations have been made to the Turkish Government for many years past, that an effect has at last been produced. That Government has created a special Commission or Council to deal with the question, and is taking steps to obtain the necessary funds for improving the sanitary condition of those towns.

Plague in the Yemen.

It will be recalled that plague appeared in the port of Hodeidah in April; that down to April 30th, 31 cases, with 24 deaths, had occurred there; and that between April 30th and May 5th, 8 further cases, with 5 deaths, were reported. Between May 5th and 17th there were 6 more cases; on the 17th and 18th 2 fatal cases; and on the 20th 1 case, also fatal. Finally, on June 10th it was stated that no fresh case had occurred for 15 days, and the measures in force on arrivals from Hodeidah were suppressed. The disease also appeared in three neighbouring villages.

Plague in Bushire.

An outbreak of plague occurred in Bushire and its neighbourhood in the spring and early summer of this year. The first case was seen in the village of Zulmabad, near Bushire, on March 28th; its nature was confirmed bacteriologically, and on the 31st Bushire was declared infected. The returns for the following weeks were as follows:—Weeks ending: April 2nd, 3 cases, 1 death; April 9th and 16th, 0 cases, 0 deaths; April 23rd, 4 cases, 2 deaths; April 30th, 4 cases, 3 deaths; May 7th, 12 cases, 8 deaths; May 14th, 7 cases, 6 deaths; May 21st, 5 cases, 6 deaths; May 28th, 17 cases, 13 deaths; June 4th, 3 cases, 3 deaths; June 11th, 3 cases, 1 death; June 18th, 3 cases, 2 deaths; June 25th, 1 case, 1 death. On July 1st Bushire was declared plague-free. The above cases and deaths were distributed as follows: In Bushire itself, 30 cases, 22 deaths; in Zulmabad village, 23 cases, 16 deaths; in Jabri village, 2 cases, 2 deaths; in Mahmudabad village, 3 cases, 3 deaths; in Reshire village, 4 cases, 3 deaths. There were in all 62 cases and 46 deaths. I am indebted for the above details to Captain C. B. McConaghy, I.M.S., chief quarantine officer in the Persian Gulf, who also adds that the rumour that the infection came to Bushire from Bahrein (where plague had been prevalent in the preceding year) was entirely unsubstantiated; that there was no increase in the numbers of or mortality among rats—these animals appearing to play no part in this outbreak; that a certain number of cases occurred among the *sarbazes*, or soldiers of the Persian regiment in garrison; and that there were the usual difficulties in dealing with plague among an ignorant and superstitious population. There was also nothing to show definitely that the infection came from India, and Captain McConaghy does not think it did, though he gives the following details, which seem to point to such a possibility: "Two days before the man Haidar (the first known case) was seen his wife had died. She had been visiting and also helped to nurse a fellow villager who had died some seven to ten days before. This villager was the sister of a coolie who used to work cargo on the Bombay and Persian steamers and had also died some days previously."

Plague at Basra.

A few cases of plague in man were, it will be recalled, seen at Basra at the end of April and beginning of May, and at the same time several infected rats were found and killed. On August 9th 3 fresh cases of the disease, with 2 deaths, were reported, all occurring in the same house in Basra; and a little later it was stated that the third patient had also died, and that a large number of dead rats had been discovered in the same quarter of the town. No further cases were recorded, and on August 23rd Basra was declared plague-free.

Plague in Odessa.

On May 22nd (June 4th) the attendant in a night-refuge in Odessa was found to be suffering from plague; he was removed to a municipal hospital, where he died on the 26th (June 8th). For the following 40 days no further cases were seen, but on July 6th (19th) a baker occupying a shop in the same quarter of the town as the night-refuge fell ill with the disease. Four days later his assistant was attacked; both slept in the bakery. On July 5th (18th) a girl, aged 16, employed in an adjoining restaurant, had died, and a bacteriological examination showed that she had died from plague. Dead rats were found on that and the adjoining premises, the floors of which were taken up and burnt. On July 13th (26th) a Jewish boy was admitted to the Jews' hospital. On July 20th (August 2nd) a case was seen in a sailor on a ship arriving at Odessa from Nikolaief. Cases continued to occur in Odessa through July and a great part of August. In all, between May 22nd and August 18th (Old Style) 77 cases of plague, with 19 deaths, were registered. There had been rumours of the existence of the disease in the government of Bessarabia, at Kief, and Nikolaief, but the Russian authorities have declared officially that the suspicious cases there were in every instance shown by bacteriological evidence not to have been cases of plague. The origin of the outbreak in Odessa was unknown, but it was thought that the infection had been brought by rats on shipboard from Alexandria. It may be noted that among the measures put in force in Odessa were the following. Every householder was compelled, under a penalty of three months' imprisonment or a fine of 300 roubles (£30), to have from one to three rat-traps, according to the size of his premises, and to set and bait them in accordance with the instructions issued by the authorities. Squads of municipal rat-catchers were formed. A reward of 10 roubles (£1) was offered to anyone reporting an undoubted case of plague. The last occasion of a plague outbreak in Odessa was in 1902, when (as also in 1901) a small number of cases of the disease were seen there.

Plague in the Kirghiz Steppes.

A small outbreak of plague in the Kirghiz Steppes of the Astrakhan government occurred in June and July last. Four villages in the Narynsk and Kalmuck portions of the Steppes

were infected. Between June 13th and 25th (June 26th and July 8th) 13 cases and 12 deaths were registered. A number of medical men were sent to the infected centres; anti-plague inoculation was, it is said, employed to a considerable extent; and on July 8th (21st) the Astrakhan government was officially declared plague-free.

Plague at Beirût.

On Sept. 29th an imported case of plague was seen at Beirût. The patient was a sailor on a coasting steamer, the *Syria*, which arrived, without passengers, from Alexandria on Sept. 27th. The ship had lain for 20 days in Alexandria, where sporadic cases of plague continue to occur, and there can be little doubt that the infection was contracted there.

Plague at Adalia.

On Sept. 21st (Oct. 4th) it was reported that a sweetmeat-seller in Adalia had been found to present symptoms of plague; he had been ill for three days. Next day a second case was seen. There seems little doubt that both were cases of plague. It will be remembered that each year since 1905 (included), with the sole exception of the year 1907, isolated cases of the disease have been seen in Adalia, and usually about the same period of the year.

Constantinople, Oct. 10th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

University of Bristol: Conferment of Degrees.

THE new buildings are gradually becoming incorporated in the working University machine. It is true that the laboratories are not yet completely furnished, but some rooms are in use, and the Council was able to meet for the first time in the 1910–11 session in the room designed for that purpose in the new wing. The first Congregation of the University for admission to degrees was held on Oct. 20th at the Victoria Rooms. The city was reminded that this ceremony was about to take place by a procession through the streets of students in various costumes, starting from the University and returning by a circuitous route to the Victoria Rooms. The hall was absolutely full, admission being by invitation only. At the front of the platform sat the Vice-Chancellor and other officers of the University, the Deans of Faculties, the Lord Mayor and the Sheriff, and the Master of the Merchant Venturers' Society. Behind these was a large concourse of students, armed with various wind instruments, banners, and the other paraphernalia of the young barbarian. In front of the Vice-Chancellor was an open space to which those about to receive degrees were ushered; on his right sat the Council of the University, on the left the Senate, and on either side behind these the rest of the University staff. The remainder of the hall was filled with onlookers, members of the court, members of the city council, and others. At the back of the hall was another body of students. The honorary degree of D.Sc. was conferred on Professor C. Lloyd Morgan, who, as first Vice-Chancellor of the University, principal for over 20 years of University College, Bristol, and professor of psychology, has done great things for Bristol. That this is recognised was shown by the conferment upon him of the only honorary degree given at this the first graduation ceremony; by the eulogistic address with which he was introduced by Professor F. R. Barrett to the Vice-Chancellor; and by the tremendous ovation with which he was greeted. It was unfortunate that an otherwise dignified ceremony should have been to some extent spoilt by the students' interruptions, which would have been pardonable and even welcome had they been more conspicuous for quality of wit and less so for volume of noise.

The Association of Alumni.

The members of this association dined together on Oct. 21st at the Imperial Hotel, Clifton. Ladies were included in the company, which consisted not only of members of the association but also of many of the University professors and lecturers. In addition to the toast of "The King," proposed by Mr. G. Munro Smith, the President of the association, who was in the chair, the health of the University of Bristol was proposed by Dr. R. Shingleton Smith, whose recollections of the foundation of University College, Bristol, showed that it was largely due to the energy of those medical men who were in charge of the Bristol medical school before the College existed, and who felt that in enlarging their school its scope should be widened to include other branches of higher education. Sir Isambard Owen, the Vice-Chancellor, replied on behalf of the University, insisting especially on the pre-eminent need for men, and not for buildings or money only. The next toast, that of the guest of the evening, Sir Oliver Lodge, was proposed by Professor G. H. Leonard. Sir Oliver Lodge, in reply, showed points of similarity between the origin of the University of Birmingham and that of Bristol. The health of the association was proposed by Professor I. Walker Hall, and Mr. Munro Smith, in his reply, reminded his hearers that the objects of the association were to bring together past and present students of the University and to maintain a record of their careers. Letters from Sir William Ramsay and others regretting absence were read, and songs were contributed by Mr. F. H. Rose and Mr. A. M. Tyndall.

The University Settlement.

At a meeting held in the University on Oct. 21st, the Lord Mayor of Bristol presiding, Sir Oliver Lodge gave a most interesting address to a crowded audience. Speaking of the social problems of the twentieth century, he said that society should not be allowed to stratify; it should be stirred up. He did not consider that the work of a settlement lay in dealing with the "absolute dregs" of society so much as in preventing their precipitation by a scientific study of the causes underlying it. He spoke of the efforts made in Birmingham to provide means for such study and for the training of persons in social service, efforts which were leading to the formation of a school of practical economics. He insisted upon the importance of giving a definite training to those persons who would in the near future hold administrative posts under the reformed Poor-law and the like. A statement recently circulated among those interested says that the University Settlement in Bristol has in view the promotion of the general welfare in its own neighbourhood and the provision of a centre for social study and training. The committee in charge of the scheme recommends that temporary premises should be acquired, and that the building of a settlement with club-rooms, &c., should be delayed until some more definite idea of the shape and scope of the work has been arrived at. For immediate purposes £1500 are required to buy and equip premises in East Bristol; the maintenance will cost from £300 to £400 annually. Already over £720 have been subscribed or promised.

Bristol Eye Dispensary.

At a committee meeting of this charity held on Oct. 11th the resignation of Dr. A. Ogilvy was accepted with much regret. Mr. E. H. E. Stack was elected to the vacant post of full surgeon, and Dr. A. Fells, Mr. W. P. Taylor, and Dr. H. B. Porteus were elected assistant surgeons.

Scarlet Fever and Hospital Accommodation.

The need for a large increase in the accommodation available in Bristol for the reception of cases of infectious disease is being forcibly illustrated. Scarlet fever is prevalent in the St. Philip's and St. George's districts to such an extent that cases cannot be admitted into the city hospitals. Reference was made in this column a fortnight ago to the shortage of beds at the fever hospitals, and this outbreak has proved that expansion is a matter of urgent importance. The health committee has asked Dr. D. S. Davies, the medical officer of health, to report as to the necessary steps by which the situation may be temporarily relieved.

Phthisis in Bristol.

The Bristol board of guardians, after prolonged discussion of a scheme for purchase of a country estate near Bristol to be utilised as a sanatorium for pauper consumptives, has determined to confer with the health committee of the city council before taking any steps in the matter. The health committee has of late been exercised as to the inadequacy of accommodation for Bristol consumptives in the beds available for that purpose at the Winsley Sanatorium; so that a conference between the two bodies comes at a particularly fortunate moment and will, it is hoped, result in an adequate and coördinate scheme for the treatment of patients suffering from phthisis.

John Davies, M.R.C.S. Eng., L.S.A.

Mr. John Davies died at his residence, 8, Beaufort East,

Bath, on Oct. 10th, in his seventieth year. He received his medical education at the Birmingham Medical School and took the "College and Hall" qualification in 1863. After holding the appointment of house surgeon at the Stockport Infirmary Mr. Davies entered the Indian Medical Service and was for some time civil surgeon at Balasore. He retired from the service about 1870, when he commenced practice in Bath, and in 1872 was elected medical officer for the Walcot district of the Bath union, which appointment he only resigned last year. Mr. Davies was senior surgeon to the Bath lying-in charity. He was a good sportsman and a frequent follower of the Duke of Beaufort's foxhounds. By his death one of the oldest and best known medical practitioners has been removed from Bath, and much sympathy is felt there for his widow.

Fatal Accident to a Medical Man.

At the Bradford-on-Avon (Wilts) police court on Oct. 20th a domestic servant was charged with the manslaughter of Mr. Richard Thompson Cæsar, M.R.C.S. Eng., L.S.A., at Limpley Stoke. Evidence showed that the accused was riding a bicycle without a light about 7 P.M. on Oct. 7th. She did not sound a bell, and in the dark ran into the deceased, who was walking in the middle of the road. Mr. Cæsar sustained a fracture of the base of the skull and died in consequence on Oct. 17th. An inquest was held on Oct. 18th, when a verdict of "Accidental death" was returned, and the coroner, at the request of the jury, severely reprimanded the woman. After hearing the evidence the magistrates remanded the accused, on bail, for eight days. Mr. Cæsar, who was 73 years of age, resided at Bearsted, Kent, and was on a visit to Limpley Stoke. He was formerly surgeon to the Wellington Dispensary, Shirley Children's Hospital, and the Downton Cottage Hospital. Mr. Cæsar was at one time surgeon-colonel in the 2nd Volunteer Battalion of the Hampshire Regiment, and he had also been President of the Salisbury Medical Society.

Proposed Medical Officer of Health for Cornwall.

At the last meeting of the Cornwall County Council a discussion took place in reference to the proposed appointment of a medical officer of health for the county. The joint committee had previously recommended the sanitary committee to suggest such an appointment to the county council, and had mentioned a salary of £500, rising to £600 per annum. The sanitary committee, whilst recommending the council to adopt the joint committee's resolution, had proposed a reduction of the salary by 25 per cent. After some discussion, in which the chairman of the sanitary committee (the Hon. John Boscawen) stated that he was not in favour of the proposed reduction, it was decided, on the motion of Sir Arthur Quiller-Couch, to recommend the finance committee, as the authority which decides the question of the remuneration, to fix the salary as £500, rising to £600. It is satisfactory that the county council has adopted this course, as, after all, the proposed salary is quite small enough for such a position as medical officer of health for Cornwall.

Oct. 25th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

St. Mary's Hospitals.

THE old St. Mary's Hospital and the Southern Hospital threw in their lot together some years ago and a new hospital in place of the Southern was erected near the present infirmary buildings in Oxford-road. Unfortunately, however, the funds did not allow of the opening for patients of this well-appointed hospital for the diseases of women and children. Now, however, there is to be a benefaction of £2000 for the endowment of two beds in the gynæcological wards, given by Mr. Edward Hopkinson in memory of his father and mother, to be called the John Hopkinson and Alice Hopkinson beds. Mr. Edward Hopkinson's benefaction is, however, conditional on the hospital being opened for the reception of patients within six months' time. This offer, therefore, is a challenge to the well-wishers of the hospital and to the benevolent of Manchester which, it is to be hoped, will be responded to generously.

Housing in Hulme.

A public meeting was held in Hulme on Oct. 18th to consider whether a large area, formerly occupied by cavalry barracks, should be devoted to the building of houses or converted into an open space. Hulme is densely populated, so that an open space—a lung in popular phraseology—would in itself be a good thing. But, on the other hand, houses for working people are urgently needed. The corporation has in other parts of Manchester gone to great expense in the building of what the people for whom they were intended call "barracks." Now the working people of Manchester do not like barracks, euphemistically called "tenement" houses. As one of the speakers said, "They want houses, not warehouses." All these ventures into providing dwellings for the poor add to the burdens of the ratepayers, for they have always been a loss to the corporation. The people want cottages at a rent of from 3*s.* to 5*s.* a week. It is acknowledged that the corporation could only build such houses at a loss, but that does not alarm these dwellers in Hulme, so they passed a resolution unanimously to the effect that the corporation should "without delay" build houses on the barracks street site in accordance with the intention for which the land was purchased. Such is the pleasant prospect which opens out before the gaze of ratepayers, sanitary committees, and corporations.

No Mortuary at Crewe.

At a recent inquest at Crewe Dr. E. C. Bailey drew attention to the undesirability of making post-mortem examinations at private houses. In the present case his task had been very unpleasant, there being so many children about the premises. The foreman of the jury said it was equally unpleasant for the juries. Finally, the jury recommended the coroner to write to the Crewe corporation asking them to provide a mortuary. It is strange that in an important and growing town like Crewe a mortuary was not provided long ago.

Oct. 25th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Research Defence Society.

AT a meeting of the Edinburgh branch of the Research Defence Society held in Edinburgh on Oct. 21st an address was given by Mr. Stephen Paget, F.R.C.S. Eng., on Pasteur's Life and Work. Lord Dunedin occupied the chair, and among others on the platform were Sir John Batty Tuke, Sir A. R. Simpson, Professor E. A. Schäfer, Dr. G. A. Gibson, and Dr. W. Allan Jamieson. Lord Dunedin, in introducing Mr. Paget, explained the objects of the Research Defence Society and spoke in defence of scientific research. Mr. Paget then delivered a most interesting lecture, illustrated by lantern slides, on the work of Pasteur. He referred to Pasteur's early chemical discoveries, to his study of ferments, and to his study of disease in silkworms, begun in 1865, as a result of which he was able to show the causes of a condition so seriously affecting the silk industry in France. After the Franco-German war he began the study of diseases in man and animals, and discovered the principles of preventive inoculation. His work on anthrax had enormously diminished the mortality among sheep and cattle from this cause. In 1875 Pasteur demonstrated in the Paris hospitals the methods of aseptic surgery and proved to the French Academy of Medicine in 1878 the cause of puerperal fever. The lecturer also described the discovery by Pasteur of the preventive treatment of rabies. Among persons bitten by mad dogs and treated by the Pasteur method the mortality was 0·3 per cent. On the motion of Dr. Gibson a vote of thanks was given to the lecturer. The following office-bearers were elected:—President: the Duke of Montrose, K.T. Vice-Presidents: Lord Dunedin, P.C., LL.D., K.C.V.O., Sir William Turner, K.C.B., F.R.S., Sir John Batty Tuke, M.D., LL.D., and the Rev. A. Wallace Williamson, D.D. Honorary treasurer: Professor Harvey Littlejohn. Honorary secretaries: Dr. John D. Comrie and Dr. R. W. Johnstone. Professor Schäfer moved the adoption of the secretaries' and treasurer's reports, and Mr. J. M. Cotterill, Vice-President of the Royal College of Surgeons of Edinburgh, seconded.

Medical Graduation at Glasgow University.

The first of the autumn graduations in medicine took place at Glasgow University last week. Formerly only one final examination was held each year, but under a new arrangement there are now two—one in the spring and one in the autumn. Although the proceedings were of a formal character there was a large attendance in the Bute Hall, when Sir Donald MacAlister, K.C.B., presided. The degrees of Bachelor of Medicine and Bachelor of Surgery were conferred on 48 graduands, of whom one received the degrees with honours and three with commendation. Three ladies graduated amongst the number.

The Payment of Interim Medical Officers.

Recently Kilsyth town council appointed a medical officer of health for the burgh for the period of one year. On intimation being made to the Local Government Board that body has written to the council pointing out that there is no authority under the Public Health or Burgh Police Acts for the temporary appointment, and it does not regard such appointment as legal or fulfilling the local authorities' statutory duties under these Acts. The Board also points out that the salary paid to an interim officer cannot rank as a claim against the medical officer grant.

King's Cross Hospital, Dundee.

A special meeting of the public health committee of the Dundee town council is to be held to deal with facts connected with accommodation for scarlet fever cases in Dundee. The committee has recommended the provision of temporary accommodation at King's Cross Hospital for 20 beds, at a cost of £2100, in view of the large number of scarlet fever and diphtheria patients. The number of cases is not greater than it has been, but the demand for admission is greater. The accommodation for fever cases is 112 beds, and there are in the hospital 154 cases. The resident medical officer at King's Cross and three of the nurses are on the sick list.

City Hospital Alterations, Aberdeen.

After extensive alterations and additions the Aberdeen City Hospital has had its new buildings formally opened. The cost of the extensions will be over £10,000, and instead of accommodating 127 patients as formerly, 200 can now be treated. The nurses' accommodation has also been considerably enlarged, and a large recreation-room added for their use. The new wards are built of granite with ashlar masonry, the size being similar to the present ones, an allowance of 2000 cubic feet being provided for each bed. They are heated by radiators fitted up in the window recesses and are ventilated by opening fanlights over the windows and gratings in the ceilings connected with ventilators fitted up in the roof. Altogether the additions are important and should much improve the usefulness of this institution for the treatment of infectious diseases.

Infantile Mortality in Aberdeen with regard to Pneumonia.

In his report to the Aberdeen town council for September Dr. Matthew Hay, the medical officer of health, states: "The deaths among infants under 1 year of age amounted to 49 during the month, as against 46 in the preceding month, and an average of 44 for the month of September in the preceding five years. The slight increase in the total number of deaths was much more than accounted for by a considerable addition to the deaths from pneumonia. These amounted to 11, as compared with an average of less than two in the corresponding month of the preceding five years. In the previous month there was only one death from this cause. There was also a slight increase in deaths from pneumonia at the ages of 1 to 5 years; but it was far short of the increase among infants. I have specially inquired into the circumstance of the deaths occurring among children under 1 year. The illness seems to have been largely of a zymotic type, as, except in two cases, its duration was under ten days, and in most of the cases only two to five days. In four cases there was no history of previous illness. In the remaining seven, the infants had been weakly—some of them since birth. The majority of the infants had been bottle fed. All the deaths occurred among children of the labouring and artisan classes, and therefore in small houses. The cases were scattered throughout the city, and had no discoverable connexion with each other, or with any previous known case of pneumonia among the family or among the neighbours or relatives. It may be remembered that there was a similar sudden rise of death from pneumonia at the end of last year, but it was accompanied by a corresponding increase in deaths from bronchitis. On this occasion no deaths from bronchitis have been registered as occurring among young children. The sporadic character of the pneumonia resembles closely that of cerebro-spinal fever as experienced in this city, and suggests that the cases of pneumonia may have been provoked by some little-understood weather conditions that may render weakly infants less resistant to pneumonia micro-organisms, which are now well-known to be practically at all times widely diffused in every community."

Oct. 25th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Mr. Birrell and the Local Taxation Account.

ON Oct. 24th a deputation representative of several of the principal municipal and county authorities waited on the Chief Secretary to discuss the failure of the Local Taxation Account, to which reference was made in THE LANCET last week (p. 1248). Though Mr. Birrell was unable to promise immediate relief from the Imperial Exchequer, yet he gave the deputation some crumbs of comfort. He realised fully the gravity of the present situation, and he also admitted that the local authorities were in no way to blame. The increase in expenditure in the asylums had been unavoidable, and a further increase must be expected. This being the position, the whole scheme must be reconsidered, and to this reconsideration Mr. Birrell pledged himself. As regards the present position, he stated that it would be found that the deficit would not be so great as was believed at present. The ultimate solution of the problem has to be faced, and Mr. Birrell has invited the aid of Irish public opinion. It is to be decided whether lunacy is in future to be regarded as a local or as an imperial charge; if the former, in what way is help from imperial sources to be given, as a fixed grant per year or a fixed sum per lunatic? Whatever solution is put forward it should be one with a reasonable prospect of permanence, and not be dependent on an inelastic or bankrupt fund.

Fagan Memorial Fund.

The friends of the late Mr. P. J. Fagan, whose sudden death was recorded recently in these columns, have issued a circular appealing for subscriptions to a memorial fund. Still a young man in professional life, Mr. Fagan had been unable to do more than make a very frugal provision for his wife and children, though he left not a single debt. It is proposed to direct whatever subscriptions may be received towards the education of his children. Already a promising return is being made. Mr. R. F. Tobin, 60, St. Stephen's Green, Dublin, is one of the honorary treasurers.

Belfast Natural History and Philosophical Society.

The report presented to the annual meeting of the members of this society, held on Oct. 12th, showed that the negotiations between the society and the city council have been practically completed by which the specimens in the museum will be ultimately lent on permanent loan to the corporation, and will be located in the new municipal museum. Sir John Byers was elected, for the third year in succession, president of the society.

Oct. 25th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Professor Ehrlich's New Remedy, "606."

THE Academy of Medicine has devoted a portion of several of its meetings to discussions on Professor Ehrlich's new remedy "606," which has aroused such widespread interest throughout the medical profession. The subject was introduced on Oct. 4th by M. Hallopeau, who expressed the opinion that "606" did not fulfil the conditions of reliability and complete harmlessness necessary to justify the

eulogies which have been bestowed on it. He said that there have been already 14 deaths attributed to it, two of them in Paris, and it was possible that unrecorded cases of a fatal termination have occurred in private practice. Instances of blindness due to this cause have been met with, and it was beginning to be known that patients who had been treated for syphilis in this manner might have relapses of the disease. Its administration has also been followed by various disorders and derangements of the health, such as paralysis of the legs, paralysis of the bladder, albuminuria, diarrhœa, epileptiform attacks, and pneumonia. Hectine, which he had made known to the Academy some time ago, appeared to him to be far preferable; it was quite harmless, and none of the patients who had been treated with it at a sufficiently early stage has as yet suffered from relapses. M. Netter interposed with the remark that a man of Professor Ehrlich's high standing was worthy of credit. M. Balzer said that he agreed generally with the opinion expressed by M. Hallopeau. He regretted that no information was obtainable with respect to the deaths which had followed the administration of the new remedy, because if the facts had been disclosed practitioners might have been able to learn something from these enlightening incidents. He feared that medical men with no more than a superficial knowledge of the subject would yield to the entreaties of certain patients and resort too readily to powerful medicines the dangers of which had not been fully investigated. On Oct. 11th M. Netter read a letter which Professor Ehrlich had written to him in reply to the unfavourable comments made at the previous meeting. Professor Ehrlich said that he had not met with any instance of blindness consequent on the use of the new remedy. There had been one death of a patient who was a lunatic, and in reference to this he remarked that great caution was necessary in giving "606" to patients suffering from lesions of the nervous system. He concluded by saying that hectine, which was recommended by some French practitioners in preference to his new remedy, was patented in Germany, just as "606" was. On Oct. 18th M. Hallopeau, replying to Professor Ehrlich's letter, said that he could not understand why Professor Ehrlich refused to acknowledge the two cases of blindness which had followed the administration of "606" and had been reported in Germany. Professor Ehrlich considered that 12 deaths among patients who had received 8000 injections was a small mortality, but M. Hallopeau maintained that it was a high mortality as compared with hectine and some other antisyphilitic remedies which had never been followed by fatal results. To these 12 cases it was necessary to add four others which had occurred in Paris. M. Hallopeau gave an account of a case which supported his contention that a patient might recover completely from syphilis under the use of hectine; the individual in question was a man who, after treatment with hectine some months ago, was found to have contracted a second attack of syphilis. As syphilis usually confers such a degree of immunity that a second infection is decidedly uncommon, the inference is that the patient under the care of M. Hallopeau recovered completely from the disease and was practically in the condition of a person who had never suffered from it. M. Mouneyrat protested against a statement made by Professor Ehrlich to the effect that hectine was first made known in Germany and was patented there in 1906. An examination of the records, samples, and descriptions of manufacturing processes preserved in the German Patent Office showed that hectine was not one of the arsenical compounds patented at the time stated; indeed, it was probable that Professor Ehrlich had never had hectine in his possession. The new remedy "606" received more favourable consideration at a meeting of the Société Médicale des Hôpitaux held on Oct 14th, its therapeutic efficacy being highly commended by M. Jeanselme, M. Laignel-Lavastine, M. Touraine, M. Milian, and M. Netter. M. Jacquet said that it was advisable to be cautious in the use of antisyphilitic remedies, as some of them set up irritation which might cause tertiary syphilomata.

Precautions against Cholera.

As the epidemic of cholera in Naples has not yet subsided, measures of precaution continue to be taken on the French frontier. Every traveller coming from Italy, even although provided with a permit granted by the Italian sanitary authorities, is examined by French medical men in the railway station at Modane, and thereupon receives a permit which he must deliver to the police on arrival at his destination, at the same time informing them of the address at which he resides. Travellers coming direct from Naples are very strictly scrutinised. If they present even the slightest suspicious symptoms they are detained at Modane and isolated for the full period of incubation, which may be as long as seven days, after which, if there have been no further symptoms, they may continue their journey. As a general rule, there is no disinfection of travellers' luggage.

Oct. 25th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

A Congress on the Care of Persons Suffering from Mental Defects.

AN International Congress on the care of persons suffering from mental defects was held recently in Berlin and was attended by a great many visitors from various European nations. The first subject that was considered was the connexion between civilisation and mental diseases, the discussion being opened by a paper read by Professor Tamburini of Pavia. He took the view that mental diseases had not increased in consequence of the progress of civilisation, but that their form had altered. The epidemic diseases formerly ascribed to mystic and even demoniacal influences, such as the flagellantism and the St. Vitus dance of the Middle Ages, had disappeared; hysteria, which was so frequent in modern times, prevailed in former centuries also, but was known by other names. Instead of the above mental diseases others had come into existence, caused by nervous overstrain, by the abuse of spirituous liquors, and by syphilis, but they might be counteracted to some extent by judicious precautions. Professor Rüdin of Munich said that epidemics of mental instability existed in the present day, but they did not now lead to the disorderly scenes which characterised their predecessors in the Middle Ages; he alluded to "Christian Science" and some other "comical" sects, as well as to the traumatic hysteria which in Germany had seized the working population since insurance against accidents had become compulsory. Civilised nations were undoubtedly showing symptoms of degeneration in consequence of modern endeavours to protect the weaklings and degenerates who formerly perished, and the offspring of these persons inherited their defects. Dr. Hellpach of Carlsruhe read a paper on psychopathological features in modern art and literature, illustrating his remarks by an analysis of modern novels and dramas from a psychiatric standpoint. Another subject of discussion concerned mental diseases in the army. Dr. Deknatel, of the Dutch army, said that the increase of insanity in armies was partly owing to overexertion, due to the fact that battles fought with modern weapons and in accordance with modern tactics made greater demands on the bodily and mental capacity of a soldier than could be borne by psychopathic recruits. All recruits ought to undergo psychiatric examination. Dr. Krause, of the German army, said that in Germany great stress was laid on precautionary measures, by which men who were either neuropathic or suspected to be so were as much as possible excluded from conscription, and the recruiting officers made careful inquiries as to the mental state of intending recruits. Nevertheless, a number of psychopathic recruits entered the army; continued misdemeanour, notwithstanding frequent punishment, was very often a sign of a psychopathic state, and such offenders should be observed by alienists. In several garrisons elementary lectures on mental diseases were now delivered to army officers by members of the Army Medical Corps, with a view to assisting the recognition of suspected cases. Dr. Krause stated that during the war in South-west Africa the incidence of insanity increased by 5 per cent. owing to the over-exertion of the men. Dr. Puetet, a French medical man, stated that the number of psychopathic persons was especially great among the volunteers. Professor Marie of Paris read a paper on the Importance of Wassermann's Reaction for the Diagnosis of Syphilitic Diseases of the Central Nervous System. He said that if the spinal fluid obtained by lumbar puncture gave a positive reaction syphilis was undoubtedly present and mere neurasthenia might be excluded. A discussion on Sleeping Sickness was opened by

Professor Ehrlich of Frankfort. He said that a certain likeness existed between general paralysis and sleeping sickness, because both diseases were influenced by the same pharmaceutical preparation. The trypanosoma was obviously of a different resistance against arsenic in different districts. In the colony of Togoland a "sterilisatio magna" was obtained without danger by doses of his preparation No. 606 which in East Africa were dangerous to life and at the same time failed to produce any beneficial effect on the disease. He had had good results by a combination of arsenic with trypan-red. In some cases treated in this way the patients had regained their health and remained quite well for the last eight months. Both general paralysis and sleeping sickness were very resistant when the microbe causing the disease had made its way into the spinal fluid, because the endothelium of the spinal meninges hindered chemical compounds of high molecular weight from entering. This difficulty must be overcome by the discovery of new preparations possessing similar therapeutic properties but of less molecular weight, and he hoped to be aided in this work by the alienists. Dr. F. W. Mott of London, in showing numerous microscopical preparations of the disease, said that sleeping sickness was only a clinical symptom of trypanosomatosis, caused by a perivascular infiltration of the cerebral vessels. He said that the trypanosoma was the same in every patient and that the disease was spread by a creature (a species of tick) which was everywhere the same. He proposed to term the disease human trypanosomatosis instead of sleeping sickness. Other papers read before the congress dealt with the importance of careful supervision of infants and young children, with a view to the prevention of idiocy and psychopathy, the establishment of sanatoriums for nervous patients of the less wealthy classes, and the teaching of forensic psychiatry. An exhibition was held in connexion with the congress and was very well attended.

Centenary of the University of Berlin.

The University of Berlin celebrated its centenary on Oct. 11th and 12th amid great manifestations of enthusiasm and a succession of impressive ceremonies. The principal event of the proceedings was an address delivered by the Emperor, who announced that a large sum (about £500,000) had been collected and given to him by private benefactors on the occasion of this centenary, and that with the approval of the Government he intended to employ this money for the erection of scientific institutions. In these institutions men of acknowledged eminence in their various fields of research would have an opportunity of devoting themselves exclusively to scientific work, unhindered by having to undertake the duties of university teachers and examiners. The institution for experimental therapy in Frankfort under Professor Ehrlich would serve as a model for the proposed institutions, from which medical science would unquestionably derive much advantage.

Oct. 24th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Memorials to Professor Nothnagel and Professor Gussenbauer.

Two memorial tablets, with very lifelike sculptured representations of Professor Nothnagel and Professor Karl Gussenbauer, were unveiled recently in the Aula of the University of Vienna. Professor Nothnagel, who died a couple of years ago, was characterised by great suavity of manner in his dealings with patients; he had a favourite saying to the effect that only a kind-hearted man could be a good physician, and this motto was inscribed on the tablet erected to his memory. Professor Gussenbauer was the successor of the famous surgeon Professor Billroth, whose intimate friend and pupil he had been, and he had a very brilliant career; though his manners were curt he won the esteem of everybody with whom he was brought in contact, and the fund for raising a tablet to his memory received very liberal support.

Disappearance of Cholera from Vienna.

During the four weeks which have elapsed since Sept. 23rd not a single case of cholera has been notified in the city and the cholera committee has therefore been dissolved. It was due to the combined efforts of the municipal and Government authorities that the threatening invasion was warded off. Altogether 7 cases with 3 deaths were observed in the city, and of these attacks all but one could be traced directly to the Hungarian steamers plying on the Danube between Vienna and riverside places in Hungary. It is now taken for granted that the river Danube is infected in the lower parts of its course. Amongst other precautions, a special look-out was kept on the portion of it within Vienna to prevent people from using the river water, which was not unlikely to be polluted by the infected Hungarian vessels moored in quarantine. The sale of grapes, 60 per cent. of which come to Vienna from Hungary, was also under very strict supervision. The energetic measures that were taken have caused much dissatisfaction amongst tradesmen, but the result upon the public health was most satisfactory. The extra expenditure under this head up to the present time amounts to £14,000.

Open Spaces in and around Vienna.

A favourite idea of the late Mayor of Vienna, for which future generations will owe him unbounded gratitude, is gradually coming into practical operation. He was the first to recognise that a broad ring of gardens, parks, and heaths round great Vienna was essential for the health of the population. He therefore always refused his consent to plans of building cottage suburbs around the city, but insisted on the laying out of parks. His projects were well received by the population, and when recently an extension of an existing park in the north of the city was opened it was at once called by his name, in disregard of its official designation. At present there is a girdle or zone of some 1400 yards breadth, consisting partly of cultivated land and partly of uncultivated areas, which completely encircles the city at a distance of some six miles from its centre. This area is not to be built upon, and beyond that circle only cottages with gardens in front and behind may be erected. There will also be an abundant supply of water for ornamental ponds and other purposes. At present there are eight large parks in Vienna with an area of more than a square mile, whilst smaller gardens are scattered all over the inner districts. The latest addition to the park measures a quarter of a mile on each side and consists chiefly of grass plots for the benefit of the children.

Professor Tandler's First Official Lecture.

Professor Tandler, the successor of the late Professor Zuckerkandl, opened the winter session of the Anatomical Institute with a lecture on the Correlation between Clinical Work and Anatomy. As is the custom here, a large number of professors witnessed the "maiden speech" of their new colleague. He pointed out that the practitioner must obtain help from the anatomist, and that it was an error to suppose that the anatomist begins where the practitioner leaves off, because a knowledge of anatomy was indispensable for nearly all modern operations and for many therapeutical procedures. Professor Tandler said that anatomy also helped the physiologist and the original investigator, both of whom contributed to the success of the practitioner at the bedside. A large number of students and medical men attended the lecture, and the presence of more than 80 female students showed that the professor is a pioneer in the movement for the admission of women to the study of medicine.

Phosphorescent Bacteria.

Although the connexion between gardening and bacteriology is not very apparent, some interesting bacteriological specimens were to be seen at a flower show and exhibition of garden produce recently held in Vienna. They consisted of a number of plates with cultures of Pseudomonas lucifera and Bacterium phosphoreum, prepared by Dr. Molisch, director of the Physiological Institute, who has devoted special attention to the study of phosphorescent bacteria. The first-named micro-organism was discovered on shellfish, and is now cultivated in gelatine containing 1 per cent. of peptone. Cultures of this bacterium emit a bluish-green luminosity capable of lighting up a small room to such an extent that large print can be read. This is the only genus of bacterium which gives off rays visible in the spectrum. Dr. Molisch has found that meat which has been kept for some time, slices of boiled eggs, and potatoes are the best media for cultures of the Bacterium phosphoreum, which can be made to intensify its brilliancy

by variation of the media. The light is not accompanied by heat rays capable of detection by any known method. These self-luminous cultures have aroused much interest and form an attraction for many medical men.

Oct. 24th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

SINCE the first week in August there has been a continuous increase in mortality from plague, the total reported deaths for the week ending Sept. 10th being 2057, as compared with a total of 610 four weeks back. The latest provincial figures are: Bombay Presidency, 625; the Central Provinces, 402; and the United Provinces, 135; while Central India returns 256 deaths. The worst affected district in British India is the Buldana district in Berar, which has suffered a mortality of 162. Baroda State accounts for just under one-third of the deaths reported from the Bombay Presidency.

Proposed Medical College for the Central Provinces.

Three proposals have been put forward regarding the form of a memorial to his late Majesty King Edward for the Central Provinces, viz.: (1) King Edward Sanatorium for consumptives; (2) King Edward Medical School; and (3) King Edward Scholarship. Rai Sahib Mathura Prasad, pleader of the Central Provinces, favours the second of these schemes, and has prepared an interesting note on the subject in the course of which he says: "Every province in India has been provided with at least one medical college to meet local requirements and to remove local wants. There is certainly no reason why our province, with its teeming population and the rapid advance it is making in the march of civilisation and progress, should be thrown in the cold shade of neglect. How will it be possible for the Central Provinces without a proper training institution to stand up in competition with other provinces when Lord Morley's scheme of constituting a medical service consisting of Indian medical practitioners only is put into execution? Moreover, evidence will not be wanting to prove that candidates of our province who had the courage and means of going to other provinces have been denied admission into the colleges of those provinces on the simple ground that those institutions were intended more for local boys than for foreigners. The heavy expenses and the risk which the prolonged residence in distant provinces involves prevent many aspirant youths from joining the profession, which relieves human sufferings. The total absence of any medical college in our province for the proper training of men in this noble profession is responsible for the paucity of qualified candidates to take charge of dispensaries and hospitals. Instances will be at once forthcoming to show that a large number of dispensaries could not be opened in this province for want of qualified men in spite of the funds made available for their maintenance and support. There is thus abundant proof that the medical service and the profession are undermanned with us." He quotes figures showing that only one medical man is available for every 31,256 persons, and only one dispensary for every 60,442 persons. The existing number of hospitals and dispensaries, he says, are so situated as to allow daily only 9633 persons out of the total population of the province to get medical relief. The wholesale extension of medical help into the interior of the provinces amongst a mass of village population which is at present at the entire mercy of illiterate, ill-educated, and untrained persons, will speedily put a stop to the heavy mortality of men, women, and children who are dying in large numbers from sheer want of proper administration of medicine and medical assistance.

Instruction in Malarial Fever Prophylaxis at Amritsar.

The anopheline mosquito is not a particularly large insect, and it is remarkable to reflect how much laborious research its little body and malignant activities can give rise to. Six hard weeks of study were spent at the beginning of the hot weather of this year by the malaria class held in Amritsar and its instructors in verifying most of what is known about this ubiquitous form of life and its habits, and during the time so much was accomplished that is by no means easy even to give a *résumé* of the work done in a short space. In order to show the thorough nature of the researches undertaken it may be observed that the first fortnight of the course was devoted to the examination of the mosquito itself, both of the anopheles and culex varieties, and of either sex of each. The general appearances and particular features, not only of the full-grown insects, but also of the larvæ and nymphæ, were carefully noted, and the methods were learned of searching for, collecting, mounting, and identifying larvæ and of breeding out and collecting adult mosquitoes, as well as the chief anatomical features of the insects. A study of scale structure was entered into to facilitate the identification of anopheline genera, while the species were distinguished by means of synoptic tables. The third week was devoted to "blood work"—the study, that is, of methods of obtaining blood specimens in villages exemplified by the collection of films in Amritsar and the neighbouring villages. Next came the dissection of the mosquito and the study of its anatomy and various stages of development in detail, which occupied the fourth week, during which the systematic collection of adult anopheles in villages and their internal examination was carried out by members of the class, while opportunity was also taken to study the ova of as many species of anopheles as possible. Malarial survey-work in field and laboratory, map entries, critical examination of mortality statistics of affected areas, and a close study of social and economic conditions occupied a further fortnight, and after the completion of the work in Amritsar city a malario-physiographical survey was made of a neighbouring rural tract, affording much detailed discovery useful for registration. A few more days were devoted to revision and to methods connected with the clinical study of malaria, and throughout its period of study the class was privileged to examine special collections sent from Burma, Bengal, Madras, Bombay, the Punjab, and other regions through the kindness of various officers, as well as a large collection of selected slides showing parasites. If there are medical officers in India ignorant of the true inwardness of malaria and of its conveyers these were evidently not at Amritsar during March and April of this year. There can be no doubt that India will have reason for gratitude in plenty to those whose attendance at the thorough-going class in question will have invested them with a complete and detailed knowledge of one of India's most formidable enemies.

Sept. 21st.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

Child Mortality.

IN September of last year I noted the results of questions put to a thousand Chinese mothers who came to the British Charitable Hospital out-patient clinique. I found it impracticable to get the ages at which the children died, but this was to some extent regulated by leaving out elderly women whose families had time to grow up, thus eliminating adults. The mortality of the first thousand was somewhat heavier than that of the second, but, as the figures will show, there is an appallingly high death-rate such as would not at the present time be tolerated in any European country.

1000 mothers each year.					1909		1910
Total number of children born...					4723	.....	3555
,,	,,	,,	,,	alive...	2342	.....	1899
,,	,,	,,	,,	dead...	2381	.....	1656
,,	,,	,,	boys	alive...	1301	.....	1023
,,	,,	,,	,,	dead...	1253	.....	869
,,	,,	,,	girls	alive...	1041	.....	876
,,	,,	,,	,,	dead...	1128	.....	787

In Hong-Kong, where there is birth registration, the infant mortality last year was *873 per 1000* among Chinese. It will be seen from the above table that the male births are in excess of those of the females. In European countries the female births steadily exceed those of the males and in England certainly there has been this female preponderance for a number of years. In some notes made by Dr. E. M. Merrins of Wuchang in Mid-China these results are corroborated. He found that in a series of anthropometrical

measurements on 1920 young Chinese the birth-rate was 64 per cent. for boys and 36 per cent. for girls. He also found the death-rate among the girls to be 7 per cent. higher than that of the boys. The average family all over the Empire consists, including parents, of 6·5 persons, but deaths reduce this figure to 4·5. It is interesting to compare this with the average of English and American homes, as no less a statesman than ex-President Roosevelt thinks that the Chinese at the present day are not increasing relatively as fast as the Anglo-Saxons, who will consequently soon be within measurable distance of equality with them in point of numbers, and therefore the industrial and commercial competition of the Chinese need not be feared abroad. Figures such as I have given should emphasise the need of national and provincial bureaux of vital statistics. There is now an intense national feeling among the Chinese to come into line with other civilised nations, but there still remain the utmost apathy and indifference to human life and public health.

Prohibition of the Importation of Cocaine.

The Imperial Maritime Customs have issued a notification to the effect that the manufacture in China by Chinese and foreigners of cocaine and of syringes, needles, and such-like instruments for its use is absolutely prohibited, and the importation of the same into China is likewise prohibited except in the case of duly qualified foreign medical practitioners and foreign chemists. The latter must conform to certain regulations which state that "duly qualified medical practitioners desiring to import cocaine or instruments for its use must sign a bond before their Consul stating the quantities to be imported and their value. Foreign chemists must adhere to the same conditions." Duty will be levied at the rate of 5 per cent. *ad valorem*.

The Cocaine Habit.

Not long ago a memorial was presented to the Throne by a provincial Viceroy, in which the attention of the Imperial Government was called to the fact that since laws had been established restricting the sale and use of opium the Chinese in no small numbers were finding consolation in cocaine. While in morphinomania the practice may cover an indefinite period without marked effect on the nervous system, the results of taking cocaine habitually are distinctly disastrous. Within five or six months a man may become a mental degenerate, not infrequently developing temporary insanity. An outbreak of the habit occurred last spring among marines in the American Legation Guard at Peking, and six privates were found suffering from it. The surgeon in charge, Dr. W. D. Owens of the United States Navy, in a series of 10 cases detected as an important sign, which has not hitherto been included in the usual classical description, epistaxis and ulceration of the nasal mucous membrane. In one patient who sought treatment for nasal catarrh, in addition to the ulcers, examination elicited necrosis of the nasal chambers. The usual mode of taking cocaine among Chinese and foreigners is by snuffing it or by cocaine-containing catarrh snuffs. Two patients who had been under treatment for epistaxis subsequently gave decided signs of being cocaine habitués. The epistaxis is accounted for by the severe congestion produced by cocaine upon the Schneiderian membrane and the increased blood pressure incident to its use. The impurities in many of the preparations used also have an ulcerative effect upon the sensitive membrane. An opium smoker suffering from the mental depression which ensues on eschewing the opium habit finds in cocaine a feeling of pleasure, relief from worries, a sense of elation, new life, and increased mental vigour. Hypodermic syringes are not much used in China, the method preferred being a quill, by means of which a dose can be passed well into the nasal cavity. It is to be hoped that the new regulations will be sufficient to prevent the easy purchase of cocaine, though in the absence of any coast preventive service there is no country in the world into which it is less difficult to smuggle goods or drugs of any description than China.

Sept. 26th.

A DEVONSHIRE CENTENARIAN.—Mrs. Caroline Sutherland of Plympton, who celebrated the hundredth anniversary of her birthday on Oct. 19th, 1909, died on Oct. 9th last.

Obituary.

DAVID HALKET STIRLING, M.D. EDIN.

THE death of Dr. D. H. Stirling, which occurred on Oct. 14th, as briefly mentioned last week by one of our Scottish correspondents, has been much regretted in Perth, his native city, where he spent a long and useful life in the service of all classes of his fellow citizens, and where, although he had reached the age of 81 and had retired from the more active duties of his profession, he remained a notable personality. His energy was remarkable, and throughout his career he was one of those able practitioners who cannot confine their interest to the technique of medicine and surgery His sense of duty led him to undertake social work and to labour continuously in many fields of usefulness where there seemed opportunity for the improvement of the people and the relief of human suffering. Therefore his death has left a great gap among his fellow-citizens at large, while "from the intimate personal point of view," writes one of his friends, "in the course of all the changes and experiences of a generation, never once did he fail in ready aid, never once did he turn aside from the way of kindness."

Dr. Stirling was born in Perth and was educated in the academy of his native town. Thence he proceeded to Edinburgh, where he graduated as M.D. and became a Licentiate of the Royal College of Surgeons in 1853. Thereafter he pursued his studies in Paris and Vienna, but he held that his education could never be completed until he was no longer able to appreciate the advances which are daily being made in his beloved profession. That was characteristic of his agile and untiring brain, and in the end he had the help of his daughter in pursuing his researches. After working for a time at Gray's Hospital and the District Asylum of Elgin Dr. Stirling returned to Perth and entered upon the work of general practice. He at first had doubts if he were right in continuing in a county town of moderate size, but happily he was persuaded and did not remove to a larger sphere. He found his place of trusted usefulness, as many other distinguished men have, in a centre where the advantages of a great population or a university are absent.

From 1868 until 1884 Dr. Stirling served on the staff of the Royal Infirmary, Perth, and there instituted a reorganisation of the nursing department as one of the improvements which marked his term of office. When he was appointed consulting medical officer the directors expressed their appreciation of the value of his work, and retained the advantages of his experience in conferring with him from time to time. It had become evident to Dr. Stirling that the Royal Infirmary could not undertake the care of the sick and afflicted of all kinds, and he conceived the idea of instituting the Hillside Homes for Treatment of Chronic Ailments to make good this defect. This institution was begun in a modest way; but with indefatigable zeal Dr. Stirling gathered round him influential supporters, and impressed them with new ideals as experience led him to develop the Homes. The original principle of limiting the sphere of its operations to incurable patients was found to be too partial. From year to year, therefore, the operations of the Homes have been enlarged, and all kinds of chronic patients have been admitted and suitably treated, in the various houses of the institution, the number for last year having been 246. The sanatorium branch of the Hillside Homes has been provided for phthisical cases in the early stages, and much good work has been done under Dr. Stirling's fostering care. The large sum of money which he collected during the last 33 years has been applied to the building and maintenance and to an endowment fund which gives stability to the whole institution.

Dr. Stirling's deep religious habit of mind was shown early in his career, for he was the founder of the City Mission, and continued to act as secretary till the end of his life. The poor people succoured by the mission were mindful of what he had done for them, and only a few months ago he was presented with an illuminated address bearing the touching words that "many would have liked to have shared in the testimonial, but only the poor were allowed to subscribe, and more than 400 gladly gave their mites." His medical colleagues also presented Dr. Stirling with his portrait on the occasion of his professional jubilee. He was thus fortunate

in the recognition of his worth and the encouragement afforded to him by his many friends.

Dr. Stirling married the sister of the late Dr. Lauder Lindsay. She predeceased him, as also did his son, Mr. James Lindsay Stirling, of the India Civil Service. Dr. Robert Stirling, his elder son, is a medical practitioner in Perth. It should be added that Dr. Stirling travelled widely and had a great admiration and personal knowledge of foreign missions. He wrote on leprosy in Norway, on medico-legal investigations, and on pulmonary tuberculosis.

Medical News.

THE SOCIETY OF APOTHECARIES OF LONDON.—As we announced last week, the Master and Wardens of the Society of Apothecaries attended Divine service on Oct. 18th, St. Luke's Day, at St. Anne's by the Wardrobe, and dined together in the evening at their Hall, the occasion being the induction of the new Master, Mr. A. T. Norton. The guests were the Deans of the Medical Schools and the Court of Examiners. After the loyal toasts, "The Society of Apothecaries" was proposed by Mr. E. Parker Young and responded to by the Master, who took advantage of the occasion to discuss the subject of the removal of names from the Register for "infamous conduct" and the objects of the private Parliamentary Bill recently promoted by the Society. In reference to the former, he said all the men whose names were removed from the Register deserved their punishment, but there were some pitiable cases of hard-working men whose names were removed for allowing an unqualified man to see patients. Such painful cases should be prevented; the circumstances leading up to the breaking of that law could be avoided, and as there were present many general practitioners in large practice and many lecturers and teachers on the staff of every large hospital and medical school, it behoved every one to bring to the notice of students about to enter into general practice that they should never have in their establishment any sort of assistant unqualified, and yet in his own estimation capable of visiting and prescribing for patients, for should they do so they would be sure to make use of his services at a pinch and thus render themselves liable to have their names removed from the Register. The Society of Apothecaries held an examination for dispensary assistants of both sexes, a searching examination on the knowledge of drugs, poisons, doses, incompatibles, method of dispensing, &c., qualifying candidates to assist medical men, not to act as pharmaceutists or to keep shops. On the subject of the private Bill recently promoted by the Society, the Master said the object of the Bill was to place the Society on a par with other examining bodies in the granting of diplomas in public health, dentistry, &c. The Act contained words to the effect that examining bodies holding examinations in medicine and surgery might grant diplomas in those subjects registrable by the General Medical Council. Other examining bodies had taken care that they should be specially mentioned in an explanatory clause as colleges, faculties, and universities, &c., and as the Society of Apothecaries did not come under one of these titles counsel had given the opinion that the General Medical Council could not register such diplomas granted by the Society. There could be no question that the Act was never intended to exclude the Society of Apothecaries, but he was given to understand that the private Bill was not proceeded with not on account of objectors, but on account of the fact that it would over-ride the Act of Parliament. The examining bodies, and indeed the whole profession, were in a state of unrest with regard to the Medical Acts, and these would certainly undergo revision as soon as a Government of either political creed could give time to their consideration, and the Society must see that it stood in by name with the other examining bodies. The toast of "The Deans of the Schools and the Court of Examiners" was proposed by the Senior Warden, and responded to by Sir John Broadbent for the Deans, and by Dr. J. W. Carr for the Court of Examiners. "The Chaplain and Preacher of the day," proposed by the Junior Warden, was responded to by the Chaplain. Between the toasts the company were agreeably entertained by well-rendered music.——At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—N. S. Adler (Sections I. and II.), Berlin; D. E. S. Davies (Sections I. and II.), King's College Hospital; E. B. Keen (Section I.), Charing Cross Hospital; J. K. Nariman (Section II.), Bombay and St. Mary's Hospital; and H. S. Tumber (Section II.), Sheffield.

Medicine.—G. A. Crowe, London and St. Thomas's Hospitals; E. D. Richardson (Section II.), St. Mary's Hospital; and C. J. Thompson (Section II.), Birmingham.

Forensic Medicine.—J. G. Lewis, Durham; and G. S. Richardson, Leeds.

Midwifery.—J. E. S. Sheppard-Jones, St. Thomas's Hospital.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—J. K. Nariman, E. D. Richardson, and H. S. Tumber.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. R. Jolly, *privat-docent* of Gynæcology, has been granted the title of Professor.—*Bologna:* Dr. Giuseppe Silvio Torri has been recognised as *privat-docent* of Medical Pathology.—*Budapest:* Dr. Felix Szontágh, *privat-docent* of Pædiatry, has been granted the title of Extraordinary Professor.—*Genoa:* Dr. Livierato, Extraordinary Professor of Internal Pathology, has been promoted to be Ordinary Professor.—*Göttingen:* Dr. Creite has been appointed *Oberarzt* of the Surgical Clinic.—*Halle:* The Charge of the University Otological Clinic being vacant through the death of Professor Schwartz, has been given during the vacancy of the professorial chair to Dr. Jsemer, who has been granted the title of Professor.—*Heidelberg:* Dr. Kurt Laubenheimer of Giessen has been recognised as *privat-docent* of Hygiene.—*Kharkoff:* Dr. Svietukhin, *privat-docent*, has been appointed Extraordinary Professor of Medical Diagnosis.—*Lausanne:* Dr. A. Eperon has been promoted to the chair of Ophthalmology in succession to the late Dr. Marc Dufour.—*Naples:* Dr. Fredrico Mazonne has been recognised as *privat-docent* of Surgical Anatomy and Operations; Dr. Raffaele Chiarolanza as *privat-docent* of External Pathology; and Dr. Luigi Guglianetti as *privat-docent* of Ophthalmology.—*Prague (German University):* Dr. Anton Ghon of Vienna has been appointed Professor of Pathological Anatomy.—*Vienna:* Dr. Heinrich Reichel has been recognised as *privat-docent* of Hygiene; and Dr. Michael Eisler, Edler von Terramare, as *privat-docent* of General and Experimental Pathology.

THE MURDER OF MAJOR JAMES HAMILTON NICHOLAS, R.A.M.C. (RETIRED).—At the Cornwall Assizes held at Bodmin on Oct. 21st, before Mr. Justice Bankes, James H. Nicholas, aged 26 years, was indicted for the murder of his father, James Hamilton Nicholas, L.R.C.P. Irel., L.R.C.S. Edin., Major R.A.M.C. (retired), at Maker, on August 16th last. Mr. S. Wolferstan, the medical officer at the Plymouth Prison, stated that the accused was of unsound mind. The jury found that he was also insane when he committed the crime, and his lordship consequently ordered the prisoner to be kept in custody during His Majesty's pleasure.

RUSSIAN DEMAND FOR "606."—The Moscow town government has ordered for its pharmacy a quantity of the Ehrlich "606" preparation and will, it is stated, dispense it regularly from the month of November. A message to the *Novoe Vremya* adds that the factory which makes the preparation is giving Russia a preference over all other countries, excepting Germany. Russia is calling for 100,000 phials for distribution amongst various municipal institutions in the capitals and provinces, 12,000 being the estimate for Moscow hospitals alone. An account appears in the same paper of observations made on two lepers at the Yamburg leper station with Professor Ehrlich's "606." Having consulted with Professor Ehrlich through the post, Dr. G. L. Yudelevitch determined to try the new method on some of the leper patients. Most of them manifested an indisposition to undergo the test. Two young men of about 20 years of age, whose leprosy was of about ten years' standing and whose internal organs were quite healthy, were consenting parties, and were selected. Both were severe sufferers from photophobia, and one of them had a large ulcer on the leg. Both were warned that the experience might turn out very unpleasant, and that particularly they might find any unpleasant effects mostly in the eyes. They suffered very little pain from the injection, and on the day after it was made, to the surprise of the medical attendant, their fear of the light had gone and their temperature had fallen by about a degree. The reduced

temperature remained permanent, as did the improvement in the eyes; whilst the ulcer on the leg of one of them shows signs of improvement—in fact, shows signs of cicatrisation. The results have been such as to encourage observations in the Yamburg Colony on a larger scale.

THE ALEXANDRA NURSES' HOME, DEVONPORT.—On Oct. 15th Mrs. F. B. Mildmay formally opened the new Alexandra Nurses' Home at Devonport.

PRESENTATION.—The committee which was appointed to arrange for the reception given by the corporation to the British Medical Association in the Guildhall in July has presented its chairman, Alderman Sir Thomas Crosby, with a silver centre-piece as a souvenir of the occasion.

DEVON MEMORIAL TO THE LATE KING.—At a public meeting recently held in Exeter under the presidency of the Lord Lieutenant of Devon, it was decided to invite subscriptions for a "King Edward VII. Memorial Fund." It was also determined that the fund should be administered by the council of the "Devon Queen Victoria Commemoration Fund," which was instructed to allocate the fund to district nursing associations within the county that are affiliated with Queen Victoria's Jubilee Institute for Nurses, and also to utilise some of the subscriptions in combating tuberculosis in Devon. Up to the present the sum of £1272 has been received.

BLOEMFONTEIN AS A HEALTH RESORT.—The weekly edition of the *Cape Times* of Sept. 21st contains an illustrated account of Bloemfontein from the point of view of a health resort. The town, which has a complete modern water-borne sewerage system and a plentiful supply of good water, certainly appears to be a desirable place to visit, the climate being good, the railway facilities convenient, and its natural features attractive. The statement of the writer of the article that "it is quite a frequent occurrence for periods of a month and longer to elapse without there being a single notification of infectious disease" is also a very good testimonial. It is interesting to note that the name Bloemfontein has no connexion with "flowery fountain," the town having got its name from a certain pioneer, Bloem, who made his temporary dwelling by the fountain which still exists near the Victoria Park.

MANCHESTER ROYAL INFIRMARY OLD RESIDENTS' CLUB.—A successful dinner of this recently formed club was held on Oct. 15th at the Midland Hotel, Manchester. The club arose out of a dinner held two years ago shortly before the closing of the old infirmary, for it was then felt that a periodical gathering should take place at which those resident at the same time should have an opportunity of seeing each other. Mr. F. A. Southam was President, and Dr. W. O. Jones (Bowdon), Dr. T. M. Johnson (Pendleton), Mr. Andrew Boutflower, and Dr. H. O. Pilkington acted as vice-presidents; 157 members were present. Dr. Pilkington proposed the toast of the "Manchester Royal Infirmary," and Dr. Arnold Jones that of "The President." Speeches were few and short in order to give men the opportunity of talking over old times. A strong feeling was expressed that meetings should be held every third year.

THE RÖNTGEN SOCIETY.—The Röntgen Society, which was founded in 1897, and is the parent society of the Electro-Therapeutic Section of the Royal Society of Medicine, will begin its fourteenth session on Nov. 3rd, at 20, Hanover-square, W. The lecture by Professor Rutherford will be listened to with much advantage. Professor Rutherford has the unique advantage of possessing more radium than anyone else in the British Isles. The price of radium at the present time is about £224,000 per ounce, and the price of small quantities is difficult to estimate, but the Röntgen Society possesses three carefully prepared standards by which the value of unknown quantities of radium can be compared and their value estimated. Professor Soddy of Glasgow, whose work is well known in connexion with radium and in conjunction with Sir William Ramsay and Sir James Dewar's work on helium, will also lecture. From Amsterdam will come a great physicist in the person of Professor Salomonson, who will unfold some original work on the mysteries of the working of an induction coil by which X rays are produced; and Professor Barkla of King's College will describe the results of some original work on X rays. Mr. J. Hall-Edwards, who has now freed himself from his former suffering caused by X rays, has also promised to take part. The lectures will be published in the Journal of the Röntgen Society. Invitations and further information can be had from the honorary secretary, Dr. A. Howard Pirie, 7, Harley-street, London, W.

DONATIONS AND BEQUESTS.—Under the will of the late Captain H. B. Murray the West London Hospital will receive £1050 for the endowment of a bed, St. Thomas's Hospital and St. George's Hospital will each receive £1000 for a similar purpose, and King's College Hospital and St. Mary's Hospital will also receive £1000 each. To the Hospital for Children, Great Ormond-street, and the Victoria Hospital for Children, Queen's-road, Chelsea, for the endowment of cots, the testator bequeathed £500 each, and £500 each to the Royal Dental Hospital and the London Fever Hospital, Liverpool-road, N., for general purposes, and £100 to the Cancer Hospital, Fulham-road, for general purposes.—Among other large bequests the late Mrs. Sarah Hancock has left £1000 to the Royal Hospital for Incurables at Putney.—As a result of a carnival held at Exmouth (Devon) the sum of £133 has been divided amongst several Exeter and Exmouth medical charities.—As a result of a horticultural show recently held at Alveston (Gloucestershire) the sum of £118 has been handed to the Bristol medical charities.

SOCIETY OF INFANT CONSULTATIONS.—A meeting was held on Oct. 19th at the Marylebone General Dispensary, under the chairmanship of Mr. A. Wynter Blyth, to inaugurate the formation of this society. Dr. Eric Pritchard, chairman of the executive committee, pointed out the value of infant consultations and the necessity of consolidating the many isolated efforts now being made to deal with the subject of infant mortality. Dr. J. F. J. Sykes stated that he was forming a society to deal with infant mortality in St. Pancras, and that he hoped their efforts would not overlap. On the proposal of the chairman it was decided that the society should be founded, having for its objects the bringing together of those interested in the work of infant consultations, and the recording of their experiences by holding meetings, reading papers, and collecting literature. It was agreed that the annual subscription should be 2*s.* 6*d.*, and all who wish for further information should address either of the honorary secretaries, Dr. Ronald Carter, 11, Leonard-place, Kensington, W., or Dr. Janet Lane-Claypon, 69, Prince of Wales's Mansions, Battersea Park, S.W.

BOOKS, ETC., RECEIVED.

AMERICAN LARYNGOLOGICAL ASSOCIATION (Secretary: Dr. James E. Newcomb, 118, West 69th Street, New York City).

Transactions of the Thirty-second Annual Meeting of the American Laryngological Association held at Washington, D.C., May 3rd, 4th, and 5th, 1910. Price not stated.

BAILLIÈRE, TINDALL, AND COX, London.

A Handbook of Intestinal Surgery. By Leonard A. Bidwell, F.R.C.S. Second edition. Price 6*s.* net.

An Elementary Course on Food-testing. By B. A. Burrell, F.I.C., F.C.S. Price 2*s.* 6*d.* net.

BLACKWOOD, WILLIAM, AND SONS, Edinburgh and London.

War, Police, and Watch Dogs. By Major E. H. Richardson, late 45th Regiment (Sherwood Foresters), Fellow of the Zoological Society. Price 5*s.* net.

CASSELL AND CO., LIMITED, London, New York, Toronto, and Melbourne.

Diseases of the Joints and Spine. By Howard Marsh, M.A., M.C. Cantab., F.R.C.S. New and enlarged edition, thoroughly revised by the Author and by C. Gordon Watson, F.R.C.S. Price 10*s.* 6*d.* net.

GREEN, WILLIAM, AND SONS, Edinburgh and London.

Manual of Diseases of Women. By W. E. Fothergill, M.A., B.Sc., M.D. Price not stated.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

International Clinics. Edited by Henry W. Cattell, A.M., M.D. Philadelphia, U.S.A., with Collaboration. Volume II., Twentieth Series, 1910.

LIVINGSTONE, E. AND S., Edinburgh.

The Hygiene of Infancy and Childhood and the Underlying Factors of Disease. By A. Dingwall Fordyce, M.D., F.R.C.P. Edin. Price 6*s.* net.

A Manual of Surgical Anatomy. By Charles R. Whittaker, F.R.C.S. Edin. Price 5*s.* net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

The Physiology of Reproduction. By Francis H. A. Marshall, M.A. Cantab., D.Sc. Edin. With a Preface by Professor E. A. Schäfer, Sc.D., LL.D., F.R.S., and Contributions by William Cramer, Ph.D., D.Sc., and James Lochhead, M.A., M.D., B.Sc., F.R.C.S.E. Price 21*s.* net.

MACMILLAN AND CO., LIMITED, London.

Chronicles of Pharmacy. By A. C. Wootton. In two volumes. Vols. I. and II. Price 21*s.* net.

A Text-book of Zoology. By T. Jeffery Parker, D.Sc., F.R.S., and William A. Haswell, M.A., D.Sc., F.R.S. In two volumes. Vols. I. and II. Price 36*s.* net.

MARHOLD (CARL) VERLAGSBUCHHANDLUNG, Halle-a.-S.

Die Hämophilie in der Augenheilkunde nebst Bemerkungen zur Durchblutung der Hornhaut. Von A. Vossius. Price Pf.75.

METHUEN AND CO., LIMITED, London.

Francis Bacon. A Sketch of his Life, Works, and Literary Friends; Chiefly from a Bibliographical Point of View. By G. Walter Steeves, M.D. Price 6*s.* net.

MILLS AND BOON, LIMITED, London.

813. By Maurice Leblanc. Translated by Alexander Teixeira de Mattos. Price 6*s.*

Woman and Marriage. A Handbook. By Margaret Stephens. With a Preface by Dr. Mary Scharlieb and an Introduction by Mrs. S. A. Barnett. Price 3*s.* 6*d.* net.

MURRAY, JOHN, London.

Philosophies. By Ronald Ross, F.R.C.S., D.Sc., LL.D., F.R.S., C.B. Price 1*s.* net.

OUSELEY, JOHN, LIMITED, Fleet-lane, Farringdon-street, London, E.C.

Recollections of Forty Years. Being an Account at First Hand of Some Famous Criminal Lunacy Cases, English and American; together with Facsimile Letters, Notes, and Other Data concerning them. By L. Forbes Winslow, M.B., D.C.L., LL.D. Price 12*s.* 6*d.* net.

REID, ANDREW, AND CO., LIMITED, Newcastle-upon-Tyne.

University of Durham College of Medicine, Newcastle-upon-Tyne. Calendar for the Year, 1910-1911. Price not stated.

ROUTLEDGE, GEORGE, AND SONS, LIMITED, London. (DUTTON, E. P., AND CO., New York.)

First Aid to the Child. A Guide to the Feeding and Treatment of Infants in Health and Disease. By D. Hastings Young, M.B., M.S. Edin., &c. Price 3*s.* 6*d.*

SCIENTIFIC PRESS, LIMITED, London.

Gynæcology for Nurses and Gynæcological Nursing. By Comyns Berkeley, B.A., M.B., B.C. Cantab., F.R.C.P. Lond., M.R.C.S. Eng. Price 2*s.* 6*d.* net.

SHERRATT AND HUGHES, London and Manchester.

The Problem of the Crippled School-Child. An Account of the Education and Treatment of Crippled School-children in a Residential School. By E. D. Telford, F.R.C.S. Price 6*d.*

UNIVERSITY CORRESPONDENCE COLLEGE, London.

The London University Guide, 1911. Containing the Regulations for Examinations to be held in 1911 and 1912. Price not stated.

UNIVERSITY OF BRISTOL (James Rafter, Registrar), Bristol.

University of Bristol. Calendar, 1910-11. Price not stated.

UNIVERSITY OF LONDON, South Kensington, London, S.W.

University of London. The Calendar for the Year 1910-1911. Price 5*s.* net; postage 5*d.*

Regulations and Courses for Internal Students. September, 1910. Price not stated.

Regulations for External Students. September, 1910. Price 1*s.* 6*d.*; postage 4*d.*

URBAN UND SCHWARZENBERG, Berlin und Wien.

Innere Sekretion, ihre Physiologischen Grundlagen und ihre Bedeutung für die Pathologie. Von Prof. Dr. Artur Biedl, Wien. Mit einem Vorwort von Hofrat Prof. Dr. R. Paltauf, Wien. Price, paper, M.20.; bound, M.22.

VIGOT FRÈRES, Paris.

La Vie Sexuelle et Ses Lois. Par le Dr. Anton Nyström de Stockholm. Préface du Dr. A. Marie. Price Fr.6.

L'Homosexualité et les Types Homosexuels. Par le Docteur Laupts (G. Saint-Paul). Nouvelle Édition de Perversion et Perversité Sexuelles. Préface de Émile Zola. Price Fr.6.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. (SIMPKIN, MARSHALL HAMILTON, KENT, AND CO., LIMITED, London.)

The Prescribing of Spectacles. By Archibald Stanley Percival M.A., M.B., B.C. Cantab. Price 5*s.* 6*d.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALDERSON, G. G., M.B., B.C., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at University College Hospital.

BENTON, WILLIAM, M.R.C.S., L.R.C.P. Lond., D.P.H., has been appointed Medical Officer of Health, Medical Officer to Education Committee, and Medical Superintendent of Isolation Hospital of the Borough of East Ham.

BRIDE, J. W., M.B., Ch.B. Vict., M.B., B.S. Lond., has been appointed Medical Officer at the Central Branch of the Manchester Royal Infirmary.

BROWN, A. J., M.R.C.S., L.R.C.P. Lond., has been appointed Accident-room House Surgeon at the Manchester Royal Infirmary.

BUCK, HOWARD, M.B., Ch.B. Vict., F.R.C.S. Eng., has been appointed Assistant Surgical Officer to the Manchester Royal Infirmary.

DEWAR, ALLAN, M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to the Denbighshire Infirmary, Denbigh.

DOUGLAS, W. R., F.R.C.S. Eng., has been re-appointed Surgical Tutor at the Manchester Royal Infirmary.

GILDER, M. D. D., M.B., B.S., F.R.C.S. Eng., has been appointed House Physician at University College Hospital.

GILL, S. E., M.D. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Assistant Physician to the Nottingham General Hospital.

HAILES, CLEMENTS, M.D. Edin., F.R.C.S. Edin., has been appointed Honorary Consulting Surgeon to the Bristol Eye Hospital.

HEY, W. H., F.R.C.S. Eng., has been re-appointed Resident Surgical Officer at the Manchester Royal Infirmary.

HIBBERT, CECIL, M.B., Ch.B. Vict., has been appointed Medical Officer at the Central Branch of the Manchester Royal Infirmary.

JOHNSON, J. PRATT, M.B., B.S Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Bacteriologist at the Government Laboratories, Johannesburg, Transvaal.

KENNEDY, M. J. C., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Portumna District of the county of Galway.

LANDSBOROUGH, J., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Tighnabruaich District of the county of Argyll.

MCLACHLAN, WILLIAM, M.D., Ch.B. Edin., has been appointed Assistant Bacteriologist at the Belmont Laboratories of the Metropolitan Asylums Board.

MADDEN, T. J., L.R.C.P. & S. Irel., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Kiltamagh District of the county of Mayo.

MARTIN, P. S., M.R.C.S., L.R.C.P. Lond., has been appointed Obstetric Assistant at University College Hospital.

MATHEWS, P., M.D., B.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Shrewsbury District of the county of Salop.

O'BYRNE, J. P., L.R.C.P. & S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Kilmacthomas District of the county of Waterford.

OLLERENSHAW, R., F.R.C.S. Eng., has been appointed Surgical Registrar to the Manchester Royal Infirmary.

PARRY, RICHARD, has been appointed Assistant House Surgeon at the Royal Albert Hospital, Devonport.

RAMSBOTTOM, A., M.D. Vict., D.P.H., has been re-appointed Assistant Medical Officer to the Manchester Royal Infirmary.

RATCLIFF-GAYLARD, JAMES, M.D. Brux., L.R.C.P. & S. Edin., has been appointed Honorary Surgeon to the Birkenhead Maternity Hospital.

RAYNER, H. H., F.R.C.S. Eng., has been appointed Assistant Surgical Officer to the Manchester Royal Infirmary.

RITCHIE, DOUGLAS D., M.B., Ch. B. Aberd., has been appointed Medical Assistant at Dundee Royal Infirmary.

SHATTOCK, C. E., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at University College Hospital.

WHITE, HUGH, M.B., B.S. Glasg., has been appointed Senior House Surgeon at the Royal Albert Hospital, Devonport.

WRIGHT, WILLIAM, M.B., Ch.B. Vict., F.R.C.S. Eng., has been appointed Dean of the Medical College at the London Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BEDFORD COUNTY HOSPITAL.—House Physician. Salary £80 per annum, with apartments, board, and washing.

BUXTON, DEVONSHIRE HOSPITAL.—Assistant House Surgeon for six months. Salary £70 per annum, with apartments, board, and laundry.

CANCER HOSPITAL, Fulham-road.—Surgeon.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £70 per annum, with board, lodging, and washing.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—House Surgeon, unmarried. Salary £80 per annum.

CHESTER GENERAL INFIRMARY.—House Physician. Salary £90 per annum, with residence and maintenance.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £80 per annum, with board, apartments, and laundry.

DEPTFORD MEDICAL MISSION.—Superintendent, non-resident. Salary £170 per annum.

FOLKESTONE, ROYAL VICTORIA HOSPITAL.—Resident House Surgeon. Salary £100 per annum, with apartments, board, and laundry.

FRENCH HOSPITAL, 172, Shaftesbury-avenue, W.C.—Second Resident Medical Officer, unmarried. Salary £50 per annum, with full board and laundry.

GORDON HOSPITAL FOR RECTAL DISEASES, Vauxhall Bridge-road, S.W.—House Surgeon. Also Surgeon to Out-patients.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—Surgeon.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with rooms, board, and washing.

KING'S COLLEGE HOSPITAL, London, W.C.—Senior Surgical Registrar and Tutor.

LEEDS GENERAL INFIRMARY.—Resident Obstetric Officer for six months, Two House Physicians for six months, and One House Surgeon for 12 months. Board, washing, and lodging provided.

LIVERPOOL, CITY EDUCATION COMMITTEE.—School Medical Officer. Salary £250 per annum.

LIVERPOOL INFIRMARY FOR CHILDREN, CLINICAL SCHOOL.—Resident House Physician. Salary at rate of £60 a year, with board and lodging.

LONDON HOSPITAL, E.—Medical Officer in charge of Department of Electrical and Physical Treatment.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Pathologist and Bacteriologist. Salary at rate of 50 guineas per annum.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Resident House Surgeon. Salary £100 per annum, with rooms, attendance, board, and washing.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80 per annum, with board, residence, and washing.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—House Physician. Salary £75 per annum, with board, residence, and washing. Also Honorary Dental Surgeon.

NEWTOWN, WELSH NATIONAL MEMORIAL.—Lecturers on the Prevention and Cure of Tuberculosis. Salary not exceeding £200, plus railway expenses, for a six months' engagement.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with board, lodging, and washing.

PENDLEBURY, MANCHESTER CHILDREN'S HOSPITAL.—Visiting Surgeon. Salary £100 per annum.

POPLAR AND STEPNEY SICK ASYLUM, Bromley, Middlesex, E.—Third Assistant Medical Officer. Salary £120 per annum, with rations, apartments, and washing.

PRESCOT UNION WORKHOUSE AND INFIRMARY, Whiston.—Assistant Medical Officer. Salary £170 per annum.

PRESTON ROYAL INFIRMARY.—Senior and Junior House Surgeons, unmarried, for six months. Salaries £80 and £60 per annum respectively, with board, residence, and washing.

ROYAL EYE HOSPITAL, or the ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL, Southwark, S.E.—House Surgeon for six months. Salary £52 10s. per annum, with board and residence. Also Clinical Assistants.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £60 per annum, with rooms, board, and washing.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, all found.

ST. THOMAS'S HOSPITAL.—Physician to Out-patients.

SALFORD UNION INFIRMARY, Hope, Pendleton.—Medical Superintendent. Salary £350 per annum.

SOUTHAMPTON FREE EYE HOSPITAL.—Honorary Physician.

SUNDERLAND UNION WORKHOUSE.—Resident Assistant Medical Officer, unmarried. Salary £150 per annum, with rations, apartments, and washing.

THROAT HOSPITAL, Golden-square, W.—Honorary Assistant Surgeon.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £40, with board, lodging, and laundry.

WAKEFIELD GENERAL HOSPITAL.—Senior House Surgeon, unmarried. Salary £120 per annum, with board, lodging, and washing.

WANDSWORTH UNION INFIRMARY, St. John's Hill, near Clapham Junction.—Junior Assistant Medical Officer, unmarried. Salary at rate of £120 per annum, with board, lodging, and washing.

WEST AFRICAN MEDICAL STAFF.—Number of Appointments. Salary £400 per annum.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Physician for Diseases of Women. Also Anæsthetist.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Act at Colne, in the county of Lancaster; and at Ullapool, in the county of Ross and Cromarty.

Births, Marriages, and Deaths.

BIRTHS.

CHURCHILL.—On Oct. 19th, at Crawford House, Wembley, the wife of Joseph H. Churchill, M.R.C.S., L.R.C.P., of twin sons.

FREEMAN.—On Oct. 18th, at Devonshire-place, W., the wife of Dr. John Freeman, of a son.

JEANS.—On Oct. 22nd, at 30, Rodney-street, Liverpool, the wife of Frank Jeans, M.A., M.B. Cantab., F.R.C.S. Eng., of a daughter.

SINGTON.—On Oct. 25th, at Cleveland-gardens, Hyde Park, to Dr. and Mrs. Harold S. Sington, a son.

SPRAWSON.—On Oct. 22nd, at Manor House, Milton, Wells, Somerset, the wife of Captain C. A. Sprawson, M.D. Lond., I.M.S., of a son.

MARRIAGES.

BROWNE—PETER.—On Oct. 19th, in Looe Parish Church, Selina Ethel, second daughter of R. A. Peter, J.P., of Klymiarven, Looe, to Major Frank Dennis Browne, I.M.S.

FOLLIT—HURST-HODGSON.—On Oct. 22nd, at St. Pancras Church, London, Harry Harold Baily Follit, M.A. Cantab., M.R.C.S., D.P.H., to Hermione Millicent Burney, eldest daughter of Thomas Emanuel Hurst-Hodgson, of St. Mary's Abbey, Bedford.

HOW—SUTTHERY.—On Oct. 20th, at St. George's Church, Weald, Sevenoaks, by the Rev. Harold Sutthery, brother of the bride, and the Rev. W. Minto Roberts, Vicar of the parish, F. F. Lawrence How, son of Frederick How, Esq., of The Forelands, Chesham, to Ethel Catharine (Dick), daughter of the late Rev. William Sutthery, Rector of Clifton Reynes, Bucks, and Mrs. Sutthery, Chesham.

DEATHS.

CÆSAR.—On Oct. 17th, the result of an accident, Richard Thompson Cæsar, M.R.C.S., L.S.A., of Bearsted, Kent, aged 72 years.

MRS. KAYLER regrets that she is unable to reply personally to the many kind letters of sympathy she has received from the friends and colleagues of her deceased father, Sydney Ringer. She trusts they will accept this acknowledgment of her sincere thanks.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

PHYSICIANS AND CITIES.

To the Editor of THE LANCET.

SIR,—Your note last week under the above heading was very suggestive of the growing prevalence of sanitary doctrines.

The view taken of the medical man's position in the State has varied, naturally enough, at different periods of the world's history. In Homer's time the army surgeon was regarded as worth a large number of other men on account of his skill—

> ἰητρὸς γὰρ ἀνὴρ πολλῶν ἀντάξιος ἄλλων
> ἰοὺς τ' ἐκτάμνειν ἐπί τ' ἤπια φάρμακα πάσσειν.
>
> Il. xi. 514.

"For a leech is worth many other men, to cut out arrows and to spread soothing applications (on the wound)."

Plato in his Republic declares that the ideal physician should be one who had experienced all kinds of diseases in his own body. But he was not to treat every kind of disease, only epidemics and wounds. Patients who were ill from their own fault—i.e., from excess in any shape or form—were to be left to die, being no good to themselves or to the State (The Republic, Bk. III., 407 et seq.). Modern ideas differ from this, and it is not often nowadays that a physician is also an architect, at least not with dead stones. But the glory of the modern profession of medicine is that it deals with the living stones of the great temple of humanity. Drainage, sanitation, and prevention of disease are the edifices which the modern medical man raises in our modern cities. It is difficult to realise that only 50 years ago much of the space between St. Bartholomew's Hospital and St. Paul's was occupied by cellar slaughter-houses, into which wretched sheep were pitched, often to lie awaiting slaughter with broken legs, while blood and offal lay about in the gutters. From these and similar horrors with their train of disease and death modern medicine has delivered us. It is a significant fact that to-day anyone passing in front of the National Gallery sees the excavation for one of the main sewers of London in the roadway. The æsthetics of healthy bodies are no less important than the æsthetics of beautiful buildings or pictures, although a healthy community has a tendency to demand beauty both in its recreations and its buildings.

The Town Planning Conference, to which you have alluded but briefly, shows that this feeling is now abroad.

I am, Sir, yours faithfully,

A BART'S MAN.

BURIAL GROUNDS AND PUBLIC HEALTH.

A PROPOSAL was made recently by the Eastbourne burial board with the object of acquiring additional land for the enlargement of the principal borough cemetery at Ocklynge, but on the grounds that the public health might be endangered if such an enlargement were made the proposal has been abandoned. Application was made by the board to the Duke of Devonshire, the owner of the land adjoining the cemetery, but the views of his grace were foreshadowed by the figure he placed on the land. Seventeen years ago the late Duke sold 10 acres for £7000, or £700 an acre. The present Duke has asked £12,500 for 7½ acres, or about £1700 per acre. A vestry meeting discussed the offer, but decided before proceeding further to consult Dr. W. G. Willoughby, medical officer of health, and that gentleman's report has resulted in the Duke of Devonshire withdrawing the offer he made. Dr. Willoughby's report was as follows: "From a sanitary point of view the chief nuisances liable to be caused by the cemetery are the pollution of water-supplies and the emission of obnoxious gases from the ground. As there are no domestic water-supplies in the vicinity to be considered, the former of these two items hardly comes into consideration, the Eastbourne water-supply being taken from sources some miles distant. The matter of the emission of gases is, however, more important. The opinion of the official medical advisers of the English Government, according to the memorandum of 1838, was that a distance of 200 yards is sufficient to prevent any injury to health as regards noxious matter transmitted through the air from a well-kept cemetery. The desirability of the enlargement of the Ocklynge cemetery, from a sanitary point of view, depends, therefore, on its liability to be sooner or later closely surrounded by houses, and if so, the fewer persons buried there the better. Judging from past experience, there being apparently no provision to prevent houses from being built close up to a cemetery, houses will probably be built within what might be called the 'danger zone' of the Ocklynge cemetery, whether enlarged or not. The more the interments, the greater the possible risk; the number of corpses in proportion to space being also an important consideration." It would have been difficult to see how after such a report as this the burial board could have come to any other conclusion than to abandon the proposed extension. Moreover, the question is not a

very pressing one. Consecrated land will be available at Ocklynge until about the year 1925, and unconsecrated until about the year 1916, at which latter date burials of that class will take place at Langney. Here there are 16½ acres of land—sufficient burying-space for another 30 or 40 years.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1910:—

Nov. 7th-12th (Cape Town).—Twelfth South African Medical Congress (1910).

In 1911:—

May-October (Dresden).—International Hygiene Exhibition.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Birmingham).—British Medical Association.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September (Brussels).—Exhibition of Fractures.
Sept. 11th-16th (The Hague).—Thirteenth International Congress on Alcoholism.
,, 18th-23rd (Sydney).—Australasian Medical Congress.
,, 24th-30th (Rome).—International Congress on Tuberculosis.
,, 25th-29th (Rome) Seventh International Congress of Dermatology and Syphilology.
October (Cologne).—International Congress of Criminal Anthropology.

In 1912:—

September (Prague).—International Congress of Radiology and Medical Electrology.
September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
September (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

In 1913:—

(London).—Seventeenth International Congress of Medicine.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

TUESDAY.

PATHOLOGICAL SECTION (Hon. Secretaries—C. Bolton, J. C. G. Ledingham), at the London Hospital Medical College, E.: at 8.30 P.M.

Dr. Leonard Hill: The Influence of the Movement of the Air on Human Beings.
Dr. Martin Flack: Action of the Serio-auricular Node.
Mr. F. W. Twort: Cultivation of Bacillus Lepræ and the Bacillus of Johne's Disease.
Dr. W. Bulloch and Mr. P. Fildes: A Study of Tubercle Bacilli Isolated from Cases of Pulmonary Tuberculosis in Man.
Dr. James McIntosh: The Influence of dioxydiamidoarsenobenzol on Spirochæte Infections.
Dr. W. Bulloch: The Pedigree of a Great Family of Hæmophiliacs.
Dr. H. M. Turnbull: Pathological Anatomical Preparations.

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—G. F. Blacker, J. H. Targett), at 11, Chandos-street, W.: at 8 P.M.

Specimens:
Lieut.-Col. Dimmock: Sarcoma of Ovary.
Mr. J. Barris: Intestinal Obstructian caused by a Fibromamyoma Uteri.
Mr. P. P. Cole: A Case of Pseudo Hermaphroditism.
Dr. H. N. Lewers: Sarcoma of the Vulva.
Dr. Clifford White: Sarcoma of the Vulva.
Mr. Douglas Drew: (1) A Case of Hermaphroditism; (2) Sarcoma of the Uterus.
Dr. G. F. Blacker: Sarcomatous Polypus of the Uterus.

Paper:
Dr. Archibald Donald and Dr. Fletcher Shaw: Symptoms and Treatment of Chronic Endometritis, with Special Reference to the After-results of Curettage.

NEUROLOGICAL SECTION (Hon. Secretaries—E. Farquhar Buzzard, Wilfred Harris): at 8.30 P.M.

Presidential Address:
Dr. J. A. Ormerod: Two Theories of Hysteria.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—L. Hemington Pegler, W. H. Kelson), at 11, Chandos-street, W.: at 5 P.M.

Opening Remarks by the President (Dr. P. Watson Williams).

Cases:
Will be shown by Dr. Dan McKenzie, Mr. Harold Barwell, Dr. StClair Thomson, Dr. Jobson Horne, Dr. Cyril Horsford, Dr. Scanes Spicer, Dr. William Hill, and others.

SECTION OF ANÆSTHETICS (Hon. Secretaries—R. W. Collum, Mrs. Dickinson Berry): at 8.30 P.M.

Paper:
Mr. A. L. Flemming: Prolonged Anæsthesia Maintained by Ether and Gas Alternately.

Demonstration:
Mr. J. F. Trewby: A New Inhaler for Administering Nitrous Oxide Gas by the Nasal Method.

RONTGEN SOCIETY, 20, Hanover-square, W.

THURSDAY.—8.15 P.M., Dr. G. H. Rodman: Presidential Address.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Dr. Barnes: Motion—That Qualified Surgeon Dentists be admitted to the Membership of the Society. Clinical Cases.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersith.

FRIDAY.—8 P.M., Cases.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY—5 P.M., Dr. G. N. Pitt: The Results of Bronchial Obstruction. (Bradshaw Lecture.)
THURSDAY.—5 P.M., Sir T. C. Allbutt, K.C.B.: Greek Medicine in Rome. (Fitz Patrick Lecture.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY.—5 P.M., Mr. Shattock: Specimens illustrating Rickets, Cretinism, &c, (Museum Demonstration.)
FRIDAY.—5 P.M., Prof. A. Keith: Specimens illustrating Acromegaly and Some Allied Conditions. (Museum Demonstration.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. Galloway: Clinique (Skin). 5.15 P.M., Lecture:—Dr. C. R. Box: Syphilitic Hemiplegia in Childhood.
TUESDAY.—4 P.M., Dr. E. Pritchard: Clinique (Medical). 5.15 P.M., Lecture:—Dr. G. E. Herman: Abortion.
WEDNESDAY.—4 P.M, Mr. C. Ryall: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. G. H. Savage: Recoveries, Remissions, and Relapses in Mental Disorder.
THURSDAY.—4 P.M., Mr. J. T. Walker: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. W. Pasteur: Radiography in Medical Diagnosis.
FRIDAY.—4 P.M., Mr. S. Stephenson: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Edwards: Rectal Surgery.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Davis: Diseases of the Throat and Nose, the Lines on which Treatment should be Based. (Lecture II.)
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine. (Lecture III.)
THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: "A Paralytic Stroke."
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Mr. R. Lake: Aural Vertigo.
TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 2.15 P.M., Special Lecture:—Dr. F. Taylor: Stokes-Adams Disease.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4 30 P.M., Special Lecture:—Dr. C. O. Hawthorne: Spastic Paralysis in Early Life.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. Howell Evans), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).
TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinic:—Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).
FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. Howell Evans). 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie). 4.30 P.M., Lecture-Demonstration:—Dr. G. G. Macdonald: Puerperal Infection.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Taylor: Clinical Cases.
FRIDAY.—3.30 P.M., Clinical Lecture:—Mr. S. Scott: Vertigo.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3.45 P.M., Lecture:—Dr. A. Wylie: Larynx

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Syphilis—History and Primary Invasion (Constitutional and Local); Eruptions, Erythematous (I., Macular, and II., Maculo-Papular).

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Dr. Maguire: Intra-thoracic Tumours.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. F. C. Moore: The Differential Diagnosis of Dyspepsia. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.),

TUESDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (2nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (3rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (5th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 26th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 20	29·60	N.E.	0·04	85	54	41	45	46	Cloudy
,, 21	29·76	N.E.	0·01	68	58	45	47	48	Overcast
,, 22	29·93	N.E.	...	60	56	48	50	52	Overcast
,, 23	29·93	N.E.	...	68	52	45	48	50	Fine
,, 24	29·81	E.	...	71	56	40	49	51	Overcast
,, 25	29·93	E.	...	69	58	51	52	53	Cloudy
,, 26	30·11	E.	...	92	60	53	54	55	Cloudy

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The Fitz Patrick Lectures

ON

GREEK MEDICINE IN ROME.

Delivered at the Royal College of Physicians of London

BY SIR T. CLIFFORD ALLBUTT, K.C.B., M.D. CANTAB., F.R.S.,

REGIUS PROFESSOR OF PHYSIC IN THE UNIVERSITY OF CAMBRIDGE.

LECTURE I.

PRESIDENT AND FELLOWS,—My last lecture* ended with the name of Soranus, and concerning obstetrics.

SORANUS was of the sect of the Methodists, but was far too great a man to be enthralled in any sect. Galen, who angrily repudiated Methodism, yet spoke of Soranus with unwonted respect. The renown of this great physician, from the centuries of Tertullian and Augustine through the Middle Ages, rested chiefly in this field of medicine; but to confine his distinction to any one part of medicine would do him less than justice. Soranus, who received his medical training in the later Alexandria, was a great physician in all Medicine; and, as many of my colleagues are well aware, no inconsiderable part of his notable work on "Acute and Chronic Diseases" has survived in the transcript of Caelius Aurelianus, who lived 300 years later. Still upon the Gynæcology we may tarry for a moment, as upon this side of his work Ilberg has just published an interesting essay,[1] an essay which forms a part of the large and scholarly work upon medical classics undertaken by the school of Diels.

The enormous ascendency of Galen, his vast output in which he even surpassed that which amazes us in the writers on many subjects in the first two centuries of the Empire; his intricate and ardent dialectic, which endeared him to the logicians and rhetoricians of his own and many later centuries; his teleological philosophy, which endeared him to the Church; and, above all, the brilliancy and fertility of his genius, by overshadowing obscured and even effaced the traditions and documents of his predecessors. Lost in the glamour of Galen, in the Middle Ages even the invaluable Celsus was forgotten. Not only so, but the animosity of Galen against Methodism threw the work of this school into the greater neglect. Thus it was, as again in the time of the discovery of printing, that a turn of fashion brought destruction to many a precious manuscript. Yet if in the obliteration of his works Soranus was almost as unfortunate as Asclepiades, he was more fortunate in the upholding of his good name; in all later times he has been regarded as a great if half-forgotten physician. If, then, we have to appreciate the work of Soranus, we have not to refurbish his character.

FRAGMENTS OF SORANUS ON GYNÆCOLOGY.

Of his important work on Gynæcology but little survives, nothing directly; but by a Cuvierian process of piecing together fossil fragments Ilberg has attempted, not unsuccessfully, to discern and to rectify some farther part of the relics of Soranus concerning this subject.

In the Bibl. Nationale is a manuscript, dating from the end of the fifteenth century (Parisinus graecus, 2153), of a kind of Handbook or Articella, a compilation without author's name, the middle or gynæcological part of which is a document of 67 leaves, upon which is written in a rough hand, "Σωρανός ἐστιν." On the several attributions of the constituent parts of this handbook, which in the fifteenth and sixteenth centuries had a great vogue in the practice of midwifery, I cannot here dwell in detail; suffice it to say that their distribution is now more explicit. The first critical edition of the Parisinus, by Dietz, was posthumously published, without the advantage of the editor's own care, in 1838 as being, the whole of it, from the Περὶ γυναικείων πάθων of Soranus. But the part attributable to the master himself was less than half of it. Ermerins did something to discriminate its contents, especially in comparison with those excerpts of Soranus which are embedded in the XVIth or Gynæcological Book of the Ἰατρικὰ of Aetius, a compiler of the sixth century as yet imperfectly edited. But the Parisinus contains additions, both of sentences and of chapters, which are significant as to authenticity, and are also of substantial importance; especially those on diseases of children, and on anatomy and physiology. The Aetius chapters (XVI. 50–87) seem to have been, as it were, a canvas upon which certain "Soranea" were worked in.

The next important step in the reconstruction of Soranus was taken by Valentine Rose. In the fifteenth and sixteenth centuries a certain Latin book was familiarly known to obstetricians as the *Gynaecia Muscionis*. Its history is a curious one, for it is the Latin form of it which proves to be the original work, the earliest known copy being an illustrated MS. of the IXth–Xth century now at Brussels.[2] The Greek rendering, under the fancy ("mundgerecht") title of "Moschion," falsely supposed to be based on the "Genetia" of Caelius Aurelianus, and to be of the VIIIth–IXth century, is much later. It was the erroneous notion of its antiquity which Valentine Rose corrected in an able study (Soranus, 1882) wherein he proved the "Moschion" to be but a translation of Muscio, and—as Moschion—to have a pedigree not older than the fifteenth century; and, moreover, to be of very subordinate value. Many of the ignorances and errors of this "Graeculus" are set forth by Ilberg. Getting rid then of this Greek pastiche, it is on the Latin midwives' book that we are to fall back for such light as it may throw collaterally upon the Soranus from whose hands it was supposed to have come. Thus to verify the Soranus relics these relations had to be made clear.

Now "Muscio" professes to have had before him two works of Soranus, a brief and catechetical, and an ampler work. He followed in the main the briefer and more didactic of the two, but also he padded out his rendering from the larger treatise. Soranus, in what we know of him, was prone to be sententious, to utter maxims to be learned by rote; this we perceive, for instance, in the substantial fragments of the "Acute and Chronic Diseases" preserved by Caelius Aurelianus. There are similar reasons to suppose also that, after writing his larger books, he drew up a book of Responsiones or catechism.[3] Now, in these features of composition Muscio coincides likewise with Soranus as we know him from other sources. The illustrations probably belonged originally to the smaller or catechetical book of Soranus, and were reproduced to facilitate the abbreviation.[4] They have been carefully studied by many commentators, lately by Sudhoff.[5]

The outcome of this farther study of the Parisinus compilation Ilberg sums up as follows. Of the original date of it there is no evidence; the Byzantine physician put in nothing characteristic of himself or of his period. A tag from Meletius may well have been inserted later. It may have been written in the decadence of the seventh or in the awakening of the ninth century. The anonymous author had before him in its two forms the work of Soranus—Περὶ γυναικείων πάθων, and also the XVIth Book of Aetius; and these he undertook to blend into a new book. Passing over alteration of chapters, the scissors of the compiler were applied to what were probably four books of the original Soranus. Book I., though with some modification of form, he reproduced nearly in full. Book II. was also preserved, and its order better retained. Book III. was more destructively dealt with, and moreover, after the example of Aetius, suffered interpolations and corruptions. Book IV. suffered still worse things ("traurig ruinirt"); it was reduced for the most part to perverted scraps. On the whole, it would seem that the Aetius book was the framework of the compilation, and supplied, indeed, the greater part of it; and, as Ilberg remarks, compilers were far less scrupulous than transcribers.

Up to the time of Oribasius the texts of Soranus seem to have been in fair preservation; so that from this valuable

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* THE LANCET, Nov. 27th, 1909, p. 1578.

[1] Die Überlieferung der Gynaekologie des Soranus von Ephesus, von Johannes Ilberg. Leipzig, Teubner. 1910. (Das xxviii. Bd. der Abhnl. d. Phil. hist. Klasse d. K. Sach. Geschlft. d. Wissenschaften. No. II. mit sechs Lichtdrucktafeln. The appendix contains photographs of two pages of the Parisinus MS. and seven of the illustrations from the Brussels MS. of the uterus in normal and abnormal conditions of pregnancy.

[2] Bibl. Roy., 3701–3715. (Muscio occupies the second part of it).

[3] Cf. the "Interrogationes" of C. A.

[4] There is no difficulty about the date of such illustrations. There were illustrations in Vitruvius. At an earlier date Aristotle refers to σχήματα and διαγραφαί in the History of Animals; and at a later Galen seems to have produced diagrams (ὑποδείξεις διὰ γραμμῶν) of the muscles and nerves of the arm, and of optical phenomena. The Alexandrians produced many illustrations.

[5] Studien d. Gesch. de Med. IV.

compiler many smaller emendations and additions have been obtained. Probably Oribasius contains also more of Soranus, portions at present beyond identification, though some passages of the common Alexandrian tradition may have passed to Oribasius directly from Philumenos.

SORANUS AS PHYSICIAN AND SURGEON.

Of the traditions which bound Soranus to the earlier Alexandria, one of the chief was the works of Demetrius of Apamea, a disciple of Herophilus who flourished about 250 B.C., whose teaching, especially in respect of etiology, Soranus cites with admiration. It was the boast of the Methodists, indeed, especially of the more empirical section of them, that they looked *μόνον πρὸς τὸ πάρον*, for in their opinion to pry into causes led off to alien curiosity; while the only anatomy they required for clinical purposes (*χρηστομαθείας ἕνεκα*) was the state of constriction or relaxation of the tissues affected (*χαλᾶν ἢ στεγνοῦν*); thus for them immediate clinical observation was all in all, and normal physiology a matter of indifference. But it would have been surprising if, Methodist as he was, one standing in the following of Herophilus should have accepted the arid universals of that sect, regarded anatomy as *ἄχρηστος*, as ministering to mere curiosity, and dismissed the study of causes as otiose. In these respects, as in many others, Soranus, as Galen perceived, was greater than his school. The larger idea of molecular biology, and that of disease as a deflexion from the normal, were being degraded into the arid formulas of the later Methodists, a sterility which justly provoked the ire of Galen; and from their shackles Soranus did not shake himself free. He was, I think, more of a captive than Ilberg seems fully to admit,—to these empty abstractions, the *κοινότητες* of *strictum* and *laxum*, under which clinical diagnosis fell into little more than the dilemma of *στεγνοπαθοῦν καὶ 'ρευματιζόμενον ὀξέως ἢ χρονίως*. Still it is no less true that these views—these concentrations on *τὸ πάρον*—fastened attention upon the masterly clinical observations in which Celsus, Soranus, and Archigenes excelled. The capacity of Soranus as a surgeon we may recognise in his teaching on fractures and luxations as preserved in Aetius and Niketas. In Ilberg's words, then, Soranus "ist kein Toter"; both in learning and practice and in loyal regard to tradition he stands on the heights of ancient medicine. His disciples were taught not only "claudere librum ut cogitent," but also, and yet more, *claudere librum ut videant et curent*.

It is in his therapeutics that the methodist doctrines betray themselves unmistakeably, as in the ingenuity of local applications to command the permeability of the tissues of the parts affected. In his surgery we find Soranus cautious and conservative; he did not betake himself to operation until other means had failed.

As to his ethical attitude, which was honourable, Ilberg refers us to a paper of his own[6]—one to which I have not ready access—on *φθόρα*, i.e., the decision between the life of mother and child, as illustrated by the maxims of Soranus Aetius.

PNEUMATISM.

Passing, as needs must by leaps, from period to period, in the next place I propose to invite your consideration of the sect known as the Pneumatists, and of the doctrine and idealism of the Pneuma. I separate the history of the sect from the history of the idea, because as a sect the phase was brief and its doctrines inconsistent; though the idea is one which in manifold forms has dominated and animated the minds of men beyond the domination and beyond the inspiration of any other idea in physiology: and this with a fervency which has penetrated far beyond the limits of the biological sciences. Indeed, as we utter the word inspiration we feel that the glow of the spirit, which from the ancient legends of the creation of life to the messages of our modern ethereal telegraphy, from the hauntings of the Great Spirit in primeval man through the storms of superstition to the haven of the soul in his purer communion with the Divine, has moulded the whole story of man, and embedded itself even in his tongue. Inspiration is just air; but what air? What in air, or of it, can be fraught with creative power? and how can it endow the tabernacle of clay with energy, life, motion, and thought?

One of the most touching aspects of human life is the perennial warfare, the rage between the idealist and the man of affairs; nay, it is even of this war that tragedy and comedy are begotten. It is a materialist prophet of to-day who bewails "the untameable wildness of the good." This is the story of Paul before Festus; of Francis before Elias and the Pope; of the "Lady Helen of Troy pacing to and fro with a nosegay in her golden shawl" before Mrs. Elizabeth Fry; of Garibaldi before Cavour; and in comedy of Quixote before Sancho, or the modern curate preaching Tolstoy before his country rector. "Church," said Mr. Tulliver, "was one thing, common sense was another, and he wanted nobody to tell him what common sense was." The dilemma is *ambulando* insoluble.

And of this kind is the story of the great Ionian idealists, the philosophic dreamers before Hippocrates and Aristotle; and the story of the Greek speculative reason, touched with an oriental mysticism, before imperious Rome. A distinguished modern author of the extremer Western variety has lately reiterated with uncompromising emphasis that in the sphere of ideas we owe all we are worth to the Greeks, a claim, however, which cannot be admitted without profound qualification. The Greek was the prophet of the "*Via Media*"; but to the idealist the *via media* has always been detestable, as detestable to John Knox as to John Henry Newman. The achievement of the Greek was that the plane was so lofty on which the seer of both blended and integrated the ideal with the actual; that his *via media* was so high a mean between the imperative categories of the idealist and of the materialist. By an exquisite insight and tact he renounced not only much of the uses of the comfortable and pragmatic kind, but, as we perceive in Plato as well as in Aristotle, he definitely relinquished also the vision of some of the elements pertaining to the ideal society. The Greek saw "the untameable wildness of the good," saw it even with sympathy; but he saw also how much of it would not come into his picture.

The "practical" nature of Roman thought.—Now we observed last year that toward these horizons of blended material and spiritual discernment Rome had not a lofty outlook. We are told, and not without some congratulation, that Rome was too "practical" for such issues; that the average Roman was above all things the practical man. Well, were he as audaciously satisfied as Dr. Archimedes Silverpump of the Lycurgus House Academy, he had notwithstanding his enormous place in the world's history. Still it is true that his work, fundamentally necessary as it was, the necessary foundation upon which modern Europe should be built, was yet but a substructure, and the Roman a labourer to be dismissed when this task was done. And, as we observed also in last year's lectures, while the Roman pavior was wielding his beetle, while with plumb and square he was shaping and laying the great blocks for the edifice upon which we are designing and are building the superstructure, even then ideas could not sleep. We have seen how the leaven of alien minds in Rome was fermenting, expanding, and penetrating to the joints and marrow of her work; and, as it in mockery, displaying upon her sullen atmosphere phantoms of what after her was to be; even then Rome was not permitted to forget that man cannot live by bread alone; not even if the loaf be protected by the policeman. It is this untameableness of ideas, this unconquerable mind of man, which makes the fascination of our story of the Greeks in Rome, as it does of the history of the Jews, or of the ideas of the Jew, in barbarian and in modern Europe. For, if under other guises, the conflict of Mammon, of Pagan, of Jew, and of Christian was never keener or more searching than it is to-day.

Now, as in our own land we often congratulate ourselves—too often perhaps—on being above all things "practical" men, and as in respect of the function of Rome this term is often used as sufficient for all explanation, may we tarry for a moment to ask for some notion of its meaning? For instance, is Euston terminus more "practical" than the Pantheon? or the Pantheon more "practical" than Santa Sophia or the Parthenon? And if so, why and how so? To answer this question must we not consider which of these achievements will have the most abiding use for mankind? Furthermore, we might ask if the ideas of the order of Euston, or of an Atlantic steamship, exist for the sake of the ideas of the Parthenon, of Canterbury, or of William Wordsworth? Or conversely? We cannot pursue this train of thought, but we perceive that by "practical" in the Roman

[6] "Zur Gynaekologischen Ethik der Griechen" in the Archiv für Religionswissenschaft, xiii., 1910.

sense we mean the immediate needs, the things and devices of to-day as contrasted with things to come; or as an adept calculation and encountering of transient contingencies as contrasted with larger, future, and more consummate ends. While we admit, then, that Rome was laying the material bases of social order and culture, we perceive that with the issue of this material function her civic life began to decay; for to ends she had contributed little. And we are not surprised then to hear that the Greek too, not Aristotle only but Plato likewise, regarded himself as above all men practical; that in all the schools of ramifying philosophy the conscious, deliberate, and prophetic purpose of each was the art of life—the βίος τέλειος. Shall we not, then, consider how we defer to the Roman as conclusively the "practical" person; may we not have to describe him rather as the artisan of a material office, as the pioneer before the architect?

The prophetic genius of Ionia.—Now to return to the philosophers of the Homeric land; no work, ardent as it was, inspired as it was, could have seemed more visionary and less practical than theirs. In the later Attic reaction, the restraint of a more measured harmony, their exorbitant speculations seemed overwrought and in the void; Socrates explicitly repudiated their physics, and to this day they are too often regarded as vacuous bombinations. Yet to the prophetic genius of Ionia, the "*sapienza poetica*" of Vico's happy phrase,[7] we owe at least four cardinal ideas, ideas which lifted the earth into the universe, revealed the universal spirit, the creative process, and the universal order; the four master ideas which within my present limits I must indicate nominally as the Cosmic idea, the Dynamic idea of a Continuum of streaming and indestructible energy, the Atomic hypothesis, and the compound idea of Natural Law and of Evolution. And to these I might almost venture to add the idea of gravitation. As we glance at this childhood of science, idly noting perhaps little more than its obvious puerilities, we are apt to forget the ironical question, What is the use of a baby? Yet some further reflexion will make manifest to us, behind this inexperience, an insight and a grip of essential principles which 2000 years have enormously developed but hardly regenerated in principle. It is startling to feel how near us these great thinkers are; how much nearer than Abélard and Aquinas, when they unfurl the canopy of heaven into the air of infinity, when they prophesy of celestial and terrestrial physics, of natural law, of evolution from rudiments, of condensation and attenuation, of molecular energy, of formative combustion, and even of mind-stuff.

But to bring these radiant visions under some measure of realisation (πολησις), and to vindicate the values of medicine and natural science independent of philosophy, in the fifth and fourth centuries respectively two men as great, but of other gifts, arose—namely, Hippocrates and Aristotle. The reader of the greater Hippocratic treatises will find, as Gomperz has generously maintained, the door opened upon a way which to us has become so familiar that we find it difficult to understand how in its own day it revealed the growth of a method of thought and discovery wholly new to the world—namely, the scientific method, as contrasted with scientific imagination.[8]

Now who was this great Hippocrates, this prodigious man, and was it by the power of medicine that he was fashioned thus out of the visionaries of the age? That he did not stand alone, that he must himself have been the product of a great school and of a great tradition, our historical sense would bear witness. It is no barren fancy to associate the Father of Medicine in our imagination with the Father of History. Both inherited the luminous Ionian mind; and the author of Airs, Waters, and Places, cradled on the same enticing seas, had likewise travelled widely and observed shrewdly; both saw common things under the species of a large humanity. Indeed, the Hippocratic scriptures themselves also testify to a great school and a great tradition of medicine which, if sown and watered in a forgotten past, bore its golden fruit in Hippocrates, in Aristotle, and in the scientific schools of Alexandria.

In the anonymous Menonian MS. of London it would seem that Aristotle attributed a certain book of this heterogeneous Hippocratic collection—namely, the Περὶ φυσῶν—to Hippocrates himself; and it is evident that if we could fasten any one of these books upon Hippocrates we should have therein a clew to his personality, and to the authenticity of other books of the canon. Hitherto, as I said last year, we have assumed that certain works marked by breadth of view, scientific temper, and sagacity, seemed by these very qualities to proclaim themselves as from the hand of the great master himself. And perhaps this is not altogether to reason in a circle, for such qualities, by the witness of his contemporaries, were his. But, unhappily, these are not the qualities which mark the treatise Περὶ φυσῶν, a title difficult to translate into English, but which may be rendered *Concerning Airs*. Far indeed from breadth, precision, and wisdom, the Περὶ φυσῶν is a popular oration as windy in its rhetoric as in its subject-matter. We recognise in its affectations the rules of phrase, trope, antithesis, and cadence, which with a finer art were observed by all Greek rhetoricians, as, for example, in the masterly treatise of the fifth century, the Περὶ τέχνης of the same collection.[9] It is, in fact, an inferior product of the Stoical physiology afterwards, as a school in Rome, known as Pneumatism; and if Aristotle really did attribute it to Hippocrates—well, says Ilberg, so much the worse for the medicine he was taught in Stagira. But I must not occupy you with the pretentious banalities of the Π. φυσῶν;[10] I have alluded to this tract, as I might allude also to some sentences in the Περὶ τέχνης, only to indicate the prevalence through the Hippocratic period of the doctrines recognised later still as a school under the title of Pneumatism, doctrines which in Rome were taught by the interesting physician Athenaeus of whom I am to speak.

The origin of the idea of pneumatism.—In my remarks on this school, I must begin by acknowledging the debt which, in common with all students of the subject, I owe to Wellmann's essay on "Pneumatism and the Pneumatists."[11] Yet I trust that, although without it my own would have been very defective, this sketch may be no mere reproduction of Wellmann's work. Amid the manifold aspects and sects of Roman medicine I have chosen to solicit your attention at somewhat greater length upon Pneumatism, because among other qualities of interest its central idea seems to me to shadow forth what I have elsewhere ventured to describe as the pathetic quest for oxygen. In the history of opinion we have to beware not only of shaping the opinions of the past by our own, but also to take heed lest, while thus detaching ourselves as critics, and thus desiring to attribute to each of our ancient forerunners just his own uncoloured ideas, we discriminate them with distinctions to which he was a stranger. The ancients had not distinguished, disentangled, or differentiated concepts, or principles, so as to argue within and around them with the precision and discernment of later generations. In those times ideas were not so much mingled as inchoate, and still implicit together; their rudiments had not extricated themselves into separable strands. Ideas were nebulous, approximate, and blended. Logic came afterwards, only too soon, only too systematically; for many a century only to deprive the earlier speculations of their spontaneity and of their naivety, while masking with its wire grille the vacuity of fact and the lack of verification.

The origins of the idea known for a while as Pneumatism are lost in the backward of time. The soul itself was an air or vapour. Mr. Barnard Cook tells me that the goddess which escaped from the cleft skull of Zeus may be regarded as his soul. In early Indo-European religions the soul in both sexes was conceived as feminine; as, for instance, the Sirens, the Harpies, the Eumenides, and so forth. Thus from Zeus we move immediately to Ether (Αιθηρ), or ethereal essence, a dynamic conception having many qualities,[12] or

[7] For an interesting and discerning comparison of rational analysis with the instinctive, impersonal insight of myth and poetic tradition, often of deep intrinsic philosophical meaning, see Flint, Study of Vico, 1884.

[8] There is no writing extant which brings this new temper so impressively before us as the Hippocratic treatise on Ancient Medicine. Herein is set forth the way of experience, of careful observation of facts. And somewhat sharply controversial as it is against unbridled speculation, and the deductive application of philosophical ideas to the interpretation of natural phenomena, it, is yet interesting to note that this treatise is also of Ionian origin.

[9] Vide Theodor Gomperz, Die Apologie d. Heilkunst, 2nd edition, 1910.

[10] I have written more fully of this treatise in the Classical Review for 1910.

[11] Philologische Untersuchungen, xivtes Heft. Die Pneumatische Schule bis auf Archigenes; von Max Wellmann. Berlin, 1895.

[12] The element was not active primarily, it was but ποσότης; it was on its quickening into a quality (ποιότης) that it became creative. And it is to the qualities, says Wilamowitz, that the platonic term τὰ στοιχεῖα is properly applicable. The pneuma provided, as it were, the λόγος of this conversion. And as if this were not ingenious enough

developing into many; for the pneuma—if I may anticipate the use of this term—was imagined as a yet more primeval substance (Urkörper) out of which when fertilised by a seminal principle (σπερματικὸς λόγος) particulars emerged. Thus the idea of the pneuma contained more than the several notions of air, of vapour, of fire; it was a world force, a divine reason. And thus, as being in "conciliation" with nature, its works were interpreted teleologically; and in this connexion it was that pneumatism became allied to stoicism, an alliance at first sight unlikely, as one without radical coherence; but in consistency stoic physical teaching as a whole was lacking, being rather an eclectic array, a syncretism for pragmatic ends, than an organised philosophy.

It is to Galen, whose value as a source of medical history cannot in our dearth of sources be over-estimated, that we owe most of our knowledge of Pneumatism in its more developed doctrine. Our knowledge of the system is also enlarged by a pseudo-Galenic handbook, Ὅροι ἰατρικοί, supposed by Rose and by Diels to represent Athenaeus, as it observes his arrangement. But, being of later date, probably of the third century A.D., it contains more than this, and throws some light upon Agathinus, Archigenes—of whom I have more to say hereafter—Leonides and Heliodorus; and in the manner of the second century is a fusion or tesselation of pneumatism, methodism, and eclecticism. This treatise deals also with the pulse lore with which, as we shall see, the pneumatists made great play.

The doctrines of pneumatism.—To set forth the doctrines of Pneumatism, from their primeval sources to their completion, chronologically, and with due regard to their several exponents, would within our limits be impossible. I will try to sketch the history succinctly. In advancing then from the primeval ethereal essence (Σεὺς-ἀἰθηρ), we have glanced at an early division into active and passive, into primary force and primary substance, the conjugation and products of which opposites played a large part in much of the later philosophy, without as well as within pneumatist circles. And passing on to the farther evolution of these vapourous essences, we find them elaborated in Plato and Aristotle,[13] from whom the dynamic view of life was carried forward to Alexandria rather through Diocles[14] and the Sicilian School by which Plato was especially influenced, than on the Hippocratean tradition, which indeed was soon to petrify into maxims or "dogmatics." Now it is of peculiar interest to us as physiologists that an effort was made by these medical philosophers to conceive of a dynamic essence "between air and fire"; for here it is that we note the beginning of the pathetic quest for oxygen which, from Empedocles to Lavoisier, drove physicists, chemists, animists, and vitalists, like a gadfly.

I have already reminded you of the rapturous idea of flux revealed by Heraclitus. Worlds away was his rushing, teeming, manifold, many-coloured torrent of life from the grey motionless shadows of the Parmenidean unity. But we must drift down on these subtle airs to the Timaeus, whence, and from other sources, we learn that the whole apparatus of breathing was regarded as independent of the animal organisation; the "ζῶον" was already "πλάσθεν"—moulded into form—when this dynamic function was added to it.[15] The structure of the whole body being pervious to both air and fire, as the most subtle of all created things (πάντων γενῶν σμικρομερέστατον) fire drives the air through its pores; wherein we find an early allusion to respiration through the pores of the skin (διὰ μανῶν τῶν σαρκῶν), an ancient doctrine at least as old as Empedocles and probably older. Without going tediously into detail, Plato's conception was of a double cage of net or wicker, the outer containing air, the inner containing fire (as it were cages of carbonic acid and oxygen) with inlets to the bodily orifices, so that those agents by alternate inflation and depletion (ἔκπνόη and ἀναπνόη) should palpitate through the body. We start full; then the air, heated by the fiery envelope, drives by the nearest way through mouth and nostrils; then again, to avoid a vacuum, comes a compression (περίωσις), so that the air escapes through the tenuous interstices of the flesh (inspiration), and so onwards by oscillation (αἴωρα) through the blood-vessels (φλέβας) and the cavities (διὰ τῆς κοιλίας): "making its course from the inwards to the parts extreme." The corpse differs from the plastic but not yet breathing body in that both soul and "form" have escaped to their refuge (ὑποδοχή), and left the "matter," which they had temporarily impressed, inanimate. "To die is to be a counterfeit; for he is but the counterfeit of a man who hath not the life of a man," said another authority. Such in rough outline was the remarkable contemplation of these great thinkers upon that primeval miracle the respiration, the inhalation of life from the invisible circumambient ether, essence, air, spirit, soul. "And He breathed into his nostrils the breath of life, and man became a living soul."[16]

The next considerable step in medical pneumatism was the fusion or adaptation of this dynamic idea with that of the four elements or radical substances (ῥιζώματα) of Empedocles—fire, air, water, earth—termed the τὰ ἁπλᾶ or rational units, the creative qualities of which (ποιότητες) were hot, cold, moist, dry. This reconciliation seems to have been due chiefly to a certain Chrysippus, a younger contemporary of Aristotle, who may be taken as the philosophical founder of explicit pneumatism as interpreted long afterwards for medicine in Rome by Athenaeus. Although the very obscure treatise Περὶ πνεύματος is not authentic as a work of Aristotle himself, yet no inconsiderable portion of the doctrine, as we may note by the terminology, is Aristotelian.[17] Galen[18] speaks of Chrysippus as the father of the sect (πρόπαππος τῆς αἱρέσεως), but he attributes no small share of it also to the direct influence of Aristotle. The Chrysippus of whom I am speaking was clearly not Chrysippus the Stoic, who lived a century earlier; but this distinction does not quite satisfy for the identification of this renowned physician so frequently quoted by Galen. For it seems probable that in the later fourth and earlier third century there were in Alexandria at least two of the name, father and son. However, merging the lesser in the greater, the greater Chrysippus, who may have been the master of both Herophilus and Erasistratus—of Erasistratus, if not directly yet at any rate indirectly through Metrodorus—was himself of the Cnidian school of medicine, and a disciple of Eudoxus.[19] Although he had travelled much and learnt of many, he seems to have retained the Cnidian habit of minute observation of instant detail, of indifference to Coan reasoning upon remoter causes—such, for example, as on "airs, waters, and places"—and yet of academic logic. This sedulous obedience to fact may have fortified in Alexandria the bent inherited from Aristotle to anatomy, surgery, and symptomatology; and sowed there, moreover, the seeds of the subsequent empiricism and scepticism to which I have more than once referred. By tacking on many little points of agreement,[20] on some of which I shall touch incidentally, as well as by the new ideas with which he enriched medicine, we shall be able to trace the influence of Chrysippus into later times; as, for instance, in the use of herbs and in other notes of therapeutics, especially concerning venesection, on which practice, as I shall show presently, Chrysippus set himself against the whole of ancient medicine, and with the effect on later generations down to Galen, to which, in the history of Asclepiades, we gave some consideration last year. "Chrysippus the Cnidian," says Galen (XI., 150 and 252), "who displaced (ἐξελὼν) phlebotomy altogether from our means of cure."[21] But to this important matter I shall return hereafter in some reflections

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the pneuma was itself regarded as consisting in three phases, ἕξις the grossest, φύσις the generative, and ψύχη the finest—sensation and thought. And above these was the ἡγεμονικόν, or ruling quality placed by Aristotle, Chrysippus, and Athenaeus in the heart; but by some pneumatists this will or mastery was placed in the brain; but how, said the rest, could it energise in the coolest part of the body?

13 On this period I am indebted to conversations with Professor Henry Jackson and to Mr. Barnard Cook's "Metaphysical Basis of Plato's Ethics," 1895.

14 Personally I am disposed to attribute the Περὶ φυσῶν to some follower of Diocles.

15 Tim. 78, c. &c. Body, matter, or substance is perhaps most readily defined for this argument as resistance—inertia; it lay between "void" on the one hand and "form" on the other.

16 It is worthy of remark that Lawrence Oliphant said, "The sense of union with Christ, of His living in us, was manifested, or became perceptible, in a physical sense, chiefly in changes of the natural respiration."

17 On this part of the subject I am indebted to an essay by Neustadt: Ps-Aristoteles, Περὶ πνεύματος, Hermes, 1909.

1 IV. 160; and five or six other passages noted by Neustadt.

19 In his earlier paper in Hermes (1900) Wellmann exposes a certain "chronologische Ungeheuerlichkeit," due to the confusion of the Alexandrian teacher with namesakes; and to his guidance I am here again indebted. I may add that Wellmann regards Chrysippus as directly the teacher also of Erasistratus.

20 Vide Wellmann's useful lists in Susemihl (loc. cit.).

21 Neustadt, loc. cit.

upon the story of the pulse. The works of Chrysippus were still extant in the time of Celsus.

Now I will pass quickly over most of the interminable stoical and more or less pneumatist dialectic, worthy of medieval times, recorded by Sextus Empiricus, Diogenes Laertius and otherwise, as to modes of generation from those units; how on the dominant idea of generation earth and water were passive substances (*παθητικά*), fire and air (*δραστικά*) were powers (*δυνάμεις*), and so forth; over much logic also as to fire, heat, air, and pneuma; as to rarity and density (Zeus); as to heat in organic and inorganic bodies respectively; how far—and this is most interesting—fire (or pneuma) was not always a separating agent, but, as in the technical arts (*θερμὸν τὸ ἐργαζόμενον*), might fuse, temper, construct, and modulate them (make rhythm); passages which remind us of the lofty vaunt of Prometheus—

> " ..... in the fiery flame that lends
> Its aid to every art." [22]

Fire, that is, might work either as an element (or substance, *ὕλη*) or as a tool (*ὄργανον*). And if with some thinkers pneuma was regarded as a kind of fire, with others it was regarded as a fifth element or *ἁπλόν*; in either case by their various mingling and the formative fire the several main tissues of the body (*ὁμοιομερῆ*), that is, bones, flesh, blood-vessels, &c., were evolved.[23] It was generally agreed at any rate that heat, to which at least pneuma could attach itself, was the demiurgic power, and thus that the innate pneuma (*σύμφυτον*)[24] by movement kindled the inward heat (*θέρμον ἔμφυτον*); and by its penetration fused the whole into integration, or uniform harmony (*ἕξις*), promoted growth and propagation (*φύσις*), by way of which thinking comes, "for vapour cannot think," and awakened thought (*ψύχη*); the heat being constantly moderated by respiration. The Sicilians, on the Pythagorean tradition, regarded the heart as the seat of this inner or governing (*ἡγεμονικὸν*) fire, an attribution which I need scarcely say was accepted in the main by Aristotle, and thence was handed down to medieval Europe. It is peculiarly interesting to us thus to trace the fifth element or quintessence through Aristotle to Harvey, who still conceived it as the universal principle of motion[25] animating all things from the starry sphere of the heavens to the tireless orbit of the heart. For of life the Aristotelian doctrine was that of the three spirits—the vegetative, the animal, and the vital—"the vital is begotten of the purest heart's blood, and conveys the glow of life through the other members, which gives them all the capabilities of action which emanate from the heart's vitality, the arteries serving for the transmission of this spirit to all the members"—

> " Spiritus intus alit, totamque infusus per artus
> Mens agitat molem, et magno se corpore miscet."
> —*Æneid*, VI., 726.

We perceive, then, that pneumatism was a much larger idea than animism, which in its peripatetic doctrine contemplated the vital principle under three particular forms. Pneuma is nearly identical with the primeval principle of *νοῦς* (Anaxagoras), an energising principle yet no metaphysical hypostasis, but something physical, the finest matter (ether) vibrating in and through all things, but most vivid in living things.

When Aristotle says, and says truly, that cold condenses (*πυκνοῖ*) and heat makes more permeable (*μανότερον*), we seem to be hovering about the edges of Methodism, and to apprehend how and where these outgrowths of doctrine branched away from each other. To the academic student it may seem perverse that with such features in common the various sects of which we are speaking kept so bitterly aloof, each within its own conventional palisade; but in our own day, with far less excuse, are not these tribal animosities still as fierce, almost as stubborn, as they were in certain Pneumatists who, according to Galen, put their sect before their country? Many of them, poor things, had no country; and the Pneumatists, in the breadth of their ruling idea, seem to us to have been more disposed than men of other sects to sympathise with alien opinion. Thus it was that many of the pneumatist school approached, or indeed joined hands with, the Eclectics; but in no period of culture has a consciously eclectic school found the inspiration of life; in all times the doctrines of such schools, like compromises in practical affairs, have formed a mosaic rather than an organic body or synthesis, and have proved therefore to be temporary accommodations, and seminally impotent.

Relations of pneumatism to other doctrines.—So far I have pursued the general story of these ideas without arranging them formally in medical schools, or attributing them exactly to their respective teachers, in order to set forth an explication of so much of the pneumatist doctrine as, with some considerable peripatetic infusion, brought this school of medicine into alliance with the philosophy of the Porch.[26] For, as I have hinted, it is rather surprising to us to find the quickening leaven of the pneuma so actively at work in association with the Stoics, for whom all emotion was a perversion or a defect of virtue. This inconsistency was not only felt by such later Stoics as Panaetius and Posidonius, but became a subject of apologetic. Diels, however, in his essay on the physical system of Straton, suggests, or rather points out, that the pneumatic doctrine descended to Medicine more directly through this peripatetic teacher to Erasistratus of Alexandria, and thence to Rome. It is in the pseudo-Aristotelian *Περὶ πνεύματος* that we first find the pneuma definitely accepted as a fifth elemental quality.[27] And we have seen that the undoubted influence of Chrysippus in the Alexandrian schools pointed to him as the moulder of the theory of Pneumatism. The testimony of Galen, as cited by Neustadt and others, is not inconsistent with this attribution to the Peripatetics, for he says repeatedly that Athenaeus drew freely upon Aristotle. Another most interesting link of the tradition we find again in Diogenes of Apollonia[28]—namely, that both Aristotle and Theophrastus avoided any radical distinction between pneuma as the original or even as the one primary element, in which thinking stuff was implicit, and out of which accordingly came order in the universe, and common air; though they soon entered into refinements, notably as concerning that vague but penetrating apprehension of oxygen—the "substance between air and fire"—on which I have already dwelt. More fancifully, airs might be drier or damper, hotter or colder, more attenuated (spirit) or condensing into phenomena; and so on. Thus Diogenes no doubt contributed to the rhetorical sophistry of which the pseudo-Hippocratic treatise *Περὶ φυσῶν*, and others like it, consist; a degradation of lofty and prophetic ideas into coarser notions of blasts and tensions of air compressing, expanding, shaping, or disintegrating an inert matter. Thus by ruder and coarser minds two great dynamic ideas—the pneumatic and the atomic hypotheses—were debased; while the sagacious and prudent clinics of Hippocrates were frittered away in frothy rhetoric, barren Methodism, or formal and arid Dogmatics. In the absence of sufficient tests of premises and of sources this lapse into sterility was perhaps inevitable; moreover, the Roman temper was for such thumb-rule formulas as Themison and the Empirics provided. It is true notwithstanding, as we shall see, for instance, in Aretaeus (or Archigenes), in Heliodorus, and in Galen, that beneath all this sophistry a substantial medical and surgical

[22] ΧΟ. *κἀι νῦν φλογωπὸν πῦρ ἔχουσ' ἐφήμεροι;*
ΠΡ. *ἀφ' ὅτου γε πολλὰς ἐκμαθήσονται τέχνας* (261–2).

[23] On the Homomeria, or kinds of structure, of Anaxagoras vide Lucret., I., 830 et seq.

[24] The Pneumatists proper (Athenaeus) identified the pneuma with the innate heat (*ἔμφυτον θέρμον*) as a single entity, and also, with Aristotle, accepted the heart as the seat of it (*τὸ ἡγεμονικόν*).

[25] In their several orbits or spheres (circular as being the most perfect form) whirled the sun, moon, and planets, while the outermost sphere of the fixed stars whirled round the others with an enormous velocity animated by the quintessence or ethereal fire. This universe, a plenum, spun in the infinite void. The expansive elements (fire, air), being centrifugal, and the heavier elements (water, earth), centripetal, the whole was balanced, though it is interesting to note that ultimately all things (even fire itself) tended towards the centre of the earth (gravitation).

[26] I cannot dwell here on the points of difference: such as that for the Peripatetics heat and cold were drastic, and dryness and moisture passive; that Athenaeus regarded these substances variably as sometimes matter, sometimes as forces; that substances or elements, as *ποσότητες*, were often confounded by the Stoics with their active qualities (*ποιότητες*); e.g., water with moisture, earth with dryness, and so on. Indeed, the Stoic hair-splittings amidst these permanent or interchangeable logical entities, as between *ποσότης* and *ποιότης*, for example, are to us intolerable, and were in respect even of their own time as vain as for his time the logomachies of Duns Scotus.

[27] In Galen's words (quoted Neustadt, loc. cit.): "*Περίττον παρεισάγει κατὰ τοὺς Στωικοὺς το διῆκον διὰ πάντων πνεῦμα.*"

[28] Recently well edited, with Introductory Essay, by Krause, Posen, 1908–09. This Diogenes is to be distinguished, of course, from the (later) Stoic. Vid. et. Diels. Fragmenta in Ed. of Excerpta Menonia. Berlin, 1893. And Axon Nelson. *Περὶ φυσῶν.* Upsala, 1909, p. 101.

art was making its way, propagated in the main by the stream of Alexandrian science from Empedocles, Hippocrates, and Aristotle.

THE ARISTOTELIAN INFLUENCE IN ALEXANDRIA.

In endeavouring to elucidate this propagation and course of scientific ideas after Polybus, Diocles, and Praxagoras through the schools of Alexandria to Rome I have mentioned the name of Straton. Unfortunately for the historian, the name of Straton, like that of Chrysippus, was attached to several individuals. Of these, one, namely, Straton, son of Arcesilaus, of Lampsacus, tutor of Ptolemy Philadelphus, succeeded Theophrastus (B.C. 288) as head of the Peripatetic School, and held this position for 18 years, when he was followed by Lycon. Now this was the Straton who devoted himself so assiduously to natural knowledge as to receive the cognomen of Physicus. And Cicero (Quaest. Acad.) upbraids him for so giving himself up to nature as to neglect the study of virtue. But there was also a Straton, the same or another, an eminent physician of the third century, who was associated with Erasistratus. He is important enough to receive frequent mention over the centuries from Themison and Soranus (who quotes him on prolapsus uteri) to Oribasius and Galen, and to Alexander and Aetius. He opposed venesection after the manner of his alleged pupil Erasistratus; he was the first physician, so far as we know, to describe elephantiasis; and Erotian quotes him as author of a lexicon of Hippocrates. Haeser seems to identify these two persons; Fuchs (in Puschmann) separates them. The unity or duality of person may be of no great importance, for, if two, they were both in the line of the same tradition; but the force and direction of Aristotelian influence is a question of the keenest interest. The Sicilian tradition was never free from magical bias, and the Platonic School, which was impressed by it, set back the inductive side of learning. If, like Bacon, Aristotle may seem never to have apprehended, as the Ionians seem to have done, the infinity of the scope and subjects of knowledge, yet by virtue of this very concentration he restored the method of research by the serial order of facts and, like John Hunter two thousand years later, he brought together a vast collection of facts, acquired in great part by personal experience, but also by cautious inquiry, not of philosophers but of practical men, such as fishermen and huntsmen. Now such, we are told, was the very influence which the efficient if ambiguous Straton carried to Alexandria. In his own work Straton attempted to base science on experiment, and in particular we learn that he made systematic experiments on a "vacuum." So also Aristotle's extensive dissections of animals must have forwarded the study of anatomy in Alexandria. Furthermore, we know that Aristotle collected a large library, and that it probably became the foundation of the Alexandrian. We know also that in collecting these books he did so with a view to a historical coördination of knowledge, for which end he organised writers in several departments: Eudemus was editor-in-chief; Menon compiled the medical literature; Theophrastus that of minerals, of physics, and of botany; Aristoxenus that of music. Sadly we deplore the utter destruction of all these documents. By certain words and phrases we may trace the passage of these ideas through the Alexandrian Schools, especially through Erasistratus down to Athenaeus, the last physician, as we have said, to build directly upon Aristotle. For example, in the meaning of nature (*φύσις*)—concerning which Athenaeus definitely cites Straton; in the several kinds of the soul; in the hegemony of the heart; and in the theory of generation we recognise Aristotle.

Unfortunately, hitherto the discoveries of papyri in Egypt have brought forth few ancient records of Alexandrian medicine.[29] However, in the British Museum is a papyrus, apparently of just pre-Galenic date (noted by Mr. Kenyon in the *Classical Review* for 1892), which deals with certain points in dispute between the followers of Herophilus and Erasistratus. And Karl Sudhoff (Leipzig, 1909) has recently collected many interesting notes concerning drugs, customs, diet, and baths; and on temple and hospital matters: but no fragment of any great writer, nor any illumination of the history of ideas, has turned up as yet.

From such sources as we have, we learn that in the period of comparative peace which ensued in Alexandria after the internecine strife of the Diadochi until the expulsion of the physicians and the *savants* to the islands and Asia Minor from Alexandria by Ptolemy VII. (Physkon), a strange contrast to his predecessors, and before the diversion of the main stream of culture from Alexandria to Rome, burst forth that brilliant school of which we know so much by the glory of its notable achievements and so little by its documents. Moreover, under the Empire, and even in the later years of the Republic, the intercourse between the two cities both in trade and culture had become easy and continual. Celsus, for instance, in his therapeutical advice to consumptives, speaks of the voyage from Italy to Alexandria, even in the petty craft of those days, as "aptissime." In Alexandria then Hellenism had its fling, touched however more and more by Oriental influences, especially of that learned and ingenious race the Jews[30] and Syrians, of whom even then there were many in the city; influences which a little later, in the Neo-Platonic and Christian Schools, became potent, and even ascendant, down to the second great fire of the Alexandrian libraries in the fourth century.

We have seen, then, that the powerful and insatiable mind of the Greek from Anaximander to Plato, before the discipline of observation and analysis initiated by Hippocrates and Aristotle, had achieved certain general ideas of cosmic scope and significance. These ideas once apprehended, the framework of orderly knowledge had to be built up by more laborious methods. The difficulty then lay in the gearing of this tremendous thinking engine to practical work. While unharnessed, it spun about itself with enormous velocity, weaving out of its own dust what Francis Bacon called its cobwebs. These buzzing and ineffectual revolutions are almost more audible to us in the first centuries after Christ than in the thirteenth. For a season in Alexandria this tremendous energy was buckled to the real work of spinning webs, not of notions only, but of facts—of things, that is, which had happened, which were happening, and which experimentally might be made to happen. And in the Aristotelian tradition we know how brilliant were the results of these Alexandrian scientists, not only in celestial and terrestrial physics, but also in biology. For in this College the names of the great anatomists Herophilus and Erasistratus are even more familiar to us than those of Hipparchus, Archimedes, and Heron.

ALEXANDRIAN MEDICINE.

But to proceed with the sketch, so far as relics and fragments enable us, of those features of Alexandrian medicine which reappear in Roman medicine, and in our present concern with the Pneumatists. Speaking very generally, of the two great anatomists, Herophilus—one of whose masters was the Coan Praxagoras, led more directly from the Hippocrateans to Galen; Erasistratus from Cnidus to the Methodists and Pneumatists. And we can get a little nearer, perhaps, to the facts than this, though the respective disciples, or nominal disciples, of these masters perplex the modern historian by their manifold inconsistencies, vagaries in which the Herophileans particularly erred, even forfeiting the birthright of their school by shirking its anatomy and, with the frowardness of the Christians after them, dissipating the master's teaching in sophistries, elaborating a wiredrawn dogmatic system upon the flimsy foundation of glosses and commentaries on the texts then intact in the vast libraries of their city.[31] The Erasistrateans were more steadfast; they kept closer to their dootrine, and seem to have adopted much of the teaching of Straton the Aristotelean; they kept up at any rate some anatomy even down to the second century A.D. (Galen), and on their empirical side did better service than their dogmatising rivals.[32] And accordingly the Erasistratean School on the whole prevailed.

Herophilus, born at Chalcedon, lived and worked in

[29] Even of later date the medical finds are scanty. Meyerhof and Pflüger discovered in a library in Cairo some unknown MSS. on eye diseases of Arabian origin, and Meyerhof adverts to such relics in Damascus and Constantinople. These may prove to be translations of older treatises.

[30] It is said that in the reign of Augustus there were a million Jews in Alexandria; and we know there were Jewish physicians in the first century A.D.

[31] The name of Dogmatists was given to this school, if I remember right, by Galen. In working rather by the letter than in the spirit of their great founder, Hippocrates, they became the Pharisees of Ancient Medicine, as in after time were the Galenists.

[32] Besides the historical treatises already cited I am, in what follows, indebted also to Susemihl's Gesch. d. Griech. Litt. in der Alexandrinerzeit, Leipzig, 1891. This scholar at any rate perceived that from a history of culture Medicine could not be omitted. The medical sections are in great part from the pen of Wellmann.

Alexandria under the first, and perhaps in part under the second Ptolemy. In the eastward expansion of Greek scientific culture his doctrines were carried to Pergamon, and later to Laodicea. It is worth noting, in respect of the tradition leading down to Galen, that under the Attalid kings Pergamon was, at some interval, comparable in culture even with Alexandria; and schools were perpetuated there till Galen's time, although apparently with some decline; for we are told that when in Cæsar's campaign the library of the museum—not of the Serapeum—was burned, the Pergamene library was brought to Alexandria, only at a later time to be destroyed, with the Serapean, by religious fanatics. The school of Smyrna, on the other hand, by way of which, as we shall see, the prescription of wine as a medicine probably reached Asclepiades and Athenaeus, was founded, as we learn on the contemporary authority of Strabo, in the first century B C., by Hikesios, and he was an Erasistratean.[33] But to return to Herophilus; Haeser reminds us that, great as were his researches in anatomy, especially as regards the nervous system, yet before him Praxagoras seems to have made no inconsiderable advances in this study. He had distinguished, for instance, between the motor and the sensory nerves, although he presumed that the sensory nerves arose "in the centre of feeling—the heart." But over the earlier schools,[34] as also over Galen and the later, the Alexandrians had the incalculable advantage of dissecting the body of man.[35] Herophilus advanced to the demonstration of the origin and course of the nerves from the brain and spinal cord,[36] and described many of the parts of the brain, including the meninges; and he it was who recognised this noble member—hitherto regarded merely as a refrigerator for the inward heat—as the source of sensation and of volition. On his description of the liver, pancreas, chyle-vessels, and many other members, descriptions new in part, in part enlargements of previous knowledge, I cannot now dwell; but to his views of the circulation I shall return presently, when we come to discuss the pulse lore of this period and of the Roman pneumatists. Herophilus probably described the anatomy of the eye, as we know from Aetius that he wrote a treatise Περὶ ὀφθαλμῶν. To this great and precise observer Galen was deeply indebted; yet these Alexandrian anatomists never cleared up the confusion under the name νεῦρα. They still regarded nerves and tendons as varieties of one kind; varieties because they perceived that the nerves came from the brain and spine, but the tendons from the bones and muscles.[37] As a physician Herophilus, in opposition to Erasistratus, clung to the four humours of Hippocratic tradition, and opposed him furthermore in matters of pharmacy, dietetics, and hygiene; subjects with which he dealt at large in a work Περὶ αἰτιῶν.[38]

It would have been well if medical science could have continued patiently on these more positive, although it must be confessed still somewhat nugatory, methods. It has been the trial of Medicine that while, as compared on the one hand with the no less complex but far more accessible phenomena of politics, and on the other with the far less complex phenomena of the physical sciences, it has stood in respect of the difficulty and inaccessibility of its knowledge, and stands still, at an enormous disadvantage; yet, in no unnatural impatience with these perennial bafflings and obscurities, the moan of suffering men and women and the poignant misery of the child have ever driven us into action, however blind, however premature. Remedies, orthodox, empirical or quackish, remedies one way or another, and by whatsoever means, have always been imperiously demanded of us. And, as nowadays the modern physician cannot wait for pharmacology which seems to him, and not untruly, to be the tortoise behind the hare of empirical practice, so after a like manner we may imagine the impatience of Alexandrian physicians and sick with the pursuit of anatomy. Except in respect of surgery, the lost anatomical treatises of Herophilus himself could have contained but little of any immediate application to inner medicine. Such then in the middle of the third century B.C. was the ground in which, in spite of its scientific spirit, or perhaps engendered by it, empiricism and medical infidelity would readily spring up and, gyrating in the void of positive knowledge, would, and did, give rise to weary and endless disputes and logomachies—*Federkriege*, as Susemihl calls them. Professing much reverence for Hippocrates, physicians broke loose not only from anatomy but also from the Hippocratic rational sagacity. In the third century B.C., as we learn from that earliest essay in medical criticism the Preface of Celsus, and from other sources, Philinus of Cos,[39] the reputed founder in Alexandria of the Empirical School, and Serapion, who harshly straitened it, instituted the schism in which walked with more or less discernment their eminent successors, such as Apollonius of Antioch, Herakleides of Tarentum (whom Soranus calls the most persuasive of them all), Menodotus, and Sextus Empiricus.

Towards the end of the second century B.C., under the evil rule of Ptolemy Physkon, Alexandrian science began to dwindle. Hipparchus, who had flourished about the middle of that century, was the last of the great originating minds. Then the disinterested search after knowledge for its own sake dropped into an industrious and respectable assiduity; as into the technical furtherance of the crafts, especially of agriculture. Accordingly, we find then the beginnings of those summaries and compilations which, admirable as they were in Varro and Celsus—two of the most scientific of the Romans—dogged the retreating footsteps of Urania. Thus the field was left open for astrological phantasies and for marvels of zoology which began to creep in from the East, and, flourishing in Aelian, spread themselves through the bestiaries and herbles of the Middle Ages.

After this introduction concerning the history of the Pneumatist idea, it is convenient to illustrate its application to Medicine by some story of the chief medical teachers of the pneumatic school so far as we know them. However far-reaching, even perennial, as was the pneumatic doctrine, I repeat that pneumatism, as a medical sect, was of brief duration; and for the most part its adherents are now no more than names to us. I propose therefore to speak more particularly of two only—of Athenaeus, the formal founder of this school in Rome, and Archigenes, who, if an Eclectic, came forth from the Pneumatist School.

ATHENAEUS.

Athenaeus was one of the most interesting of the Romano-Greek physicians; Diels, in his essay on the physical system of Straton, emphasises the doxographical importance of Athenaeus, who nevertheless adopted and formed his opinions with much critical judgment. As to his date, Athenaeus of Attalia, who, like most of the Roman physicians, emigrated thither from the colleges of the wealthy Hellenic cities of Asia Minor, was unknown to Celsus, who lived in the days of Tiberius and to whom Methodism was known; but his works were well known to Galen, who cites him frequently and in terms of much respect as an author and *savant*. We may assume then, if perhaps he was born under Tiberius, that he flourished in the reign of Claudius. Athenaeus seems to have perceived how Methodism, in the sense of the atomic physiology, was even then withering; in practice it had dried up into two or three abstract maxims or common rules (κοινότητες); whilst its Epicurean philosophy was giving way in Rome to Stoicism. Thus intelligent men felt something more was wanted, and pneumatism, coming as it did in the tradition of the elder medicine—Sicilian, as we have seen, as well as Coan and Alexandrian—and in alliance with the ascendant stoicism, offered to fill the want. Athenaeus, therefore, had a large

[33] Strabo, xii., 580.

[34] That is speaking generally. Galen credits Diocles with some knowledge of anatomy, and there is reason to suppose that both this physician and Praxagoras, and so presumably some others, had dissected the human body. But in Alexandria there was an Anatomical Institute in which human bodies, as Galen says plainly concerning Herophilus, were dissected. (II. 895; "οὐκ ἐπὶ ἀλόγων ζώων καθάπερ οἱ πολλοί, ἀλλ' ἐπ' αὐτῶν τῶν ἀνθρώπων πεπονήμενος."

[35] Much more evidence would be necessary to compel us to believe the malignant insinuation of Tertullian that these anatomists opened the bodies of living men (criminals). Such brutality not alien to the Roman was foreign to the Greek.

[36] Galen, viii., 212.

[37] Cf. Daremberg's edition of Rufus.

[38] A certain Heracleides Erythraeus, lauded by Galen, a contemporary of Strabo about the Christian Era (placed by error in Haeser I see in the third century B.C.; there were three or four physicians of the name) wrote a long treatise on the "sect" (αἵρεσις) of Herophilus, but unfortunately nothing of it remains.

[39] We have to regret our ignorance concerning this considerable person; almost all else we know is that he wrote glosses on his distinguished compatriot before Erotian. The Empirics boasted of an heretical descent from Akron of Agrigentum (fifth century B.C.), an eminent physician contemporary with Empedocles. It is not impossible that the hazy science of the Sicilian School may have instigated such a reaction, but we have no evidence of it.

school or following in Rome. Indeed, pneumatism, as we have seen, represented a physiological principle of a kind so attractive that, under the phases of many schools, it survived in its essence until the eighteenth century. Athenaeus wrote a large and important work, Περὶ βοηθημάτων, which probably dealt with all departments of medicine. Unfortunately, this work has almost wholly perished; for what we know of Athenaeus we are dependent upon some fragments surviving in Oribasius, and upon some allusions by other authors. These relics suffice, however, to indicate that Athenaeus was a clear and accurate observer, apt in reflection and criticism, and wise in philosophy. To these gifts he added a large and various learning spiced with a shrewd irony. Athenaeus, like such later pneumatists, or eclectic pneumatists, as Herodotus, Archigenes, Leonides, Heliodorus, was a good surgeon. Moreover, the school was not clinical only. Besides its considerable therapeutical content, it taught also (as in the II. βοηθημάτων) an elaborate physiology and pathology which, within my present limits, I may be able to illustrate by a few references, especially by its teaching concerning the pulse.[40]

Athenaeus, who did much to weld together philosophy and practical medicine, apportioned the sphere or faculty of medicine into five divisions. The first was physiology, which for him was the essential foundation; and therein he made a great advance upon the methodists and the empirics. Of his next or second division, that of pathology, but little is known directly; yet we incur little error in interpreting the pathology of the master by that of his successor Archigenes. The main feature of his pathology, that upon which I would dwell for a moment, was the study of the causes of disease; for herein the school returned to the sounder tradition of Hippocrates, avoiding on the one hand the facile and jejune etiology of the methodists, and on the other the narrow concentration of the Empirics upon superficial and immediate antecedents. Of the logical classification of causes we read in Galen enough and to spare; and we of to-day in our array of causes are still somewhat given to outworn categories, such as the *predisposing*, the *exciting*, and so on. In Rome, from the time of Asclepiades, the sects which did not ignore the wider causes with moderation divided them into three classes at least, according to their nearness or remoteness in the series of antecedents. Thus Athenaeus did not expatiate in a wilderness of logical but unnatural categories. But the Pneumatists conveniently distinguished *αἰτία* from *διάθεσις*, by which they signified all which pertains to the conditions of the disease in the individual. Disease (*νόσος*) was the dyscrasia; *πάθος* was used variably as the lesion or as the functional disarray, fever, for instance, as abstracted from symptoms of fever.[41] *Συμπτώματα* were the consequences of the dyscrasia. The dyscrasia, a perversion of health (eucrasia)—the ancients perceived in these rhetorical antitheses substantial as well as verbal values—was for the genuine pneumatist a failing or taint of the pneuma, and to be counteracted by marshalling against it the contrary quality—as cold against fever, and so on; so that, as we shall see, physical means of cure prevailed with this school, such as diet adapted to the several seasons, clothing, exercises, waters, and so on. The fusion of their vitalistic pathology with the humoral, which for clearness' sake we are disregarding in this lecture,[42] was in its completion the task of Galen. By him the soul, or vital dynamic, in its three kinds—the natural, the animal, and the psychical soul—and the qualities of the elements were harmonised so far as logic could harmonise them; for instance, phlegm was akin to moisture, yellow bile to fire, black bile (spleen) to earth, and so on, the qualities being mixed in the blood. But it would be futile to enter farther into these logical permutations; I have said enough to give a notion of their method. It is, perhaps, more interesting to perceive how in certain ways Athenaeus and the pneumatists went back to Hippocrates. Thus I have touched upon their observation of climates and waters. The third pneumatist division was Dietetics; then came Materia Medica; and fifthly and lastly Therapeutics, a title with a larger content than is usual with us, and almost signifying clinical practice.

GROWTH OF POLYPHARMACY.

The vast commerce of the Ptolemies, and in some measure no doubt the lore of Pharaonic Egypt, had flooded the markets of Alexandria with quantities of new drugs. One writes to a friend to send him good quality of drugs "lest he do otherwise and send him stale stuff which will not pass muster in Alexandria,"[43] &c., and the keen inquiry for them was far more than the legitimate demand of the medical practitioner. For with the treatise of Theophrastus Περὶ τῶν δακετῶν καὶ βλητικῶν, as one may approximately say, began the prodigious and diabolical literature on the art and mystery of poisons and antidotes in which, not always without the aid of medical accomplices, kings and nobles of the empire and its principalities, and after them popes and cardinals of the Church, were the experts. And, indeed, the bent of the Herophileans, onward to Galen himself and the Galenists (Andreas, Krateuas, Apollonius Mys, Zopyrus), was to polypharmacy. In the decadence of Alexandrian science and society this gross propensity increased and multiplied; and under the influence of perfidious potentates, such as Mithridates,[44] Nicomedes, and Attalus, attained to an almost grotesque infamy. Under the foul accumulations of panaceas, mithridatics and cosmetics, elaborated with a perverse and loathsome ingenuity,[45] medicine was oppressed and almost suffocated; and the habit of heaping up ingredients made its way into the compounding of legitimate prescriptions. Thus to build up a huge and conglomerate bolus or potion became the ambition of the doctor, and the faith and consolation of the patient. If your liver is getting impatient, writes Juvenal in the XIIIth Satire, "seek Archigenes as fast as you can, and buy of him the composition of Mithridates, and you will live to eat figs and gather roses another year."[46]

THE TRAUMATIC NEUROSES.

BY THOMAS R. GLYNN, M.D. LOND., F.R.C.P. LOND.,
PROFESSOR OF MEDICINE, UNIVERSITY OF LIVERPOOL; CONSULTING PHYSICIAN, ROYAL INFIRMARY, LIVERPOOL.

I USE the term traumatic neurosis in a limited sense, to embrace only neurasthenia and hysteria resulting from a traumatism, either by reason of the physical injury or the emotional disturbance that may attend it. Other neuroses, as insanity and epilepsy, which more rarely follow shock, are, therefore, not included in the term.

Erichsen in 1864 described the nervous troubles that at times follow accidents, and as these disorders frequently succeeded casualties on railways the term "railway spine" came to be generally adopted for them, the condition being ascribed to slight lesions, leading to chronic inflammation of the spinal cord or its membranes. Westphal and Leyden adopted the same view.

Russell Reynolds was the first to recognise the functional nature of the symptoms of the so-called "railway spine," for he held that the troubles of sensibility, the motor paralyses and spasms, were "dependent on idea." Oppenheim and Thomson adopted Reynolds's view and invented the term "traumatic neurosis," affirming that the nervous disturbance excited by injuries was of a definite and specific character. Two American physicians, Walton and Putman, pointed out that the symptoms of railway spine were indicative of cerebral rather than spinal disturbance. They therefore held that the term "railway brain" was more appropriate than "railway spine"; at the same time they regarded the cerebral symptoms as largely functional and akin to those of hysteria.

It was the more pronounced consequences of traumatisms

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[40] In what follows I am indebted especially to Daremberg's Oribasius and Rufus, Wellmann's article on "Philumenos Hermes," 1908, and on "Ancient Medical History," Hermes, 1900, and continually, of course, to his "Essay on the Pneumatists." Nor must our general debt to Diels be forgotten.

[41] Herophilus pointed out that certain *πάθοι* might be natural (*κατὰ φύσιν*), such as childbirth or the secretion of milk; others unnatural (*παρα φύσιν*), such as fever. Still *πάθος* was often used in equivalence with *νόσος*, especially perhaps by the methodists (e.g., *ἡ παθητικὴ στέγνωσις*, &c.).

[42] We find the humoral pathology as far back as Herodotus, who tells how (IV., 187) the Lybian shepherds used to burn the veins on the vertex or temples of their children to prevent fluxions of rheum (*κατάρρεον φλέγμα*).

[43] Milligan, Sel. Greek Papyri, 1910, p. 58.

[44] The locus classicus of this treacherous lore is the twenty-fifth chapter of Pliny (N.H.). Krateuas probably worked under the patronage of Mithridates (cf. new ed. by Wellman, 1897).

[45] Among many other such books see Das Gift in der ..... antiken Literatur. By Dr. Erich Harnack of Halle. Leipzig, 1908.

[46] We note here that Archigenes sold the remedies himself.

that attracted the notice of all these observers—the hysterical spines and joints and the paralyses; the less evident result of nervous shock—neurasthenia—was at this period overlooked. Hence the victims of traumatic neurasthenia were likely to meet with little consideration.

Herbert Page[1] in 1885 was the first to recognise that traumatisms might be followed by symptoms of neurasthenia as well as by those of hysteria. Charcot in 1888 confirmed these conclusions, and by clearly differentiating the various symptoms of hysteria and neurasthenia rendered it possible to attain precision in the diagnosis of these affections. He also demonstrated that Oppenheim's traumatic neurosis was in no sense a specific affection, but that its symptoms were identical with those of hysteria and neurasthenia in combination.

The term traumatic neurasthenia is, in my opinion, frequently misused, not only by medical witnesses but by medical writers, it being applied to cases where the symptoms of hysteria are associated with, and perhaps preponderate over, those of neurasthenia. Its use is, perhaps, legitimate in a court of law, as the word neurasthenia has come to be recognised by lawyers as indicative of a definite disorder produced by accidents, and, on the other hand, the term hysteria to the unprofessional is suggestive of malingering.

The neurosis excited by traumatisms is usually a hystero-neurasthenia, and to overlook this fact is unscientific and leads to the confusion of the characteristics of the two diseases, inasmuch as symptoms are set down to neurasthenia which do not belong to the affection. For example, a recent writer on "traumatic neurasthenia" states that in this disorder the fields of vision are almost always restricted, the knee-jerks exaggerated and the plantar reflexes absent—all diagnostic signs of hysteria and not of neurasthenia.

In neurasthenia the symptoms are almost entirely subjective, and therefore capable of being feigned. Their value as indications of disease depends largely on the estimation formed of the veracity of the individual under examination. In such circumstances it is only likely that the opinion of medical witnesses on opposite sides should be at variance. In hysteria, however, there are many objective signs ready to be brought to light on careful examination—stigmata that furnish evidence of a decisive and positive character.

Genuine cases of traumatic nervous trouble, in the absence of careful clinical investigation, may not be treated with due consideration, and especially is this likely in the absence perhaps of all signs of physical injury or of any appearance of ill-health; for in these circumstances a suspicion is awakened in the minds of lawyers and juries that the sufferings and incapacity are mythical—a suspicion which is strengthened if it should appear that the litigant is capable of seeking diversion but not of resuming work.

It is the duty of a medical witness to search for any indications of disease that may be present, to note whether the statements of the individual under examination are consistent or otherwise. To conduct such an investigation intelligently he must be familiar with the features of the neuroses under consideration. I need hardly say that the medical witness should confine his evidence to facts. He should neither belittle symptoms nor exaggerate them; he should not become a partisan or a special pleader, nor allow sympathy to bias his judgment. Owing to the difficulty that is usually experienced in estimating the exact extent or possible duration of the incapacity in any case, should such exist, there is room for difference of opinion among medical witnesses—a disagreement which is made more divergent under skilful cross-examination.

Some physicians hold that neurasthenia, like hysteria, is a purely psychical malady—a disease of imagination. Dejerine and Dubois adopt this view. Bernheim, too, considers what he calls "false neurasthenia" to be of similar origin. It seems, however, unnecessary to invoke psychic intervention to account for the phenomena of neurasthenia when in every instance the disorder is found to be produced by such causes as the depressing emotions, overwork, dyspepsia, exhausting illness, and intoxications tending to lead to nervous exhaustion. Moreover, in so far as the muscular system is concerned the impairment of energy has been demonstrated by the use of the ergograph and by the experiments of Münsterberg.[2] Granting that these affections are disorders of imagination, it is illogical to conclude that the victims of a traumatic neurosis are impostors; surely the position adopted by G. Braun[3] is unwarranted: "That which in medico-legal work is called a traumatic neurosis would be regarded in ordinary life as a fraud."

The symptoms of neurasthenia and hysteria, whether they follow fright or injury or are developed in some other way, are equally characteristic, and these characteristic symptoms are met with as a consequence of traumatisms, whether the subjects of such traumatisms are or are not seeking compensation. It is hardly necessary to insist on this point, but I may refer to one case. A foreman in a foundry was struck on the forehead and knocked down. He got up and though suffering from headache and nausea remained at work. Fourteen days after, as he continued to feel ill, he consulted a medical man who advised rest and sent him to a hydropathic establishment for baths and massage. He derived little benefit and at the end of three weeks returned to work. When I saw him seven months after the accident he was suffering from pronounced neurasthenia, with a very irregular pulse and palpitation. With the exception of the brief holiday mentioned, he had not absented himself from his duties, nor had he thought of claiming compensation.

Hysteria, indeed, originates in auto-suggestion, and the associated physical troubles are due to the projection outwards of psychical images. The physical phenomena are, therefore, dependent on the mental state. On the contrary, in neurasthenia—if we accept the ordinary theory of its nature—the mental attitude is the reflex of the physical condition. For example, the muscular weakness gives rise to the sense of fatigue and repugnance to effort. The disturbances involving the organic functions being reflected on the brain occasion sadness, weariness, pessimism, and vague ideas of impending trouble. Although auto-suggestion may give to neurasthenia the aspect of hysteria it is in its essence a physical rather than a psychical malady. In non-traumatic cases of neurasthenia and hysteria we are generally able to trace a predisposition in the family history, in indications of a tendency to rheumatism, gout, tuberculosis, intemperance, or to functional or organic nervous diseases. In traumatic cases, however, great difficulty is usually met with in obtaining a reliable family history. I have suspected that intemperance in the parents might in many instances explain the exceptional vulnerability of the nervous system, but have failed to satisfy myself that such was the case.

The same difficulty is met with in regard to the personal history when seeking for evidence of a neurotic tendency, the victim of an accident usually asserting that he had never been ill before he met with the accident. I noted the signs of hereditary degeneracy in 8 out of my 40 cases—in jug-handle ears, asymmetry of face, and poor physical development in other directions. The man whose case I have just referred to had a congenital squint with defective vision of one eye, ill-developed ears, and irregular teeth. I had seen him with Dr. C. J. Mouncey of Earlestown eight years previously for idiopathic dilatation of the stomach and neurasthenia. At the time of the accident he had been well for some years.

A predisposing cause is probably often to be found in a weakened nervous organisation, brought about by the abuse of tobacco and alcohol, and further exhausted by unhealthy or arduous occupations and unhygienic surroundings. Some idea of the frequency with which the traumatic neuroses follow accidents may be obtained from the statistics given by Dr. R. J. Collie in a paper on the Workmen's Compensation Act, 1906. In 458 cases of accidents referred to him by the London County Council, he met with 24 cases of traumatic neurasthenia—a comparatively small number, and in its paucity emphasising the fact that some other agent besides the shock of an injury determines the development of the neurosis in question. This other contributory cause is predisposition. The severity of a traumatic neurosis, as a rule, bears no relation to the extent of the lesion that preceded it, its intensity depending rather on the constitution of the victim of the accident, and on the degree of emotional shock attending it.

[1] On Injuries of the Spine and Spinal Cord without Apparent Mechanical Lesion.

[2] See Psychologie des Neurasthéniques, Dr. P. Harlenberg, p. 28.

[3] Prager Medizinische Wochenschrift, 1907, and the Medical Chronicle, July, 1907.

Emotional disturbance probably plays a more important part in the production of the traumatic neurosis than physical injury. A depressing emotion, such as terror, may in itself give rise to a hysteria or neurasthenia, and instances are not infrequently met with where these disorders have been excited by accidents which, though trivial, have occasioned much apprehension.

Sometimes the victims of violence cannot experience any emotion before or at the time of the accident: it is too sudden. Take, for instance, the case of a man who is instantaneously rendered unconscious by a blow on the head from a falling hammer. In such instances emotional disturbances in the form of worry and anxiety operate after the infliction of the traumatism, their pernicious action being increased in the event of sleeplessness and pain. Nervous shock produced by fright cannot operate when the injury is unexpected and causes sudden insensibility; and yet blows on the head are, I think, more often than other forms of injury followed by functional nervous trouble.

The most severe cases of hystero-neurasthenia that I have recently met with have followed blows on the head. One man fell off his bicycle on his head 18 months ago and was unconscious for three weeks. He is now, in spite of hospital treatment, a confirmed hystero-neurasthenic and quite disabled. The other, a patient of Dr. W. Macvie, besides an injury to the head suffered also from a broken arm and leg; he has been utterly disabled by hystero-neurasthenia since June, 1907. Traumatic neurasthenia is more frequently met with in men than in women, and this is due to a large extent to the fact that the former are more liable to be accidentally injured in their occupations. At the same time, this difference in the character of the work of the two sexes does not altogether account for the prevalence of this semi-hysterical condition in males, for it has been noted that in a general catastrophe affecting a number of people the men will suffer in a greater proportion than the women. It seems also to be a fact that while working men after injuries are especially liable to suffer from hystero-neurasthenia, men engaged in professional or mercantile occupations are more prone to be attacked by simple neurasthenia.

When an injury is severe the nervous symptoms may be manifested immediately—by excitement, insomnia, nightmare, headache, tremors, emotional disturbance, and digestive troubles; in short, by what might be called acute neurasthenia. In individuals with stable nervous systems recovery takes place in a few days; in others of neurotic temperament, after perhaps a period of temporary improvement, the nervous manifestations return with greater or less intensity. When the traumatism has been slight, the victim of the accident may experience few symptoms of depression immediately after it, perhaps only vague pains and some weakness of the legs and slight insomnia—nothing to prevent him continuing his occupation. At the end, however, of a few days or weeks, or perhaps months, progressively or rapidly the symptoms characteristic of a traumatic neurosis appear, and a state of invalidism becomes more or less established.

The period of time extending between the receipt of the accident and the development of the neurosis has been termed by Charcot the "period of meditation." According to certain German authors referred to by Guion [4] this period may be prolonged for years; instances are given by these writers and by Guion where hysterical paralyses have developed in soldiers who had received wounds in the Franco-German war at periods varying from 2½ to 15 years after these injuries. Such deliberation in the appearance of traumatic injuries is almost incredible. In my experience the interval between the accident and the onset of the neurosis depending on it is seldom prolonged over two to three months. But, as Guion observes: "If during the long period which separates the traumatism from the hysterical explosion no other incident intervenes which may be invoked as the originator of the affection, then it is only natural to incriminate the traumatism."

From a medico-legal point of view a delay of even a month or two is of moment. For example, an individual meets with a more or less grave accident and receives an indemnity proportionate to the duration of his incapacity and returns to work. Subsequently, however, a traumatic hysteria assails him. This new and more serious trouble is only another effect of the accident, but in the present state of the law he is entitled to no further compensation, though he may be disabled for months or even possibly life. Railway and other companies in their own interests are therefore wise in seeking to settle claims made against them for damages as soon as possible. Finally, an individual under treatment for some disabling traumatic lesion may gradually become neurasthenic, and neither he nor his medical man recognises the nervous weakness until he attempts to resume work.

A traumatism may be followed by a pure neurasthenia or hysteria or by a hystero-neurasthenia; in the latter case the more precocious nervous manifestations are, as a rule, neurasthenic. When the individual is not destined to remain neurasthenic it may be a month or two before the earliest signs of hysteria appear, its advent being sometimes announced by a major or minor hysterical fit, the latter more commonly, the victim having what he calls "a fainty attack." On inquiry such a seizure will probably turn out to be not syncope, but a crisis characterised by palpitation, rushing sensations in the head, oppression of breathing, constriction of the throat, tremor, and emotional disturbance.

As stated previously, a traumatic neurosis most frequently takes the form of a hystero-neurasthenia. In this disorder the signs peculiar to each affection may be distinguished.

Neurasthenia, whether it occurs alone or in association with hysteria, betrays itself by its characteristic cranial discomfort, sensations of pressure or emptiness, or other abnormal feelings, heavy pain in the occiput or various parts of the cranium, aggravated by physical or mental effort, pain in the back, especially over the lower vertebræ and sacrum; often also a feeling of stiffness which retards free movements; and insomnia. There may be a difficulty in falling asleep, or sleep may more or less readily set in, but pass off in an hour or two, leaving the individual a prey to insufferable restlessness and fidgetiness, aggravated by tinglings in the limbs; there may also be any or all of the following: vertigo, tinnitus, and neuro-muscular asthenia, asthenopia, sexual weakness, circulatory disturbance, increased frequency or irregularity of the pulse, palpitation, spurious angina, vaso-motor irritability, atonic dyspepsia often associated with flatulence and constipation. The mental troubles are many and marked: on the emotional side there are sadness, weariness, and pessimism; repugnance to effort, abnormal irritability, defective control of temper, tendency to weep on slight provocation, timidity. On the intellectual side, lessened power of attention, defective memory and will power. The patient or his friends will say that since the accident he is an altered man. He has become inert, morose, and ill-tempered.

The objective symptoms, if there are any, are few and obscure. In a marked case the subject looks dejected and stupid; he stoops, and his gait and movements are sluggish; his speech slow and halting. The pupils may be dilated, and in very rare cases unequal; this condition was present in one only of my cases. The pulse may be quick, and often it is too readily accelerated. There is in some instances slight unsteadiness on standing with closed eyes. In others there is an abnormal tendency to flushing and sweating.

The emotional depression and the intellectual asthenia and the failure of will power tend to lead the neurasthenic to be possessed with doubts and fears. But the phobias of traumatic neurasthenia rarely reach the intensity of those found in congenital neurasthenia or of those common in hereditary degeneration. Moreover, the emotional depression renders neurasthenics liable to auto-suggestion; hence it is that hysteria so frequently complicates the disorder, and particularly in its traumatic form; for the working-man who is disabled is without any resources of distraction in himself, and frequent interviews with lawyers and medical men lead him to dwell on his injuries and symptoms.

Pure traumatic neurasthenia, as Oppenheim asserted, differs in some degree from the disease in its ordinary form. The victims of the disorder, even when educated, are not scribblers; they do not bring written descriptions of their troubles; unlike the ordinary sufferer from nervous exhaustion they do not chatter about their ailments. This taciturnity is embarrassing to the examiner, since leading questions have to be avoided. The patient is also easily annoyed and seems to look on the medical man with suspicion, even when he has been sent to him by his own

[4] Les Agents Provocateurs de l'Hystérie.

solicitor. He often, too, is worried by intellectual asthenia and emotional weakness, rather than by the indigestion, palpitation, and the other physical troubles of ordinary neurasthenia.

When I was a student neurasthenia was not recognised, and hospital patients who exhibited no signs of organic disease or of some familiar nervous disorder were usually set down as malingerers. With increased knowledge we now take a more humane and rational view of these cases, but as our diagnosis of pure neurasthenia largely depends on the statements of the subject under examination and not on objective signs, we have to guard against deception. In forming an opinion as to the veracity of an individual we are guided by the consistency of his statements, whether the description he gives of his troubles harmonises with the general features of neurasthenia; the clinical signs of this affection are remarkably uniform, and the truthfulness of a litigant may be tested by suggesting improbable symptoms. In doubtful cases more than one examination should be made and the reports of the different interviews compared. Some allowance, however, should be made for a little exaggeration, for, as Dubois observes when discussing the nature of neurasthenia, "around a nucleus of real fatigue there is a coating of imagination." The individual who goes to bed dominated by the idea of sleeplessness will remain awake. The man who thinks he can only walk a certain distance will not do much more. The idea of impotence increases the disability.

To the ignorant and prejudiced employer it seems incredible that a workman should be able to hang about the streets and not be fit to resume his occupation; but the fear of returning to work may be very real. We recognise the occasional presence of phobias, which may prevent an otherwise strong and capable man from following his occupation. Take this instance. A gentleman who had been a keen man of business, after a spell of overwork is attacked with anxiety neurosis—he dreads to go out alone and to go to business, but he eats and sleeps well, and with a friend can spend hours at a skating rink. Such a condition is unaccountable, but its reality is accepted because there can be no motive for deception. In the case of the working man claiming compensation there may be an inducement for simulation, but such a possibility should not provoke a hasty judgment. It is only just, to recall that in neurasthenia, owing to the abnormal introspectiveness which is one of its characteristics, there is a tendency to the unintentional exaggeration of symptoms, and, moreover, as I have stated, there is a liability to the development of phobias—to the generation of the "anxiety neurosis," the subjects of the disorder frequently asserting that they have "lost their nerve," that they have a terror of scaffolds, ladders, machinery, and of noise and bustle. With timidity there is usually infirmity of purpose, arising from failure of will power, as there is intellectual as well as physical weakness. Aches and pains are often associated with the muscular and mental asthenia, and these will be aggravated by effort.

As to simulation, I have only met with two malingerers in five years. Dr. Collie, in the report before referred to, found only 31 malingerers in 2658 official examinations of cases of diseases and accident. Taking traumatic neurosis only, Bouveret states: "I think complete simulation is very rare and constitutes only a very small exception. Exaggeration is more frequent than simulation." Oppenheim is of opinion that malingerers only occur in the proportion of 4 per cent. Strümpell, Schultz, and others are of Bouveret's opinion.

In hystero-neurasthenia the association of hysteria with neurasthenia not only leads to a modification of some of its symptoms, but to the interposition of others. To the insomnia of neurasthenia are added the nightmare and terrifying dreams of hysteria—the defects of memory become more pronounced. Neuralgic headache takes the place of duller pains and cranial discomfort, and similar acute pains are likely to be experienced in other parts. Associated with these symptoms are objective signs of great moment—the somatic stigmata of hysteria. I will refer to a few of them only. Fine tremor of the closed eyelids and perhaps of the hands, the former very constant. Modifications in the sensibility of the skin, even when partial, are very significant, as in analgesia or hypæsthesia of a part of the forehead or of the back of the forearm. Electro-anæsthesia is particularly common also—the interrupted current, applied over certain areas, causing no appearance of discomfort, but over others giving rise to expressions of pain. Concentric restriction of the visual fields. Modifications of the fields for colour vision; the field for blue reduced, and inside that for red. Asthenopia, amblyopia, defective perception of the size of objects—macropsia and micropsia; a victim of traumatic hysteria I recently examined mistook with one eye a sixpenny bit for a five-shilling piece. Defective senses of taste and smell. As regards the latter, the fifth nerve is in some cases involved as well as the olfactory, for I have found in these instances that strong ammonia held under one nostril has given rise to no evidence of discomfort, while under the other it has excited exclamations of pain. Defective reflex of the soft palate, exaggeration of the knee-jerks, spurious or genuine ankle clonus, with absence of the plantar reflex. Moreover, there is often a history of terrifying dreams, of failure of memory, occasionally presenting peculiar features. In one of my cases sudden loss of memory caused the subject of the accident frequently to lose his way when out in the streets. There may also be much talking and starting in sleep, and evidence of minor hysterical attacks—the so-called "half-faints."

Dr. Larat has recently[5] described a new, and in his opinion a pathognomonic, sign of traumatic neurosis in a peculiar electro-muscular reaction in which the contraction excited by the positive pole equals or exceeds that by the negative pole, A.C.C. = K.C.C. or A.C.C. > K.C.C., the current used = 10 milliampères. I have not repeated his experiments.

It might be asserted that the subject of a hystero-neurasthenia was hysterical before he met with an accident, and it is possible, but hardly likely, as the victims of this disorder are generally men.

Bernheim and his school, represented by Dr. P. Blum and Dr. Amselle,[6] deny the existence of interparoxysmal hysteria with its numerous stigmata. They hold that these stigmata are not peculiar to hysteria, that they can exist without any other nervous manifestations, and that they are produced by auto-suggestion, either because the subject amplifies organic sensations due to associated disorders or to suggestion acquired through medical examinations or in some other way. Further, they state that the psychical stigmata do not exist—that the mental state of the hysterical is in no way characteristic. They would limit the term hysteria to the paroxysmal attack—the crisis—its ancient signification; such attacks, they hold, do not constitute a disease but a morbid psycho-dynamic reaction. The unduly excitable persons liable to this reaction they term "hysterisable."

Babinski[7] adopts similar views, but would make susceptibility to suggestion the characteristic of hysteria. Dr. Pierre Janet, in his admirable description of the hysterical stigmata, supports the views of the Salpêtrière School.[8]

My experience, extending over many years, convinces me of the existence of normal hysteria and of its stigmata. In searching for these stigmata I have exercised the greatest care to avoid doing or saying anything which might give rise to suggestion. In most instances, too, the subjects examined by me for the hysterical stigmata had not been subjected to a similar mode of investigation before. Tremor of the closed eyelids has often suggested to me the probability of the existence of hysteria; the sensibility of the skin has then been tested by pricking. The eyes being still closed, it is well to begin with the left side of the forehead or the back of the left forearm, and then, nothing being said, to test in a similar way the corresponding parts on the opposite side, and note the expression of the patient, for his demeanour is usually sufficient to indicate to what extent the prick is felt or occasions discomfort. A pretty strong faradic current applied to one part may excite a cry of pain, while over the corresponding area on the other side it gives rise to no such demonstration.

I have analysed the cases of traumatic neuroses which I have seen in my consulting-room during the last five years. I

[5] La Presse Médicale, Dec. 8th, 1909.
[6] De l'Anesthésie Hystérique, Revue de Médecine, Bernheim. Conception du Mot Hystérie; Conception de l'Hystérie, Amselle. De Anesthésies Psychiques, P. Blum.
[7] Journal de Pathologie Interne, 1905.
[8] Les Névroses, par le Dr. Pierre Janet, 1910.

select these, because at home I have had the appliances necessary for thorough examination.

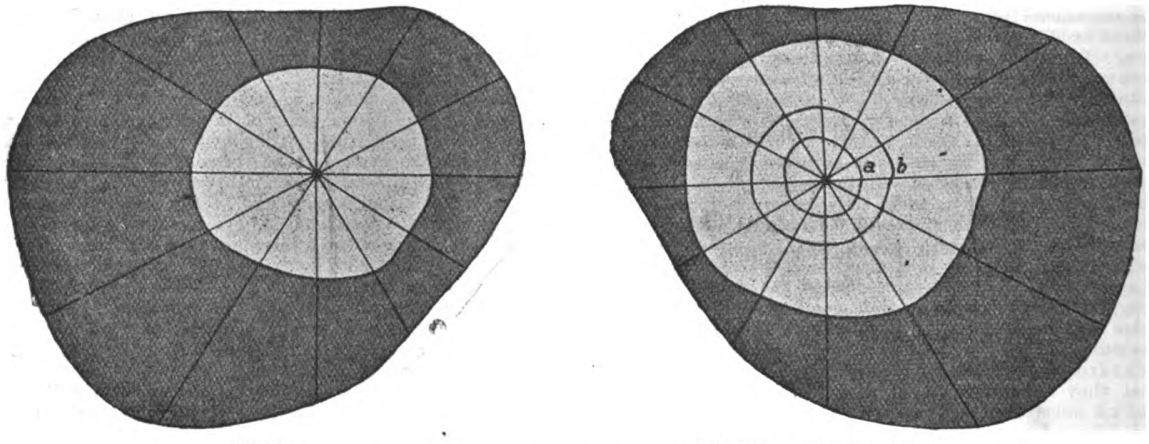
I find that the cases of traumatic neuroses are 40 in number; 23 of these are cases of hystero-neurasthenia, 13 of neurasthenia, and 4 of hysteria. 22 of the 23 traumatic hystero-neurasthenia cases were labouring men. Six of the 13 neurasthenia were persons of a better class injured in railway accidents. Of the 4 hysterical cases, 1 was a boy, another a girl, and the 2 others young men. In this return I have not included 2 cases of epilepsy and hystero-neurasthenia caused by blows on the head, nor 1 case of tabes and neurasthenia set down to a fall but probably due to other causes.

As to prognosis, cases of traumatic neurasthenia and mild hystero-neurasthenia, as is generally recognised, manifest a disposition to recover when they obtain compensation or damages, but the more severe hystero-neurasthenic cases do not exhibit the same tendency. I know cases where the disorder has continued from one to three years, and another, a case of traumatic neurasthenia, which lasted ten years. Oppenheim, in 33 cases of hystero-neurasthenia, met with 6 cases only of improvement, and Hodges 12 cases of recovery in 21. Bouveret states "that all observers are unanimous in affirming the gravity" of this disease. Vibert considers that the prognosis is grave when there is great mental depression, anxiety, tendency to weep, loss of memory, confusion of ideas, and profound change of character, accompanied by loss of strength and emaciation. According to the same author, the general development of the cerebral symptoms after some weeks' delay is another unfavourable sign. It is evident, therefore, that in the severer forms of traumatic neurosis, positive and unguarded opinions are to be avoided.

Analysis of the Remaining Cases of Hystero-neurasthenia—22

Tremor of closed eyelid	19
Generalised tremor	6
Defective sensibility of the skin sometimes limited to one-half of the forehead or the back of the forearm	20
Defective sensibility of the mucous membrane of the tongue, cheeks, or conjunctivæ	20
Electro-anæsthesia (but this test was omitted in some instances)	15
Defective sense of taste and smell (articles used, syrup and bisulphide of carbon)	16
Strong ammonia under a nostril not noted	4
Restriction of the visual fields (in one instance the vision was central only)	22
Achromatopsia	10
Asthenopia	6
Diplopia	3
Macropsia	1
Deafness	3
Knee-jerks exaggerated and plantar reflexes absent	18
Ankle clonus	4
Some unsteadiness, standing with closed eyes. (The less valuable psychical stigmata were present in many instances)	7
Very positive defects of memory	5
Tendency to sleeplessness	19
Terrifying dreams	14
Talking and starting in sleep	6

The significance of the somatic stigmata—the defects of sensibility—is increased by the fact that they are either limited to one and the same side or more marked on one side. I recently examined a man with traumatic hystero-neurasthenia in whom there was general and complete anæsthesia; no evidence of pain was manifested on thrusting a needle through the tongue nor on the application of faradic and galvanic currents, intense enough to cause tetanic contraction of the muscles.



Left field. Right field. *a*, field for blue. *b*, field for red.

(Inserted by permission of the Editor of the Liverpool Medico-Chirurgical Journal.)

I can only give particulars of one typical case of hystero-neurasthenia. I have analysed the symptoms presented by my other cases of this disorder with the view more particularly of indicating the frequency with which objective symptoms were met with, rather than to denote the comparative prevalence of the various hysterical stigmata.

A man, aged 28 years, was, while writing, struck on the head by a falling shutter and rendered unconscious for some hours. I saw him 13 months after. He had never returned to work, as he complained of general weakness, depression of spirits, loss of energy, defective memory, and tendency to sleeplessness. I found left hemianæsthesia and electro-anæsthesia, loss of sense of smell (bisulphide of carbon not being recognised held beneath left nostril; strong ammonia also in the same position caused no discomfort). Loss of taste for syrup on left side of tip of tongue, much restriction of the visual fields, inversion of the fields for red and blue (see charts) absence of palate reflex, ankle clonus, and plantar reflexes absent. He was liable to certain fits; they commenced with palpitation, a rushing sensation in the head and noise in the ears; he struggled and lost consciousness for some minutes. On coming out of an attack he clenched his fists, stiffened his legs, and arched his back

Liverpool.

DESMOID TUMOURS.

BY RUTHERFORD MORISON, M.B. EDIN., F.R.C.S. ENG. & EDIN.,
PROFESSOR OF SURGERY, UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, NEWCASTLE-UPON-TYNE;
AND
HAMILTON DRUMMOND, M.B., B.S. DURH.,
SURGICAL REGISTRAR, ROYAL VICTORIA INFIRMARY, NEWCASTLE-UPON-TYNE.

IT is well recognised that fibrous tissue tumours, known as fibromata, may arise from any structure in the body where connective tissue is to be found, those arising from the fibrous tissue of the uterus affording perhaps examples *par excellence*. The term "desmoid," derived from the Greek δέσμος, and signifying something that has the characteristics of a ligament, is applied to such a tumour when occurring in the muscles or muscular fasciæ of the abdominal wall and

possessing certain clinical characteristics apart from fibromata occurring in other parts of the body. As several of these interesting tumours have come under our notice, a record of them is certainly justifiable, for not only are they uncommon, but, as the cases show, early recognition and free removal of such tumours may be the only means of preventing a fatal termination.

Of the seven cases that have occurred during the last few years, two are dead from the disease, one cannot be found, and the remaining four are well. One of these, however, underwent a second operation for recurrence of the growth seven months after the tumour was first removed. The separate case notes show that of the cases ending fatally one had a history of four operations, three of them being for recurrence of the disease, which eventually involved the hollow viscera in the abdominal cavity.

A striking feature mentioned in the literature is that nearly all of these growths occurred in women who had borne children and who not infrequently gave a history of difficult labour or of injury to the abdominal wall. Both Bidwell [1] and Harvey Stone [2] report cases in which the tumour was first noticed after the onset of pregnancy, and one of our patients (Case 1) noticed a swelling when she was six months pregnant. All the women had borne children, and one, indeed, twins, but nothing in their histories pointed to difficult labours, though a special attempt to establish this fact was not made.

The tumours are never tender on palpation, except in the later stages, when the peritoneum is involved. They have no movement further than that communicated by the abdominal wall on respiration. They do not disappear—on the contrary, indeed, they sometimes become more apparent—when the patient raises the head and shoulders, so rendering the abdominal muscles tense. These two latter signs are common to all tumours of the abdominal wall. As these growths increase in size they tend to do so in the plane of least resistance, and if arising from within the rectus sheath, whether from the sheath or from the muscle itself, the tumour spreads longitudinally upwards and downwards, and will not until a late stage advance laterally and perforate the sheath of the muscle. When occurring in the oblique muscles they give rise to sausage-shaped tumours which lie obliquely or transversely.

Although desmoid tumours have such well-marked clinical features that when these are known mistakes can scarcely be made, it is noteworthy that one was diagnosed and sent up as an enlarged gall-bladder containing many calculi, as the tumour lay in the upper part of the right rectus muscle; while in a second case a diagnosis of multiple sub-peritoneal fibroids of the uterus was made, the tumour, a large one in this case, occupying the lower part of the right rectus muscle. In a third case a diagnosis of appendix abscess had been made, and in a fourth so many differences of opinion arose as to the nature and the proper treatment of the growth after consultation in a London hospital that the patient decided to come to Newcastle for the operation.

It must be remembered, however, that although the majority of cases occur in women they may be found in men. Our cases showed six women and one man. The growths must be distinguished from tumours originating within the peritoneal cavity, and adherent to the belly wall, and from those that have their origin primarily in the abdominal wall. Of these latter the most commonly met with is the gumma or deep-seated abscess.

Without heeding the clinical features a desmoid may be mistaken for an abdominal tumour arising from any of the hollow viscera, depending upon the site and shape of the tumour. For instance, if the tumour is rounded and situated over the upper half of the right rectus muscle a diagnosis of pyloric growth may be made. Of the tumours having their origin within the peritoneal cavity, and sometimes closely simulating desmoids, a chronically inflamed appendix which invades the region of, and is adherent to, the abdominal wall, forming a pancake-like tumour, is most commonly met with. A large desmoid undergoing myxomatous change may exhibit precisely the same features when situated in the right iliac fossa. These growths may exist for a long time before they show any great increase in size. In one case the tumour had been known to exist for three years before it began to grow seriously. They are in some instances first noticed during pregnancy, the increasing vascularity of the abdominal wall in pregnancy appearing to stimulate the tumour to more rapid growth, and thus bringing it for the first time to the notice of the patient.

On section, to the naked eye, these tumours show whorls of fibrous tissue similar to uterine fibroids, though the growing edge is often soft and pearl-coloured, and can be seen pushing its way through the strands of muscle. The microscopical appearance, if the section be taken from the growing edge of the tumour, will show spindle cells with but little fibrous tissue. At the centre, however, where the blood-supply is less active, fibrous tissue will be in excess. The changes undergone are mucoid, showing cysts, myxomatous change, fibrosis, and lastly, but to be distinguished from the above instances of degeneration, malignant change. This was the termination of Case 5, and it is owing to the possibility of such change occurring that immediately a tumour in the abdominal wall, however small, is discovered, exploration and microscopical examination should follow without delay.

Conclusions.—There are certain tumours—desmoids—originating in the abdominal wall, chiefly in the upper half of the rectus muscle, but also in connexion with the other muscles, which are of considerable clinical importance.

They are likely to be mistaken for growths *in* the abdomen, unless the possibility of their occurrence is remembered.

Their association with pregnancy is so frequent as to constitute more than a coincidence. Possibly traumatism, by muscle stretching or tearing, is of etiological significance.

A firm, but not tender, sausage-shaped tumour, possessed of some mobility, across, but not in the direction of the fibres of the relaxed muscle with which it appears to be associated, becoming fixed when that muscle is made tense, and occurring in a woman recently pregnant, is a desmoid tumour.

The treatment is to excise the growth at once, along with a free margin of the surrounding structures, including the peritoneum underlying it.

CASE 1.—A woman, aged 19 years, married; one child, aged 6 months. Admitted complaining of a swelling below the lower ribs on the left side on Sept. 4th, 1902. The swelling was smooth, very hard, and appeared to be connected with the upper part of the left rectus muscle and to be attached to the ribs. (The patient had noticed the swelling for three years.) Operation Sept. 4th by Dr. A. Parkin (who was then Mr. Morison's house surgeon). An incision was made over the mass, which was incised and found to be a growth in the rectus muscle and adherent to the ribs. The whole mass with the affected portion of the muscle and ribs was excised. The skin incision was closed with silkworm gut. The divided muscles were not sutured. The patient left hospital on the 12th healed. Pathological report: "Spindle-celled sarcoma."

In December, 1901, a nodule was discovered in the scar and it was considered to be a recurrence. In May, 1902, she complained of pain and a mass could be felt in the margin of the scar near the ribs. She was not readmitted till March 15th, 1903, with a definite tumour in the upper third of the scar, conical in shape, about 1½ inches by 1 inch, not attached to the ribs. Operation (Mr. Morison) on March 27th. A vertical elliptical incision, including the old scar, was made into the peritoneal cavity in the middle line below the ensiform cartilage. The peritoneum just over the left lobe of the liver was invaded by the growth. The upper surface of the left lobe of the liver was roughened by adhesions, but there was no visible growth in the liver itself. The costal cartilages of the seventh, eighth, and ninth ribs were divided on the outer side, and the portion of abdominal and thoracic wall between this and the mid-line, including the tumour, was excised down to the middle of the upper half of the rectus muscle. In removing the attached portion of diaphragm an opening was made into the pleura and air was sucked in. The pericardium with the heart beating forcibly in it was exposed at the bottom of the wound. A piece of indiarubber sheeting packed down with gauze was used to occlude the hole into the pleura and the skin only was sutured over the gap. It was not possible on account of the size of the opening to make a more effective closure of it. The patient bore this formidable operation well and recovered with very little shock. The portion removed included an ellipse of scarred skin 3½ inches by 1½ and portions of three costal cartilages, the longest being 4 inches. The growth appeared to have extended towards the peritoneum between two ribs and projected against it by three knob-like processes. The peritoneum covering these was roughened but did not appear to be invaded by the growth, which had a definite capsule, except at one part where it was quite soft and brain-like and had burst. The remainder of the growth presented the appearance of a fibroma. Pathologist's report: "Spindle-celled sarcoma." The patient left hospital on July 10th.

Nine months later (April 8th, 1904) she was readmitted because she had noticed something coming back and it had caused her some pain. On examination there was a mass of growth occupying the remaining portion of the upper half of the left rectus muscle for about three inches and below the old scar, which was healthy. It was of interest to note how firm the abdominal wall had become from cicatricial tissue at the site of the extensive removal of all of its structures except the skin, for there was no hernia, and it felt strong. Operation on April 12th. The abdomen was opened in the middle line to the right of the tumour, which was then seen to be adherent by its deep surface to the

[1] West London Medical Journal, 1906, vol. xi.
[2] Annals of Surgery, vol. clxxxviii.

liver and to the omentum. After separation of the adhesions and gauze packing the growth was widely excised through a crucial incision. The abdominal wall was repaired as well as seemed possible by deep thick catgut sutures.

Four months later (August, 1904) the patient reported herself. She looked well and strong and there was no sign of recurrence. She was readmitted three months later (Nov. 7th) greatly changed, as she was now thin and looked anæmic and complained of pain coming on after food. On palpating the abdomen a deep mass was felt in the neighbourhood of the umbilicus adherent to the abdominal wall. Operation on Nov. 15th. On opening the abdomen the mass was found to be adherent to the abdominal wall and invading the stomach and duodenum. An attempt was made to remove it, and during this the growth was opened and a large mass of soft broken-down material came away. The lesser sac was now found to be filled by growth which presented through the gastro-hepatic omentum and the attempt to do a complete operation was abandoned. The visceral openings and the abdominal wall were closed by suture, and severe shock followed the operation.

The pathologist's report of the tumour was "spindle-celled sarcoma." The patient gradually recovered from shock, but died 13 days after the operation soon after the formation of a duodenal fistula. Post-mortem examination showed that all the visible growth had been removed, but that the lesser sac was full of it. There were no secondary deposits in the lungs or in any of the other viscera. The opening in the duodenum was in its first part on the upper surface just beyond the pylorus and was due to leakage from the part sutured.

CASE 2.—A married woman, aged 36 years; had had two children aged 1 and 8 years. Twelve months ago the patient accidentally discovered a lump in her right side. It was quite painless, and except for a slight pricking sensation caused her no inconvenience of any kind. The tumour had grown in size very little since it was first noticed, and on examination a large easily palpable tumour was found in the region of the gall-bladder and in connexion with the right rectus muscle. It was not tender and could be picked up and held between the finger and thumb. On Feb. 22nd, 1905, a vertical incision was made over the tumour, which was widely excised. The whole of the rectus muscle surrounding it and a portion of the peritoneum about the middle of the posterior surface of the tumour where it was adherent were removed. The abdomen was closed in four layers. The tumour on section was hard and firm like a fibroma. The pathologist's report was: "Dense fibroma containing spindle cells." December, 1908: Well; no recurrence. March, 1910: Well.

CASE 3.—A married woman, aged 28 years; had had two children, 4 and 2½ years. Admitted to hospital July 23rd, 1906. Patient was well up to four years ago, when she noticed that something was wrong with her left side. She made this observation shortly after her confinement. Six months later she noticed a definite lump in the same situation which had gradually got larger and was now of about the size of a hen's egg. Examination showed a hard nodular tumour in the abdominal wall above Poupart's ligament and above the left pubic spine. As her abdomen was a lax one the tumour could be lifted up between a finger and thumb. Operation on July 24th. Oblique incision over the tumour 4 inches in length. The tumour was in the rectus muscle. It was removed with the adjoining and surrounding muscle and the abdominal wall was closed in layers. Examination of the tumour showed all the characters of a fibroma. It sprang from the sheath of the rectus muscle. Pathologist's report: "Fibrifying spindle-celled sarcoma." This patient cannot be found, having left the district.

CASE 4.—A married woman, aged 35 years. The patient had three children, the last born two years ago, when she had twins. Five weeks ago she noticed a tumour 1 inch below the ribs and towards the right side; quite painless. On examination there was a small hard rounded tumour in the right rectus muscle just below the umbilicus. The tumour could still be felt when the abdominal muscles were made tense. A longitudinal incision was made over the swelling and a portion of the rectus muscle and its sheath, including the growth, was removed along with the peritoneum, which was adherent behind. The muscles were drawn together by a series of strong catgut sutures. On section the growth cut and looked like a fibroma invading the rectus muscle and its sheath. The pathological report was "Fibrifying spindle-celled sarcoma invading voluntary muscle."

CASE 5.—A man, aged 33 years, was admitted to hospital on Feb. 6th, 1907. He looked ill and had lost weight. He complained of loss of appetite and night pain in the right side of the abdomen, which had a swelling in it. On examination, there was a hard, cake-like mass in the right iliac fossa, which at one point showed an area of softening. On the 9th an oblique incision was made over the tumour and the muscles divided. They were infiltrated with a fibrous deposit, and in parts showed soft débris-like growth. The peritoneal cavity was not opened. The microscopical report was that the "structure is that of myxomatous degeneration, probably sarcomatous." Patient developed a faecal fistula on March 9th, and left hospital a few days afterwards in very poor general condition. Several months later he was traced to the Western Infirmary, Glasgow, where he died.

CASE 6.—A married woman, aged 25 years, was admitted to hospital on March 9th, 1908, complaining of a lump in the right side of five months' duration. She had had two children; the first was a year old and the second eight weeks. The tumour was painless and had not increased in size. On examination, patient was a small, thin woman and had a hard tumour of the size of a hen's egg in the upper part of the right rectus muscle. It had a sharply defined inner and outer edge, but above and below ended indefinitely in the muscle. It had all the characters of a tumour in the abdominal wall. On March 10th the abdomen was opened in the middle line parallel to the tumour, and a transverse incision was made above and below the growth. All the structures of the abdominal wall around the tumour were removed down to the peritoneum which was left intact. The divided edges of the internal oblique and transversalis muscles were drawn over to and stitched to the linea alba, and the tendon of the external oblique was sutured over them. The tumour, which measured 4 inches by 3 inches and was 1 inch thick and invading the rectus muscle, was closely incorporated with its anterior sheath. On section the tumour looked like a fibroid of the uterus and showed definite whorls of fibrous tissue, with small mucoid cysts in its interior. Patient left the hospital well. On Oct. 17th of the same year she returned with a recurrence, stating that she had remained well for four months after the operation, when she again observed the tumour, which was quite painless as before. Her general condition was good. At the lower aspect of the incision in the rectus muscle there was a hard small mass of growth. On Oct. 20th, 1908, by a U-shaped flap he abdomen was opened and the whole of the portion of the rectus muscle containing the growth was widely removed. The omentum was brought up to fill the gap in the peritoneum and the muscles were brought together as well as possible, being sutured with silk. She made an uninterrupted recovery and left hospital well and healed. On March 17th, 1910, she was seen again. She was in excellent health and there was no recurrence and no weakness in the scar, and she could do her housework well. On both occasions the pathologist's report was that the "tumour was a fibro-sarcoma."

CASE 7.—A female, aged 30 years. Had had two children, the youngest three years ago. About two years before admission she noticed a lump of the size of a walnut below and to the right of the umbilicus. Recently the swelling had increased in size rapidly. It had always been quite painless. It was first noticed 12 months after the last child was born. The tumour was hard and not tender, and was about 2½ inches long by 1½ inches across its middle. It followed the line of the rectus muscle and had all the characteristics of an abdominal wall tumour. On Oct. 31st, 1908, a V-shaped incision was made over the tumour. The lower part of the rectus muscle below the tumour was divided across, the deep epigastric artery being ligatured and divided. The peritoneal cavity was opened in the middle line, and the middle third of the rectus muscle, including the aponeurosis and peritoneum, were removed. The abdominal wall was repaired by suturing the peritoneum separately, and the linea alba was brought to the cut edges of the transversalis and oblique muscles. On section the tumour was lozenge-shaped, hard, and fibrous. The pathological report was: "Fibrifying spindle-celled sarcoma with myxomatous change."

NOTES OF SOME CASES TREATED BY VACCINES OF UNKNOWN ORGANISMS.

BY E. C. BOUSFIELD, D.P.H. CAMB. & LOND.,
DIRECTOR, CAMBERWELL RESEARCH LABORATORIES; BACTERIOLOGIST, METROPOLITAN BOROUGHS OF CAMBERWELL AND HACKNEY.

NOT the least merit of the vaccine treatment of disease is the fact that it necessarily involves the determination of the actual cause of the ailment from which a given patient is suffering, and so differs essentially from those methods which depend upon the treatment not of diseases but of symptoms. This determination of the specific cause is at once the source of its strength and the index of its limitations.

Attempts are too often made, it is to be feared, to employ vaccines on the supposition that if they do no good they can, at any rate, do little or no harm. This is no doubt very largely true, especially since in some cases there is what may be called a symbiotic infection, in which more than one factor is concerned, as, for example, pustular acne, in which the staphylococcic infection is secondary to that of the bacillus which determines by its presence the formation of the comedones, and the pustules may be cured without relieving the acne itself in the least. Or it may happen, and often does, that the apparent cause is an organism which does not lend itself to classification, either because of its unusual form, or because the condition of the patient is such as not to allow time for the purpose. Of this class are three of the four following cases.

CASE 1.—*Pleurisy following measles.*—The patient was a boy, aged 12 years, the son of a medical man. He had had an attack of measles followed by whooping-cough, and upon this combination there had supervened a severe attack of broncho-pneumonia, in the course of which he had developed pleurisy over the surface of both lungs. There were loud friction-sounds to be heard at many points, but no fluid could at any time be detected anywhere. As the patient's condition was extremely grave, I was asked to do my best to prepare a vaccine for him. The only material available was the sputum, which was scanty and slightly rusty. The mouth was cleansed as far as possible, and a small quantity of sputum was secured. This was thoroughly washed in sterile salt solution, several times successively, and a small fragment from the last washing was rubbed thoroughly on blood serum. A very scanty growth was secured in one tube, and this sufficed to make two doses of vaccine, the organism being a coccus of irregular size, from a minute dot to a cell of about half the size of a torula. The first dose lowered the temperature within 24 hours nearly to normal—it had previously ranged from 101° to 103·5° F.—and the second dose, two days after the first, still further improved matters. The good effect, however, was only temporary, and it was necessary to repeat the process of preparation. This time five doses were obtained, and four of these were administered with continuous improvement, but the fifth was mislaid, and after five days the symptoms recrudesced. Fortunately the fifth dose was at last recovered and sufficed to bring the temperature to normal and keep it

there, and the boy made a good recovery. His younger brother, who was taken ill at the same time, succumbed to the initial disease before I was called in.

CASE 2. *Malignant endocarditis, with phlebitis.*—I was summoned to Wantage to see, in conjunction with Mr. W. M. Woodhouse, a lady who had been ill for some weeks with high temperature and signs of general blood infection, including phlebitis—in both legs if I remember rightly—and evidence of vegetations in the form of a pronounced mitral murmur. I made several cultures, mixing the patient's blood with ordinary nutrient agar and sloping the tubes, as well as taking smears. The blood used for the cultures was withdrawn from the median basilic vein, under strict antiseptic precautions, and a scanty growth was obtained, though the whole of the tubes afforded sufficient for the provision of ten tubes of vaccine. The organism was apparently a simple staphylococcus, but would not grow on any other medium than blood-agar. When the vaccine reached Mr. Woodhouse the patient felt so much better that she refused to have it administered. About a month afterwards the symptoms reappeared, and the patient being in practically the same condition as before, I advised the use of the vaccine. The first dose reduced the temperature practically to normal, and only two more were administered, the patient's condition rapidly improving. After a few weeks many of the symptoms returned, but they were again removed by the use of the remainder of the vaccine, and I am informed by Mr. A. E. Cawston, into whose hands the case has passed, that all that is left is a small amount of blockage of the veins, which is also disappearing. No trace of the mitral murmur remains.

The next two cases are of pyrexia following delivery, but totally different in origin in the two cases.

CASE 3. *Puerperal toxæmia due to B. coli communis.*—The patient was an inmate of the British Lying-in Hospital, in whom severe pyrexia developed about the fifth day. She was a multipara. The material supplied to me consisted of a swab which had been charged in the uterine cavity. Having made the ordinary cultures, it occurred to me that the infection might be due to continuity of surface, and I washed the swab off in a tube of McConkey broth. There was a large and rapid growth of typical B. coli, and I prepared a vaccine of which three doses only were required to effect a cure, and the patient was discharged perfectly well about the fourteenth day.

CASE 4. *Puerperal toxæmia, due to an unidentified organism.*—I was asked by Dr. R. Thurston to see with him a woman who, after a normal confinement, had developed rigors, returning at intervals of from 12 to 16 hours, with concomitant high temperature, and followed by profuse sweating. I saw the patient about the eighth day and found the lochia somewhat purulent, but not particularly offensive, and the general condition fairly good. There was no sign of localised peritonitis nor any marked abdominal tenderness. By Dr. Thurston's wish I withdrew 10 c.c. of blood from the median basilic vein, but for my own satisfaction I had the vagina carefully cleansed and took a swab from the interior of the uterus. Cultures were made on the spot from both sources, but the blood coagulated so rapidly that there was much difficulty in utilising the whole amount taken. This may account for the fact that there was a growth of B. mesentericus in one tube, though all the others remained sterile. From the swab an abundant growth of a white staphylococcus was obtained, which grew freely on the ordinary media. From this a vaccine was prepared, but though the patient appeared to benefit at first, and the intervals between the rigors increased, this was only temporary. A second swab was taken and gave no better result. A third one, however, was taken coincidently with what Dr. Thurston described as a slight rush of pus. This gave on culture the same staphyloccocus as before, but in many times smaller numbers, and also a diphtheroid bacillus, familiar to me in troubles of long standing within the genito-urinary passages, to which, from the difficulty of subculturing it, I have given the name of B. fugax. A couple of doses of this were made, and the first one increased the interval to 48 hours, whilst the second put an end to the rigors altogether, and the patient improved steadily and satisfactorily, so that there was no need to use the other ten doses which were sent as soon as ready. I advised that one more should be administered, however, to make assurance doubly sure.

The case which follows is rather an example of scientific guessing than of diagnosis, but the gravity of the condition and the age of the patient lend it considerable interest.

CASE 5. *Cholecystitis in a gall-bladder full of gall-stones.*—I was summoned to Nottingham by Dr. W. T. Rowe to see a lady of 83 who had suddenly, after over-exertion, developed acute cholecystitis, and in whom Dr. Rowe had satisfied himself that the gall-bladder was full of calculi. In view of the age of the patient, and the great risk of an operation, I was led to consider the possible agent of infection, and as it seemed probable that B. coli was the organism concerned I took down with me a dose of 100 millions just prepared for another patient. After consultation this was administered, and marked improvement followed. Before my next visit I had prepared a "coli" vaccine from the patient's own fæces, and except for one day, when the symptoms seemed to return with full force for 24 hours, the improvement in the patient's condition was continuous, and she is now, having received five injections, after six weeks as well as ever, though, so far as can be judged, the calculi are still *in situ*. As the patient in this case happened to be my own mother it will be understood that the issue gave me special satisfaction.

In view of the favourable character of the results in the foregoing cases it seems desirable to draw attention to the fact that they were obtained under the best possible conditions—namely, in all cases, either by myself making the cultures directly at the bedside, or by the careful exclusion of possible contamination.

Medical men frequently ask how much blood is needed for the preparation of a vaccine. It cannot be too insistently stated that, for blood cultures at any rate, the latter must be made at the bedside, and incubated at the earliest possible moment. Drops of blood from fingers or ears are absolutely worthless either for examination for bacteria—except in anthrax—or for the preparation of vaccines, and most of all does this apply to blood sent in capillary or other tubes, in which the whole of the particulate matter is entangled in the clot, even if one could have the least confidence that any growth obtained or organism seen was actually present in the blood, and was not the result of accidental contamination. It is hardly too much to say that the presence of the "opsonist" is almost as necessary for the success of a blood-culture as that of the surgeon for the performance of an operation.

De Crespigny-park, Denmark Hill, S.E.

PRIMARY ACIDOSIS; RECOVERY.

BY SIDNEY BONTOR, M.D., M.S. DURH.,
SURGEON TO THE WEST HERTS HOSPITAL.

MUCH attention has been given lately to the production of "acidosis" by anæsthetics and as the terminal condition of such complaints as diabetes. The following case, which is probably the first recorded instance of recovery after a severe primary acid-intoxication in an adult, will therefore, I think, be of interest.

The patient, a widow, aged 68 years, has always enjoyed good health, although rather pale and not very robust. Except for an attack of acute nephritis in 1887 she has had no illness. She took an ordinary mixed diet, but has always been a small eater; she takes an occasional glass of wine, but has been practically an abstainer from alcoholic beverages for the last 20 years. She drinks an average of 2½ pints of fluid daily, and she leads a regular, healthy life. On Nov. 9th last year, until when she had been in her usual health, she remained some time in her garden and became exceedingly cold, so cold that in spite of her wrapping up with hot bottles in a warm room she was a very long time getting warm again. Headache came on during the evening and prevented her from sleeping during the night. On the next day the headache was worse and she felt sick but did not vomit; the bowels acted as usual. She got up at midday, but movement aggravated the feeling of sickness and the headache so that she was unable to do anything. This condition continued for the next three days, the headache quite incapacitating her. Her diet was very small in amount and consisted of fish and milk puddings with plenty of drinks.

On Nov. 13th I saw the patient for the first time. She was then feeling better, but still had headache rather severely. She appeared to be recovering from an intestinal toxæmia; the feeling of sickness had passed off, her temperature was 98° F., her bowels had acted each day after a small dose of saline in the morning, and her

urine was normal. (The urine had been examined on several occasions since her attack of nephritis 20 years ago and had always been normal.) During that day she had the same diet and felt better, sleeping pretty well. On the next day she felt still better in the morning and had some bacon for breakfast and some chicken at her midday meal. During the afternoon, however, the headache returned and gradually increased in severity, and she became drowsy but did not have continuous sleep. On the 15th the headache was "crushing" and she was quite drowsy and apathetic. On the 16th and 17th she was constantly sick and the bowels did not act; she could only take fluids. On the 18th she became slightly delirious, and was wandering all night. Her bowels acted well after a small dose of calomel; the urine was still normal. On the 20th she was practically unconscious, but could be roused occasionally; Dr. R. Hutchison kindly saw her with me, and he gave a very bad prognosis, expecting she would not survive many days. From then until Dec. 11th she never recovered consciousness, on some days being so deeply comatose that she would not respond to any stimulus, food placed in her mouth remaining unswallowed. For three days (Dec. 2nd to 5th) there was well-marked Cheyne-Stokes respiration. On those days she vomited several times, the vomit being very acid; she was not quite so deeply unconscious afterwards, and with much care about three pints of nourishment were able to be administered daily. On Dec. 10th she began to be less deeply unconscious, gradually improved, and made an uninterrupted recovery, being able to sit out of bed by the 20th and to go downstairs on Christmas Day, and now, a year afterwards, she feels as well as ever she did, except perhaps a little less vigorous.

The diagnosis of this case was difficult. It was evidently a toxæmia and appeared to rest between uræmia, an intestinal infection, and acidosis, but at first there was nothing to enable a differential diagnosis to be made. The urine, which was examined nearly every day, gave no definite reaction until Nov. 22nd—13 days from the onset of the condition. Then diacetic acid was found to be present and the condition was shown to be one of acid intoxication, and a line of treatment was framed to meet the condition. In order to keep up the store of glycogen the diet was entirely limited to carbohydrates, and with a view of neutralising as far as possible the acid condition bicarbonate of soda was introduced into the system as freely as possible. It was given in every feed and by slow introduction into the rectum, according to Murphy's plan, of continuous rectal infusion as long as the bowel would tolerate it, and afterwards by occasional enemata.

Bearing in mind the striking results obtained by Young and Williams, which have proved that acetonæmia varies with the amount of oxygen intake during anæsthetisation, oxygen was administered freely day and night, and one of the first recollections of the patient is the extremely refreshing sensation produced by its inhalation. Strychnine was commenced when the heart began to fail, and was kept up until recovery was assured; 1/60th grain was given every four hours at first, and subsequently twice a day. The administration of food was extremely difficult, and the patient's recovery must be largely attributed to the great care and patience exercised by her daughter and the nurse, 20 minutes frequently being required to adminster a few ounces of food.

The consideration of the etiology of this case is interesting. The exciting cause appears to have been the extreme cold experienced on Nov. 9th. This probably so interfered with the digestive processes that an intestinal toxæmia was induced; and subsequently, by their work in dealing with the resulting toxins, the liver cells were so damaged that they were incapable of performing their normal function of transforming the carbohydrates into glycogen. Moreover, as this particular patient has always been a very small eater, and is always pale and has a very small amount of adipose tissue, it is possible that her store of glycogen is always very small; and as extreme cold is one of the causes which produce loss of glycogen, it is probable that this store of glycogen became exhausted during the first few days of her illness. This view is supported by the fact that, after a temporary recovery, she became rapidly worse when acid-producing foods were introduced on Nov. 14th. The original toxæmia appeared to be passing off, but in consequence of the impaired action of the liver cells and the exhaustion of her store of glycogen, the fatty acids were not fully oxidised, and the organic acids, combining with the alkaline bases of the blood, reduced its alkalinity until the "acidosis" was produced.

The diacetic reaction disappeared from the urine on Dec. 9th and the urine has remained normal ever since. She is now taking her ordinary diet and leading her usual life.

Great Berkhamsted.

THE USE OF THE FARADIC CURRENT IN THE TREATMENT OF PERSISTENT APHONIA FOLLOWING LARYNGITIS; TWO CASES.

BY FRANCIS HERNAMAN-JOHNSON, M.D.,
CH.B. ABERD., R.N. (RETIRED),
HONORARY SURGEON AND RADIOGRAPHER, BISHOP AUCKLAND DISTRICT HOSPITAL, DURHAM; LATE SURGEON, ROYAL NAVAL HOSPITAL, PLYMOUTH.

IN setting forth the following cases, together with such brief comments as seem to me desirable, I have no wish to pose as a laryngologist. It is rather as one interested in the application of electricity in its simpler forms to the exigencies of everyday practice that I venture to hope what I have to say may prove of some value.

CASE 1. *Aphonia of 12 years' duration.*—The patient, a clerk, aged 38 years, in his early manhood had been what is popularly known as a "local preacher," and for years indulged in pulpit oratory of a vehement nature. On two or three occasions during this period he lost his voice for a few days, but it always returned with rest. At length, however, being upon one occasion, in the depths of winter, called to preach at a remote country chapel, he caught a severe cold and was confined to bed for a fortnight. Meanwhile his voice left him entirely, and to his alarm did not return with the subsidence of the bronchial symptoms. During the ensuing decade the patient submitted to a variety of treatments at the hands of various medical men—sprays, gargles, lozenges, internal paintings, external blisterings—in fact, ran the whole gamut of orthodox remedies many times over. All this was of no avail. Finally, at unqualified hands he underwent a four months' course of what, so far as I could gather from his description, must have been the galvanic or continuous current. The result was likewise *nil*. A laryngoscopic examination showed the vocal cords to be slightly thickened and pinkish in colour. On attempting phonation they failed to approximate fully, remaining separated by an elliptical opening—a state of affairs due to paresis of the internal tensor muscles. Judged by the long history, the case did not look very promising from the point of view of treatment. All I could tell the patient was that a course of electricity might be of benefit. He, however, demurred, saying that he had already undergone (and paid for) such a course. It was not until I convinced him by personal application that the form of current I purposed using differed from the one previously experienced that he consented to a fortnight's trial. Two weeks' mild external faradisation produced the following result. Aphonia was no longer absolute; true voice sounds could be produced at times, especially in the morning when the patient was fresh. With the laryngoscope an attempt to phonate was seen at first to be successful, the cords approximating fairly well; but the adductor muscles were not yet equal to sustained effort, and soon relaxed. A month's further treatment on these lines was carried out, with the addition of piano-aided exercises in producing and sustaining low notes. By the end of this time speech had become entirely vocal, except at such times as the patient was very fatigued, when a relapse occurred to the old whispered speech. It would be idle to say that his voice was perfect, or even pleasing, but at least he was now able to make himself heard across an ordinary room—a feat of which he had been incapable for nearly 12 years. Whether or not anything more could have been accomplished I am unable to say, as the patient's firm chose this particular time to remove him to another town. He called on me six months later, and his voice was then practically the same as when I last heard him.

CASE 2.—The patient, a school teacher, aged 22 years, a cousin of the man referred to above, came to me complaining of similar throat trouble; the aphonia, however, was not

absolute, speech in a hoarse, croaking voice being occasionally possible. There was no history of excessive strain, but one of repeated neglected "colds," with accompanying laryngitis. A gradual deterioration of the voice resulted from this neglect, and it finally became so bad that the girl was obliged to resign her position as a teacher. This occurred two years before I first saw her. A view of the larynx showed the vocal cords somewhat swollen and congested. Efforts to speak resulted in a fair degree of approximation, except that a small triangular space remained at the back of the glottis. The aphonia was therefore apparently as much due to catarrhal changes in the tension and vibration of the cords as to neuro-muscular defect. In addition to the laryngeal inflammation, there existed permanently swollen tonsils, congestion of the pharynx, and adenoids. The patient was quite unable to breathe through the nose. The question of treatment presented difficulties. The girl expected to be cured, as her relative had been, by the simple application of electricity. A consideration of the facts of the case made me not very hopeful as to the benefits to be derived from faradisation alone. I recommended preliminary removal of the tonsils, &c., but finally yielded to her importunities, and consented to try the effect of a fortnight's treatment. Some improvement certainly resulted, but it was not very striking. At the end of the agreed period I again urged surgical interference. This time the patient consented; a very thorough operation was performed, and, perhaps for the first time in her life, she was able to breathe fully through her nose. After about a week's time—that is to say, as soon as the irritation due to the surgical trauma had subsided—the voice began to improve, and continued to do so for some weeks. Two months after the operation the patient could speak vocally, but in rough, unpleasant tones. Tested by the piano for musical notes, she was unable to produce anything higher than an indifferent "middle C." I waited another six weeks, to see if any further spontaneous improvement would occur. As it did not, I decided to recommence faradic stimulation, with a view to improving the pitch and timbre of the voice. The results were most gratifying. In a short time the patient was able to manage "F," and later "A," but beyond this point no progress seemed possible. The patient's speaking voice is now of good volume and no more than slightly rasping. She has been able to obtain another post as teacher.

Remarks.—A study of the above cases, and of others of a similar nature which have come under my notice, has led me to form certain conclusions regarding the pathology and treatment of persistent post-catarrhal aphonia. Text-book accounts of chronic laryngitis and its accompanying disturbances of voice appear to me to err in regarding the disease as if it were on all fours with, say, a tracheitis. In other words, attention is concentrated on the mucous membrane to the neglect of other equally important structures. The larynx is primarily a mechanical device for the production of vocal sounds, and depends for its proper functioning even more upon the integrity of its muscles and nerves than upon the healthiness of their covering. In chronic catarrh of this organ the muscles become secondarily affected, and the delicate terminals of the motor nerves in all probability undergo an inflammatory degeneration. An acutely inflamed mucosa doubtless demands local sedative applications; and even when the trouble has become chronic, astringent sprays, paintings, &c., can often play an important part. But the tendency in many chronic cases is for the mucous engorgement to disappear to a great extent, whereas the damage to the neuro-muscular apparatus remains. Under such circumstances it is unreasonable to expect a cure by the ordinary means. On the other hand, improvement may be looked for from such measures of "natural therapy" as produce benefit in similar pathological conditions elsewhere—e.g., in that form of facial palsy which is the result of exposure to cold.

In treating paresis of laryngeal muscles by faradisation we are at a disadvantage as compared with the same conditions occurring in an arm or leg. We cannot single out the affected muscle or muscles for individual stimulation. This difficulty is not, however, insurmountable. The secret of success lies in the regular and persistent use of *mild currents*, which are not calculated to produce violent contractions of opposing healthy muscles. If carefully applied for a prolonged period this form of electricity exercises a selective action on the affected structures and eventually restores their tone.

Remarkable as are the results of faradism in suitable cases, we must not fall into the error of regarding it as a panacea for each and every form of catarrhal aphonia. Where the laryngoscope shows marked swelling and congestion of the cords the mucous membrane must be attacked vigorously on orthodox lines, and here again we are likely to meet with little success if the naso-pharynx is in an unhealthy condition. Nevertheless, even where the mucosa is the part most at fault, the judicious use of the interrupted current forms a valuable adjunct to routine treatment.

In conclusion, it is perhaps desirable to urge the necessity, in any given case, of making sure that the aphonia has really resulted from such simple causes as catarrh, overstrain, or a combination of both. Thoracic aneurysm, lesions of the central nervous system, malignant growths, the ulceration of syphilis or of tubercle—these must always be borne in mind as sinister possibilities, and to waste time in faradising a patient who subsequently dies from cancer or is cured by iodide of potassium is to run the risk of being dubbed—not undeservedly—a quack.

Bishop Auckland, Durham.

NOTES ON A CASE OF PHLEGMASIA ALBA DOLENS, FOLLOWED BY PULMONARY EMBOLISM AND INFARCTION OF THE LUNG; RECOVERY.

BY J. C. CURTIS, L.R.C.P. & S. EDIN.

THE patient, a married woman aged 28 years, a primipara, gave birth to an eight months' female child on May 16th. She resided in the country and was attended by a village nurse. She went on satisfactorily until May 21st when she developed phlegmasia alba dolens in the left leg. The whole limb was considerably swollen, the swelling extending as high as Poupart's ligament. No thrombosed vein could be detected in the thigh or leg. It was therefore apparent that the circulatory block was in the pelvis. The swollen limb measured 1 inch more than the sound one, and was accompanied by the usual pain. The temperature was 101° F., pulse 90, and respirations 30. The limb was treated by lightly applying cotton-wool, and the foot of the bed was slightly elevated on wooden blocks. The lochia were somewhat offensive, and so hot permanganate douches were given night and morning. The bowels were regulated by enemata. The patient progressed favourably. On the 26th the leg was much less painful and her temperature normal, but there was no appreciable diminution in the swelling. On the night of the 28th she was seized with violent pains in the left chest and shortness of breath. As her husband expressed it, "she had awful pains in her chest, and I expected her to die every minute."

When seen on the morning of the 29th the patient was in a very distressed condition. The respirations were 72; pulse 108, regular, but very feeble; and temperature 100°. The extremities were cold. She complained of intense pain over the epigastrium, precordia, and lower axilla. She was too ill for any detailed examination, but an impaired note was found over the lower part of the axilla, and the breath sounds over this area were badly transmitted; no friction sound was heard. A soft systolic murmur could be heard over the pulmonary area and the second sound was accentuated. She suffered from retching and some vomiting, and the giving of the smallest amounts of liquid nourishment caused great pain over the precordia and lower axilla. As her stomach was dilated this was attributed to pressure on the diaphragm interfering with cardiac and respiratory movements. Hot water bottles were applied to the feet and hot applications to the chest. She was given iced milk and soda-water with brandy in small quantities at frequent intervals. She was also given the following mixture every four hours: bismuth carbonate, 10 grains; aromatic spirit of ammonia, 15 minims; compound tincture of cardamoms, 10 minims; mucilage, q.s., and water to 1 ounce. On the following day (30th) the vomiting had ceased. The respirations were 66, pulse 102, and temperature 101°. She still had considerable pain over the lower axilla, and a marked friction sound could be heard over this area, and it

was noticed that the swelling in the left leg had considerably diminished; it was much softer and free from pain. The pulmonary systolic murmur could still be heard, although not so marked.

On June 3rd there was a considerably impaired note over the lower half of the upper lobe, and the whole of the lower lobe and axilla, with marked tubular breathing, bronchophony, and pectoriloquy. The pleuritic rub was still very much in evidence. The temperature was 99°, respiratory rate 60, and pulse 96, regular, and of medium tension. The pulmonary sounds were now clear. The patient was very cheerful. She had a slight dry cough, but no sanguineous expectoration. She complained of a slight pain in the axilla when she took a deep breath. She was taking an abudance of fluid nourishment. On the 9th the respiratory rate had dropped to 30. There was good air entry at the base, but dulness persisted over the axilla, the lower half of the upper lobe, and the upper half of the lower lobe; and over these areas there were still tubular breathing, bronchophony, and pectoriloquy. There was still an occasional dry cough but no expectoration. The temperature was normal. The left leg had resumed its normal size. The lung symptoms gradually cleared up, and on the 18th the pulse was 72, regular, and strong. The respiratory rate was 24, and there was good air entry over the whole lung. She still had a little pain over the lower axilla when taking a deep breath. She was up and about on the 19th, and on August 5th was quite well.

The chief points in the case were: (1) the large area of lung involved; (2) the almost simultaneous disappearance of the œdema in the leg, coincident with the lung lesion; (3) the small amount of pyrexia, pointing to an aseptic condition of the lung lesion; (4) the high respiratory rate, due to the large amount of lung tissue thrown out of action; and (5) total absence of any sanguineous expectoration, and practically no cough. I should add that the urine was examined and nothing abnormal was found. The case occurred in the practice of Dr. W. W. Anderson of Tring, and I am indebted to him for permission to publish it.

Mumbles, near Swansea.

THE INFLUENCE OF QUININE AND MORPHIA UPON PHAGOCYTOSIS.

BY H. LYON SMITH, M.D. DURH.,
FORMERLY REID SCHOLAR AND FOULIS RESEARCH SCHOLAR.

IT may be accepted that experiments *in vitro* fail to reproduce the complicated processes which occur in the living subject, and that deductions drawn from them are unsound unless other evidence can be adduced in support. In spite of this discouraging premise, I have ventured to make a series of researches to ascertain, if possible, the truth of the oft-repeated statement that quinine, like alcohol in excess, inhibits phagocytosis, and is therefore contra-indicated in all septic conditions.

The opsonic index was taken as a basis for the work, with the additional factor of a solution of quinine and morphia. By way of control, to avoid the possibility of error in the index being affected by chemotaxis, in each group one index was taken with a volume of salt solution in place of the quinine and morphia, but it did not appear that the mere mechanical effect of diluting the ordinary constituents of an opsonic content influenced the result of the count. The very soluble acid hydrochloride of quinine was selected because it is much less irritating than the sulphate and contains 8 per cent. more quinine. Morphia hydrochloride, 1/8 grain, was added to each 10 grains of the quinine salt, because in practice I have found the combination more efficacious than either alkaloid used alone.

It was roughly calculated that a 10-grain dose given to a 10-stone person, if entirely absorbed, would represent in the blood a proportion of 1 in 7500, on Waller's estimate that the ratio between the weight of the blood and the weight of an individual is about 1 to 15. The influence of this solution (1/7500, equivalent to a 10 grain dose) upon the phagocytosis of different kinds of pathogenic organisms (e.g., streptococci, staphylococci, pneumococci, B. coli, B. influenzæ, B. pseudodiphtheriæ, and B. tuberculosis) was contrasted with stronger and weaker solutions to ascertain the effect of varying doses.

The details of a typical experiment were as follows:—

A. One volume each of (1) washed human blood corpuscles; (2) human serum; (3) fresh emulsion of living B. coli; and (4) 1 7500 solution of quinine and morphia. These were thoroughly mixed in a Wright's pipette, sealed, and incubated in an opsoniser at 37° C. for 15 minutes. Films were then made, stained, and counted.

In B of the same group No. 4 contained 1/30,000 solution of quinine and morphia, equivalent to a 2½-grain dose.

In C No. 4 was replaced by a volume of sodium chloride solution, 0·85 per cent.

In D No. 4 was omitted, as in an ordinary test for an opsonic index.

To avoid the risk of bias, or as Sir Almroth Wright put it, "to be careful lest one should find what one wished to find," the different slides were "shuffled" by an independent person and thus counted without knowledge of which was which. Dr. W. E. de Korté was kind enough to help me in this matter and to corroborate the results in some cases by making independent counts.

In this B. coli experiment the phagocytic counts were A = 428, B = 321, C = 164, and D = 261, 100 polynuclear leucocytes being counted in each case. The addition of quinine and morphia had increased the phagocytosis in this case by 64 per cent. for the 10-grain dose and 23 per cent. for the 2½-grain dose.

I was only able to complete 11 sets of experiments, and in the majority of them there was an increased phagocytosis, always most marked with the 10-grain dose solution.

Summary of Results showing Increase of Phagocytosis.

	Per cent.		Per cent.
1. Streptococci	30	8. A pseudo-diphtheria bacillus	20
2. B. coli	64	9. B. coli (a second strain)	30
4. Pneumococci...	80	10. Pneumococci (a second strain)	30
6. Streptococci (another strain)...	90	11. B. coli (a third strain)...	250
7. B. influenzæ	20		

It appears that, instead of inhibiting phagocytosis with the above micro-organisms, the addition of quinine and morphia, in what may be considered the "ideal" dose, greatly increased it. Smaller doses in all the groups were less effective, and one important fact was clearly demonstrated—namely, that very large doses, 30 and 40 grains, instead of increasing, actually diminished phagocytosis, sometimes to the extent of over 50 per cent. This latter observation makes me think that the statement that quinine is contra-indicated in bacterial invasions is based upon experiments in which too strong solutions have been used, doses which would undoubtedly have a most depressing or even poisonous effect upon patients.

It will be noted that groups Nos. 3 and 5 have been left out of the list of experiments which showed increases. In No. 3 tubercle bacilli were used and the result was a diminished phagocytosis. In No. 5 staphylococci formed the bacterial emulsion and a 10-grain dose solution diminished the count by 50 per cent., whereas a one-grain dose solution gave a very slight increase. It takes a quinine solution of 1/400 to inhibit the growth of certain bacteria (staphylococci), and we may safely assume that any bactericidal effect is quite out of court in the therapeutical doses.

I would submit that the stimulus to phagocytosis in the foregoing test-tube cases was due to the quinine and morphia acting as an opsonin to certain microbes. If the result had been simply due to stimulation of the leucocytes, groups Nos. 3 and 5 would not have differed in such marked fashion from the others.

In the initial stages of a bacterial invasion, and particularly in cases of appendicitis, acute colitis, puerperal septicæmia, cellulitis, erysipelas, and influenza, the prompt administration of quinine in the ideal dose (which seems to be about 1 grain to each stone of the patient's weight) appears likely to strengthen the natural first line of defence. It is at this period, when the invaders are comparatively few in numbers, that a remedy which will quickly increase phagocytic power is of the greatest service and may possibly abort the attack. Even if it fails to achieve complete success it postpones the immediate danger and affords time to bring into play more exact methods of serum or vaccine treatment.

Mansfield-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTES ON A CASE OF OPTIC ATROPHY FOLLOWING SUPRAORBITAL INJURY.

BY A. GASCOIGNE WILDEY, M.R.C.S. ENG.,
FLEET SURGEON, ROYAL NAVY.

AN A.B., aged 26 years, while cycling on August 1st, 1909, was thrown by the skidding of his machine and fell upon his head. He was slightly concussed, and received a small contused wound over the right orbit. Upon recovering consciousness he complained of headache and of complete loss of vision of the right eye. The accident occurred at 4 P.M. He was seen by a medical officer of the Royal Naval Barracks, Devonport, at 10 P.M. The wound was found to be superficial. There was some slight œdema of the upper lid. No injury to the eye could be detected. There were no obvious signs of fracture of the skull. Amaurosis of the right eye was complete, perception of light being absent. Both pupils reacted to light. There was no proptosis nor increased tension of the globe. On the following morning an examination by ophthalmoscope was made, but nothing abnormal found. The right pupil did not react in attempts to accommodate. Examination of the area of distribution of the supraorbital nerve showed no loss of sensation. On August 9th there was some return of perception of light, and on the 12th the patient stated that he could distinguish the outline of a person in a good light at about 15 feet. He could dimly make out the largest letters of Snellen's types at 1 metre.

Atrophic changes in the right disc were observed on August 14th, the temporal side of the disc being distinctly pale. Perception of light was absent on the nasal side of the fundus. A perimeter chart made on the 20th showed that such vision as existed was limited to a very small central area confined to the nasal side in the 40° circle. Within this area there was a central scotoma. Colour vision was limited to an exceedingly small central spot on the nasal side within the 20° circle. Subsequent examinations proved that a rapid increase of atrophic changes was taking place. The right disc was generally paler and distinctly white on the temporal side. On Sept. 17th the area of perception of light was limited to a small irregular patch in the lower and nasal portion of the 20° circle.

In this case it is probable there was a fracture of the sphenoid through the optic foramen with lesion of the optic nerve. Here, somewhat fortunately, loss of vision was noticed immediately the patient recovered consciousness; it might easily have passed unnoticed for a considerable time, since the dressings of the supraorbital wound covered the eye, and there was some œdema of the lid. Hence these cases, formerly called "supraorbital" amauroses in the belief that the loss of vision was in sympathy with a lesion of the supraorbital nerve, are of considerable interest medico-legally, and the possibility of a fracture through the optic foramen with subsequent atrophic changes in the optic nerve should be considered in all cases of supraorbital injury.

A PRACTICAL APPLICATION OF THE SYMPTOM-COMPLEX IN RUPTURED ABDOMINAL HYDATID CYST.

BY A. H. TEBBUTT, M.B. SYDNEY,
AND
D. A. WELSH, M.A., M.D. EDIN.

A SYMPTOM-COMPLEX in ruptured abdominal hydatid cyst was recently described by Barling and Welsh[1] as consisting of eosinophil leucocytosis, peritonitis with effusion, and urticaria, the last, however, not always being observed. This association of phenomena had an interesting application in the diagnosis of a recent case.

A woman, 42 years old, had suffered since girlhood from recurring "bilious attacks." Two weeks before admission she had one of these attacks, and after vomiting noticed that her abdomen was swollen. The swelling had persisted ever since its somewhat sudden onset. No itching or rash was noticed by the patient.

On admission on August 3rd, 1910, she was wasted, sick, and listless, with slight intermittent pyrexia, and a rapid, soft pulse. The abdomen was greatly distended with fluid and the superficial veins were dilated. Fluid was withdrawn from the abdomen on August 6th for diagnostic purposes. It appeared straw-coloured and deposited a brownish granular sediment after some hours. In the sediment the endothelial cells were scanty. A few cells of doubtful identity were found, but no hooklets nor scolices. The great majority of the cells were leucocytes, and there was a remarkable accumulation of eosinophil forms. The differential count (240 counted) showed: eosinophils, 81·6 per cent.; lymphocytes, 13·0 per cent.; neutrophils, 5·0 per cent.; and basophils, 0·4 per cent. A blood examination on the 8th revealed a high degree of eosinophilia. The leucocytes altogether numbered 25,000 per c.mm., and on counting 300 cells the leucocytes were found to be made up as follows: eosinophils, 29·0 per cent.; neutrophils, 54·0 per cent.; lymphocytes, &c., 16·6 per cent.; and basophils, 0·4 per cent. There was, therefore, a well-marked eosinophil leucocytosis, together with a slight neutrophil leucocytosis. The precipitin test was negative, but the hydatid fluid employed had never given a satisfactory reaction, and in these circumstances the absence of the reaction could not be regarded as significant.

Operation showed abundance of free fluid and lymph, together with several daughter-cysts, in the peritoneal sac. On the under surface of the liver there was found a large hydatid cyst which had ruptured far back, and enormous numbers of daughter-cysts and fluid were contained within it.

The interest of the case lies in the association of a ruptured hydatid cyst of the liver with the appearance of free fluid in the peritoneal sac and with a high proportion of eosinophil cells in the blood and in the peritoneal fluid. Though no urticarial eruption was noticed by the patient these phenomena otherwise correspond with the symptom-complex, and illustrate the diagnostic importance of this association, as the symptoms otherwise pointed to malignant disease.

We are indebted to Dr. Mills and Dr. Abbott for their kind permission to make use of the clinical notes of the case.

Sydney.

[1] Australasian Medical Gazette, July 20th, 1910, p. 349; and THE LANCET, Oct. 1st, 1910, p. 1001.

NOTES ON TWO CASES OF ECZEMA EXUDANS TREATED SUCCESSFULLY WITH HIGH-FREQUENCY CURRENTS AND KEROL.

BY G. M. LOWE, M.D. EDIN., F.R.C.P. EDIN.

IN common with many others I have found mild currents (70 milliampères) of great service in the treatment of chronic diseases of the skin, especially those where the constitutional condition of the patient indicates an irritable state of the trophic nerves, a condition so frequently met with in middle-aged women.

In the following cases, although great benefit followed the above application, their cure was not complete until I used a preparation sold under the name of lana kerol, which is described by the makers (Quibell Bros., Limited) as an oxidised di-phenyl compound, which is comparatively insoluble, and for this reason very much less toxic than phenol; the active di-phenyl compound is made miscible with water by means of a special soap, and this causes it to form a perfect emulsion with water. Its bactericidal qualities are highly vouched for by such observers as Dr. D. Sommerville and Mr. W. C. C. Pakes, and Professor R. T. Hewlett.

CASE 1.—The patient was a lady, aged 50 years, who had been suffering from eczema exudans for 20 years; the disease came on soon after the birth of her only son. She is a tall, spare, active woman, worn down with the constant irritation of the eruption which covered the face and almost every part of the body. She had, of course, used every remedy that had been suggested to her, and was unwilling to try anything further. I found high-frequency currents and the effleuve very efficacious in relieving the irritation of the skin and in improving the general health. She was very careful to follow out the prescribed diet, and for a time a cure seemed

probable; but as from time to time there was a return of the eruption in the axillæ and groin, I prescribed lana kerol 1 in 300 parts as a lotion, the diseased skin to be thoroughly washed with it every night and morning, the flexures to be dressed with unguentum rusci co., and the erythematous surfaces to be dusted with boric acid powder. The result was a complete cure, and there has been no return in 12 months.

CASE 2.—The patient was a lady, aged 60 years, very thin, but strong and energetic, who had been subject to eczema for over ten years. The skin is thin, dry, and irritable; the eruption affects chiefly the neck and scalp, as well as the axillæ, back, and flexures of the thighs. Change of air, high-frequency currents, and calamine applications effected a temporary cure last year, but the complaint returned in March, 1910. Her home is in an exposed locality on a clay soil. As she could not come to me for treatment I sent a capable nurse with instructions to cleanse every part of the skin night and morning with the kerol solution (1 in 300) and then apply the unguentum rusci co. and boric acid powder as required. In three weeks my nurse returned reporting an absolute cure.

Ryde.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION.

Presidential Address.

THE first meeting of the session of this section was held on Oct. 18th, when the President, Professor A. R. CUSHNY, delivered his presidential address, entitled "A Plea for the Study of Therapeutics." He traced the changes of clinical sentiment, from the optimistic faith in the few available remedies current in the early nineteenth century, to the sceptical attitude towards drugs of the modern physician. In the mid-nineteenth century, when, under the influence of pathological anatomy, medicine had become pessimistic and treatment almost wholly expectant, the new school of pharmacology perforce abandoned the hospital wards for the laboratory. The time had come for applying to the practice of the wards the principles learned in the laboratory, and for insisting on accurate quantitative records, hitherto so conspicuously lacking in clinical literature. Professor R. Stockman's work on salicylates was a model of such accurate clinical investigation. Ergot might be cited as a drug for the clinical investigation of which laboratory work had now furnished the data. The President described, and illustrated by charts and records, his joint investigation, with Dr. James Mackenzie, of the action of drugs affecting the circulation, and chiefly of the cardiac tonics. The future course of this investigation was indicated and the increasing necessity for work of this type emphasised. The President outlined the changes in organisation necessary to bring into their proper relation research and instruction in pharmacology and in therapeutics. The hour being late the meeting adjourned without discussion of the address.

MEDICAL SECTION.

Multiple Cartilaginous Exostoses.

A MEETING of this section was held on Oct. 25th, Dr. J. MITCHELL BRUCE, the President, being in the chair.

Dr. A. M. GOSSAGE and Mr. E. ROCK CARLING communicated a paper on Multiple Cartilaginous Exostoses. According to the authors the occurrence of this condition was rare, but was probably more frequent than was usually supposed, since the condition often gave rise to no discomfort. The tumours arose from the intermediate cartilage and were generally first noticed during the first two years of life, but might be present at birth. They were very variable in size and number and usually required no treatment, but might cause discomfort by pressure on adjacent structures, when they should be removed. They had been supposed to be a consequence of rheumatism, syphilis, or rickets, but there was no real evidence in favour of any of those views. There was evidently some inherent abnormality of the intermediate cartilage which caused it to develop in an unusual manner, and that abnormality was very frequently hereditary. Evidence was adduced to show that the abnormality of the intermediate cartilage resulted not only in the production of bony tumours but also in alterations in the size and length of the bones. The inheritance seemed to obey Mendel's law, an affected person transmitting the abnormality to about half his children by a normal mate, there being no evidence of increased or diminished intensity during successive generations. Males were, however, affected about twice as often as females, but normal women in affected families not infrequently transmitted the abnormality to some of their children, while it was probable that normal males never did so. There were a considerable number of sporadic cases in which no history of any similar complaint amongst the relatives could be obtained, but it was possible that some of those did not arise *de novo* but were really hereditary, the transmission having taken place through one or more normal females. The records of 51 families were dealt with, of which 30 were reported fairly fully. In those 30 families, taking only the later generations of the offspring of affected individuals, 121 were abnormal and 130 normal. Cases from two previously unrecorded families were included and described.

Professor BATESON (Cambridge) said that the cases approached the Mendelian characteristics, but he did not think in the strict sense of the term that they should be included under Mendel's law.

After Dr. S. R. WELLS had spoken, Mr. CARLING and Dr. GOSSAGE replied.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Exhibition of Cases.

A MEETING of this section was held on Oct. 28th, Dr. E. CAUTLEY, the President, being in the chair.

Mr. W. HAMPSON exhibited (for Dr. ERIC PRITCHARD) a case of Achondroplasia in a girl aged 5 years. The skiagrams showed defective ossification of the epiphyses of the long bones with overgrowth of the cartilages. The patellæ were either absent or rudimentary.

Dr. T. R. WHIPHAM showed a Heart presenting atresia of the pulmonary artery, patent foramen ovale, and deficient interventricular septum. The right side was hypertrophied and the left carotid artery arose from the innominate artery. The patient, aged 1 year and 9 months, was shown on May 27th and presented marked cyanosis and clubbing of the digits. There was a polycythæmia of 12,740,000 red corpuscles per cubic millimetre and a hæmoglobin value of 200 per cent. The only murmur heard was a faint systolic bruit over the pulmonary area.

Dr. D. WOOD showed an infant, aged 5 weeks, with a Cleft in the Hard and Soft Palate, the cleft being occupied by new growths which were of an uncertain nature.

Dr. F. LANGMEAD showed a case of Scleroderma Neonatorum with Myositis Fibrosa in an infant aged 8 months. The face, trunk, and limbs were all affected, and the temperature showed a daily rise to from 99° to 100° F.

Mr. J. P. LOCKHART MUMMERY exhibited a girl, aged 5½ years, with a Tumour on the Posterior Aspect of the Left Rectus Abdominis Muscle, which had almost disappeared under iodide of potassium. There were no other signs or history of congenital syphilis.

Mr. DOUGLAS DREW showed a boy, aged 10 years, with Injury to the Right Brachial Plexus as the result of being crushed by a van-wheel. The arm presented a paralysis of the Duchenne-Erb type, with weakness of the extensors of the wrist and slight anæsthesia over the shoulder. The paralysed muscles showed reaction of degeneration and had not regained power.

Mr. Drew also exhibited a boy, aged 5 years, in whom a fall had caused a Separation of the Lower Epiphysis of the Humerus, with displacement inwards.

Dr. J. D. ROLLESTON showed charts and photographs of a case of Gangrene of the Leg following Diphtheria in a boy aged 13 years. No antitoxin had been given, and when seen on the seventeenth day the right leg below the knee was cold and anæsthetic. Dilatation of the heart and a temporary discolouration in both legs ensued. On the thirtieth day there was commencing gangrene of the left leg and obliteration of the pulse in the popliteal artery. Amputation through

the knee-joint was subsequently performed and recovery was uneventful.

Dr. ROLLESTON also showed charts and photographs of Concurrent Scarlet Fever and Chicken-pox. The patient, a boy, aged 8 years, had been exposed to chicken-pox three weeks previously, and was admitted with a typical scarlet fever throat and rash. On the following day the varicella eruption appeared. Subsequently there was a profuse desquamation which confirmed the diagnosis of scarlet fever. The child made a good recovery.

Dr. G. A. SUTHERLAND exhibited a female, aged 3½ years, the subject of Recurrent Tetany. The attacks began seven months previously after prolonged indigestion and abdominal distension. The tetany was typical, facial irritability being marked at times and laryngeal stridor occasionally present. There were no signs of active rickets.

Dr. J. B. MOLONY and Dr. H. D. ROLLESTON showed a case of Idiopathic Hypertrophic Dilatation of the Colon, with skiagrams. The patient, a male, aged 3 years, was weaned at the sixteenth month, and then had bouts of constipation with progressive abdominal distension. The bowels were very obstinate, and in spite of a ravenous appetite the child became emaciated. Bilious vomiting occurred from time to time, and peristalsis along the course of the colon was observed, but was unaccompanied by pain. Skiagrams taken after a bismuth meal showed an enormously distended bowel in the region of the ascending colon and a normal transverse portion, while a tube containing a soft wire passed into the anus indicated a distended rectum extending up to the diaphragm.

Mr. C. T. DENT exhibited a child, aged 4 months, with "Congenital Elephantiasis" of the Right Arm, a condition allied to cystic hygroma. There was also a superficial nævus or condition of cavernous angioma. The bones appeared normal in a skiagram but were probably longer than in the corresponding limb.

Dr. LEONARD GUTHRIE exhibited a case of Congenital Insufficiency of the Soft Palate in a girl aged 9 years. Regurgitation of fluids through the nose occurred during the first five years of life but not afterwards. The speech was marked by rhinolalia. The soft palate was normal in appearance but motionless on phonation and on stimulation. The condition was thought to be one of muscular insufficiency rather than of submucous cleft palate.

Mr. P. G. LEE sent the report of a case of Deficiency in the Interventricular Septum and Patent Ductus Arteriosus in a child aged 7 years.

The cases were discussed by the PRESIDENT, Dr. PORTER PARKINSON, Mr. DREW, Dr. LANGMEAD, Dr. PARKES WEBER, Mr. MUMMERY, and Dr. WHIPHAM.

MEDICO-LEGAL SOCIETY.

Presidential Address.

AT a meeting of this society held on Oct. 25th,

Sir JOHN TWEEDY, the President, delivered an address upon the Influence of Social and Legal Restrictions on the Practice of Medicine. The history of medicine, he said, including surgery, furnished many instances of the deterrent effects which various regulations and restrictions, risks and penalties, had had upon the practice of medicine. In some cases the restrictions and penalties had been imposed by external authority, in others they had been imposed by real or by quasi-medical authority, and in others they had had their origin in the peculiar civil and social conditions of the time. Besides these there had been esoteric influences at work, due to the difficulties and dangers inherent to practice at a time when knowledge was imperfect and the methods of diagnosis and treatment defective and uncertain. Egyptian medicine and its practitioners had been famous in very early times. In the fourth book of Homer's Odyssey we were told, "In Egypt each man is a physician skilled beyond all mankind." Herodotus, writing in the fifth century B.C., stated that medicine was practised in Egypt on a plan of separation, each physician treating a single disorder and no more. And so the country swarmed with medical practitioners, some undertaking to cure diseases of the eye, others of the head, others again of the teeth, others of the intestines, and some diseases which are not local. This elaborate specialisation might in one sense be regarded as evidence of a high degree of proficiency, but it was also evidence of a somewhat restricted training, inasmuch as the practice of most of the specialties was hereditary and each person studied only one specialty. Medical knowledge and skill had attained their high level under the fostering care of an hereditary priesthood, but after a certain stage of development was reached the sacerdotal influence proved hostile to all experiment and progress. Egyptian physicians were obliged to treat their patients according to the rules laid down in those parts of the sacred books of Hermes which dealt with the body and its diseases. The death of a patient was a capital crime if it was found that he had been treated in another way. It was true that deviations from, and approved additions to, the sacred prescriptions were occasionally made, and Aristotle observed that even in Egypt a physician was allowed after the fourth day to alter the treatment prescribed by authority, while if he did this before he did it at his peril. In striking contrast to the rigid regulation of Egypt it might be noted that in ancient Greece there seemed to have been no liability for malpraxis, while in regard to ancient Rome, Pliny complained that there was no law to punish the ignorance of physicians, a physician being the only person who could kill a man with impunity. From the recently discovered code of laws promulgated by Hammurabi about 2300 B.C. it had been learnt that liability for malpraxis was severe in ancient Babylon. If a medical man treated a person of position for a severe wound with a lancet of bronze and caused the patient to die, or opened an abscess of the eye with a bronze lancet and caused the loss of the eye, the surgeon's hands were to be cut off. With such a penalty in prospect it was surprising that there had been anyone willing to undertake the treatment of any surgical case whatever. The retaliatory mode of settling a surgeon's bill in the time of Hammurabi was, however, scarcely less drastic than that which obtained in Europe 3000 years later. In the plague which visited Europe towards the end of the sixth century one of the victims was Austregild, Duchess of Burgundy. Prior to her death she accused the physicians of administering potions intended to kill her, and she entreated the King to avenge the crime. After the obsequies had been performed the King discharged the oath which he had freely given, and satisfied the posthumous desire of the princess by slaying her surgeons according to the old Teutonic law. The laws of the Visigoths, for example, laid down that if a physician blundered in blood-letting when the patient was of noble birth so as to debilitate him he should pay a fine of heavy damages. If the patient died the surgeon was delivered over to the nearest relatives of the deceased, who thereafter became the absolute arbiters of his life and death. In the early part of the fourteenth century Pope John XXII. having accused his physician-barber of seeking to bring about his death by sorcery and poison had him flayed alive. The same Pope burnt at Florence another of his physicians as a sorcerer, upon the denunciation of a professional colleague, and yet the Pope himself was a believer in astrology, sorcery, and witchcraft. About the same time John, the blind King of Bohemia, who was killed at the battle of Crecy wildly but heroically fighting at the head of his knights, caused the French surgeon who had failed to cure his eye to be sewn up in a sack and thrown into the river Oder. The legal, social, and civil penalties to which surgeons in the Middle Ages were exposed accounted for much of the timidity and reserve of mediæval surgery. Other causes peculiar to the state of surgery at that time were the ignorance of anatomy, the dread of hæmorrhage and the imperfect means of arresting it, and not least, perhaps, the contempt with which surgery was regarded by the clerical physicians of that time. "O God," exclaimed the famous Italian surgeon, Lanfranc, towards the end of the thirteenth century, "why is it that there is now so much difference between a physician and a surgeon, except that physicians have abandoned manual operations to laymen? *They* say it is because they disdain to work with their hands, but *I* believe it is because they do not know how to perform operations." Leopold Duke of Austria, the captor of Richard Coeur de Lion, had had his leg fractured by the kick of a horse. The limb mortified and amputation was necessary, but no surgeon could be found willing to undertake the operation. At length, unable to bear his pain, the operation was performed by the Duke himself holding an axe to the limb while his

chamberlain struck the axe three blows with a mallet. But the Duke's sufferings continued and the inflammation spread to the body. The bishops seeing him in such a state of misery and suffering admitted him to the communion of the faithful, "after which," said Roger of Wendover, "he expired in dreadful agony."

The scarcity of surgeons and their reluctance to undertake the treatment of serious cases in distinguished persons was exemplified in the case of Mathias Corvin, King of Hungary, who having been wounded in the arm in a battle with the Turks in 1468 caused it to be known throughout Europe that he would liberally reward anyone who would cure him. Many months passed before a surgeon offered his services. At length Hans of Dockenberg, a surgeon living at Strasburg, went to Bohemia, cured the king, and returned to his home rich in rewards and reputation. The dread of undertaking the treatment of serious cases was almost an obsession with mediæval surgeons. Guy of Chauliac, who flourished in the fourteenth century, and was the greatest European surgeon from the time of Hippocrates to his own day, warned surgeons against undertaking what he designated "bad cures"—*malas curas*. In Guy's case the warning was mainly based upon considerations of the personal risks to which the surgeon exposed himself. It was noteworthy, however, that the writer of the Hippocratic treatise "De Arte" also advised physicians not to undertake desperate cases, but it was not the dread of personal consequence that influenced him. It was the observance of an enlightened and logical principle. "Medicine," he said, "is the delivering of sick persons from their sufferings, and the diminishing the violence of diseases, and not the undertaking of treatment of those who are overcome by sickness, because the medical art here is of no avail." He argued that medicine was an art, and when a person was afflicted with a malady beyond the power of the therapeutical resources of medicine one could not expect art to triumph. The consideration of the difference in attitude between the Hippocratist and the surgeons of the Middle Ages suggested the inference that wherever and whenever the medical profession and medical practice had been most highly organised, the penalties for failure and ill-success had been most humane; and wherever they had been less organised the penalties had been harsh, vindictive, and often inhuman. In the more highly organised state of medicine practitioners had been better educated and more skilful, bolder and yet more cautious and circumspect, and therefore more trusted. When the organisation had been imperfect the number of educated physicians and surgeons had been fewer, while quacks and charlatans had been most numerous and most unconscionable. Brunus, writing in the middle of the thirteenth century, stated that the majority of those who practised surgery in his time were uneducated, rustic, and stupid. Many of the surgical practitioners from the fourteenth to the sixteenth century belonged to a special class called Operators. These practitioners performed operations which were either forbidden to the clerical physicians or were abandoned by the Masters of Surgery, such as hernia and cataract; in fact, all the operations the consequences of which might be grave or fatal. Not a few of the operators belonged to the category which Guy of Chauliac, for good reasons, designated "coureurs." They had no fixed abode, but led a wandering life, travelling from town to town, and from country to country, in search of patients and of cases requiring operation. Pierre Franco, who lived in the middle of the sixteenth century, was a distinguished and skilled member of this class of operators. He complained more than once of the contempt which the physicians of the day had for the work of surgery and for the operator. And he observed, not without a touch of acerbity, that if a patient died in the hands of the physician, the physician was always excused in some degree, and so also with a surgeon who did not practise operations; "but when what *we* undertake does not always succeed as happily as we could wish, we are called *murderers* and *executioners*, and have often to take to our heels."

Upon one other aspect of the subject Sir John Tweedy touched in a few words in conclusion. In ancient Greece and in ancient Rome slaves were employed to do menial tasks and much of the industrial work. There were, however, some slaves of a higher order who were skilled in branches of learning or of art, and who acted as secretaries (like Cicero's beloved Tiro) or copyists, librarians, pædagogi or tutors of children. Some had considerable knowledge of medicine and surgery. While these gifts generally ensured good and even kindly treatment, they often lessened the chances of gaining complete freedom. The slave was often manumitted, but he still remained in a position of subordination to his master, and could seldom return to his native land if he so desired. Sir John Tweedy trusted that his remarks had been sufficient to establish his thesis—viz., that the restrictions and restraints placed upon the practice of medicine in former times, and the penalties incurred under liabilities for malpraxis, had done much to hamper the practice of surgery and to check the progress of medicine. A glance at the existing law relating to the medical profession sufficed to show how far they had travelled on the path of reason and humanity. In this respect at least it might be said that they had passed from contract to status. No medical man now made a contract guaranteeing a cure. Chief Justice Tindal laid it down that "everyone who enters a learned profession undertakes to bring to the exercise of it a reasonable degree of care and skill. He does not undertake if he is an attorney that at all events you shall win your case; nor does a surgeon undertake that he will perform a cure, nor does he undertake to use the highest possible degree of skill, but he undertakes to bring a fair, reasonable, and competent degree of skill." So also with respect to penalties. Chief Baron Pollock in the case of R *v* Crick remarked: "It would be most fatal to the whole efficiency of the medical profession if no one could administer medicine without a halter round his neck." Similarly Mr. Justice Park: "It would be a dreadful thing if a man were to be called in question criminally whenever he happened to miscarry in his practice."

LIVERPOOL MEDICAL INSTITUTION.

Exhibition of Cases, &c.—Development of Multiple Growths.—Pyloric Stenosis in Infancy.

A MEETING of this society was held on Oct. 27th, Dr. T. R. BRADSHAW, the President, being in the chair.

Mr. C. G LEE showed a case of Enlargement of the Pituitary Body. The patient was a man, aged 32 years, who had been married for five years but without children. Four years ago he suffered from diabetes insipidus. His recovery was followed by general weakness and marked increase of adipose tissue, his weight increasing from 11 stones 7 pounds to 13 stones 10 pounds. Two and a half years ago the vision began to fail. On examination there was marked adiposity; no signs of acromegaly; the viscera and blood pressure were normal. There was marked optic atrophy and the fields of vision were obliterated save for small symmetrical areas on the nasal sides to 20°. There was loss of sexual power. —Dr. C. THURSTAN HOLLAND showed on the illuminated screen excellent X ray photographs demonstrating the enlargement of the sella turcica.—Mr. LEE considered that the symptoms of the patient indicated a diminution of the function of the gland.—Dr. W. B. WARRINGTON alluded to the clinical features present in five cases of this lesion which he had seen in Liverpool.—Dr. W. BLAIR BELL mentioned the differences in function of the anterior and posterior lobes, and pointed out that it was only when there was disease indicating affection of the anterior lobe or hypophysis that surgical procedure could be contemplated.—Mr. R. W. MURRAY said that the results of operation upon the hypophysis had in the last few years been encouraging. This was especially the case in the infantile types associated with excess of fat, loss of hair, and loss of sexual desire. Opening and drainage of the cyst often found in these cases had sometimes been followed by complete relief.

Dr. THOMAS BUSHBY read notes of a case in which Multiple Growths had developed in the subcutaneous tissues, associated with an Enlargement of the Thyroid Gland. The growths were extremely vascular, two of them having a distinct nævoid appearance on their summits. One of the smaller growths had been removed and the microscopical appearance favoured the view that they were metastases of an adrenal rest-carcinoma.—Dr. ERNEST E GLYNN pointed out the resemblance of the tumour to fœtal thyroid. The so-called hypernephromata were often derived from the kidney itself, not from the suprarenal rests.—Mr. G. C. E. SIMPSON

alluded to the fact that metastases from the thyroid gland might appear before signs of malignancy in the gland itself.—Dr. WARRINGTON alluded to the association of disturbance of function in the various glands with internal secretions.

Dr. J. HILL ABRAM related the clinical features of two cases of Long-continued Fever of obscure causation. He mentioned the modern methods of investigation in such cases, and stated that he attached more importance to a negative diazo reaction than to a negative serum reaction in the exclusion of typhoid fever.

Dr. N. PERCY MARSH introduced the subject of Pyloric Stenosis in Infancy by referring to the now generally accepted view that there are two distinct types of this disease, the one a true congenital pyloric stenosis, the other a condition in which pyloric spasm is first induced, and that this eventually leads to hypertrophy of the organ, with stricture of its lumen. He then described in detail the signs and symptoms as seen in five cases which had recently been under observation, especial stress being laid upon the character of the vomiting, of the stools, and the appearance of the peristaltic wave. Cases showing the excellent results which followed systematic washing out of the stomach and careful dieting were described in detail. Dr. Marsh expressed the opinion that in every case, however severe the symptoms, medical methods should first be tried; if the infant did not show improvement evidenced by diminution of the vomiting, improvement in the condition of the stools, and, most important of all, by increase in the weight, then the surgeon should be called in before the infant is so emaciated as to make any form of treatment almost, if not entirely, hopeless.—Mr. K. W. MONSARRAT demonstrated the morbid anatomy of the disease and discussed the indications for operation as illustrated by one of Dr. Marsh's cases on which he had performed a posterior gastro-enterostomy. He considered that no explanation of the lesion other than that of hypertrophy as a result of over-action had been suggested. He said that the results of diet and lavage should be tested for from seven to ten days, and then if the child was losing weight an operation should be performed. He preferred posterior gastro-enterostomy to any other proceeding.—Dr. GLYNN stated that the stenosis arose from pure muscular hypertrophy of the pylorus which especially involved the circular fibres. He mentioned a similar case in a man, aged 43 years, in which the muscle near the pyloric ring measured three-eighths of an inch in thickness.—Dr. HUBERT ARMSTRONG regarded the hypertrophy as a congenital malformation and could not conceive how spasm in the feeble pylorus of the fœtus or infant could possibly produce it. The malformation was one of excessive development and therefore need not be expected in association with other congenital defects which, with few exceptions, were those of arrest or deficiency.—Mr. R. C. DUN agreed that medical treatment should first be given a trial. Rapid improvement usually resulted where the spasm was the predominant factor. If under medical treatment there was progressive loss of weight for several days operation should be performed without delay. Cases which remained stationary under medical treatment should be operated on after three or four weeks. Posterior gastro-enterostomy was likely to prove more satisfactory than pyloroplasty.

MEDICO-PSYCHOLOGICAL ASSOCIATION.—The autumn meeting of the Northern and Midland Division of this association was held at the kind invitation of Dr. C. L. Hopkins at the City Asylum, Fulford, York, on Oct. 20th, Dr. Hopkins being in the chair.—Dr. J. Middlemass read a paper on Hereditary Syphilis and General Paralysis. He commenced by apologising for bringing forward so well-worn a subject. The idea occurred to him some time ago that in cases of general paralysis where no history of personal syphilis could be ascertained an explanation might be found in hereditary syphilis. Probably most people were of the opinion that developmental or juvenile general paralysis was due to inherited syphilis, and in the great majority of the cases he had seen there was a clear history pointing in this direction. In one such case reported the Wassermann reaction had been found to be positive. He went on to suggest that in cases where there is no history of acquired syphilis, a positive Wassermann reaction might point to hereditary syphilis and not to the untruthfulness of the patient.—In the discussion which followed Dr. Hopkins referred to the use of the Ross Jones test.—Dr. E. F. Trevelyan spoke of the relation of tabes to syphilis in families, and mentioned an interesting case.—Dr. C. K. Hitchcock considered that general paralysis depended on the temperament of the individual as well as on acquired or hereditary syphilis.—Dr. Bedford Pierce gave a most interesting account of his visit to the International Congress on Psychiatry held in Berlin from Oct. 3rd to 7th. After giving a short sketch of the arrangements made for the holding of the Congress and the cordial reception extended to the visitors, he briefly outlined the various items that were brought before the Congress, amongst which may be mentioned papers on Asylum Planning; Work as a Therapeutic Agent; The Boarding-out of the Insane—illustrated with lantern slides exhibiting its working in Hungary; The Significance of the Wassermann Reaction; Mental Diseases in the Army and Navy; Sleeping Sickness. Perhaps the most interesting features of the congress were an exhibition of models of various asylums in South Germany; kinematograph films showing the movements of the insane; and an excellent kinematograph exhibition of micro-organisms, showing in a most striking way their movements, particularly in relation to the red blood corpuscles. Amongst those exhibited in active movement were spirochæta pallida and various spirilla and trypanosomes.—Dr. T. W. McDowall thought that some demonstration similar to those shown in Berlin would be very instructive if exhibited at one of the general meetings of the association in London.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Oct. 19th, when Professor H. Alexis Thomson of Edinburgh delivered the inaugural address on "Le Rheumatisme Tuberculeux" of Poncet of Lyons. He remarked on the importance to medical men of looking on subjects through new spectacles. With this object he intended to present the ideas of Poncet of Lyons before the society. He had no doubt that the ideas of Poncet would not altogether meet with approval, but he believed that they would have the effect of stimulating thought. Briefly, all those lesions of the body to which we were unable to assign a definite pathological cause Poncet regarded as being due to a tuberculous intoxication. This, too, in spite of the fact that by no clinical or pathological process could the presence of tuberculous disease be demonstrated. In order to pave the way for Poncet's views, Professor Thomson dwelt on the pathology of joints. Eburnation of the articular surfaces had hitherto been regarded as typical of osteo-arthritis, but Professor Thomson showed a bone with ivory eburnation surrounded by caries typical of tuberculous disease. Bony ankylosis had generally been regarded as due to suppuration, yet he showed another specimen clearly of a tuberculous nature. Two specimens of bony ankylosis of the vertebral column were hard to explain except on the tuberculous hypothesis. How often, too, did they see cases of fringes and loose bodies in joints and arborescent lipomata in joints which later became typical tuberculous joints? Cases that were labelled multiple osteo-arthritis or rheumatic arthritis most commonly ended in phthisis. They generally found a tuberculous family history as well, and most of them had seen the transformation of rheumatic arthritis into white swelling. Then, too, they saw the association of undoubted tuberculous disease of one joint with polyarthritis of the joints of the fingers. Turning to clinical manifestations, they had a variety of "growing pains" or arthralgia (Poncet). These cases invariably recovered, therefore it was assumed that they could not be tuberculous. Poncet maintained they were cases of an attenuated tuberculous toxin. The cases of acute arthritis, usually polyarticular, affecting the large joints of young adults, attended by fever and uninfluenced by salicylates, might disappear and recur or become chronic, terminating in ankylosis, or might be transformed into ordinary tuberculosis. True rheumatism did not result in bony ankylosis, and Poncet declared that these cases were tuberculous. Poncet carried his theory beyond joints. From analogy of the membrane of the joints he considered that the serous membranes of the pericardium, pleura, testis, and brain, &c., might similarly become affected by tuberculous lesions and lead to tuberculous adherent pericardium, tuberculous pleurisy, and meningitis, &c. To the same origin he assigned the cause of aortitis, phlebitis, neuralgia, ocular lesions, colitis, and thickening of the pylorus. Following his theory, Poncet declared that these cases did better on an antituberculous treatment than on a spa treatment. Although finding it difficult to agree with al

Poncet's theories, Professor Thomson thought that they should recast their views of these lesions in their practice.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—At the opening meeting of this society an interesting presidential address was delivered by Dr. William Mitchell upon Diagnosis by Means of X Rays. He said that the discovery of the X rays by Roentgen had made a great addition to our methods of diagnosis. The last five years, by the improvement in apparatus, had immensely increased the possibilities of this form of diagnosis. Fluoroscopy and skiagraphy were the chief methods employed. Fluoroscopy had the advantage of a direct inspection of an object which could be moved while being examined, but it was difficult to get detail, and might be dangerous owing to the difficulty of cutting off undesired rays. Skiagraphy, with modern instruments, was rapid, almost instantaneous; great detail was possible, and the disadvantage of a picture in one plane could be got rid of by stereoradiography, by the projection methods of Mackenzie and others, and by photography in planes at right angles. Difficulties still remained to those who could not afford a series of tubes of different degrees of "hardness" and in all cases of stout patients. By the use of these processes we could discover and localise: (1) foreign bodies, if metallic, glass (calcium or lead, but not potash or soda), but not wood; (2) fractures and dislocations; and (3) various pathological conditions in (*a*) bone, e.g., caries, gumma, growth; (*b*) soft tissues, dense fibromata or calcified deposits; (*c*) lungs, phthisis, tumour, pneumonia, mediastinal growths, pleural and pericardial effusions, displacements of heart, vessels, and diaphragm, and aneurysm. In the abdomen there was a small range of possibilities, owing to the density of the organs. Thus aneurysm would be demonstrated only by erosion of vertebræ. In the alimentary system the teeth gave good pictures, caries being readily visible, and the use of bismuth carbonate in doses up to 4 ounces, suspended in porridge or otherwise, revealed strictures and diverticula of the œsophagus, gastric dilatation, enteroptosis, and hour-glass contraction. Gall-stones except when coated with lime were almost invisible, but renal, ureteral, and vesical stones could be made out with almost absolute certainty. It was important here to have the landmarks afforded by the muscles, the ribs, and the transverse processes, and to avoid the fallacies of calcareous glands. In neurology cranial tumours, unless ossifying or arising from bone, were not visible, but the osteoclastic results of tumour, as in pituitary tumours, were easily made out. The condition of the sella turcica could also be made out in cases of acromegaly. Examination of the spinal column was not easy, but in children and in the cervical and lumbar regions valuable results had been obtained which had a bearing on nervous conditions. Eighty lantern slides made from skiagrams and some stereoscopic skiagrams were then shown.

BATH CLINICAL SOCIETY.—A meeting of this society was held on Oct. 7th, Mr. F. Lace, the President, being in the chair.—Dr. A. J. B. Leckie showed Specimens of an Ovarian Fibroid Undergoing Calcification and Cystic Degeneration weighing 30 pounds, and a Sarcoma of the Left Kidney involving the twelfth dorsal and first lumbar vertebræ, right kidney, and liver, weighing 4 pounds 10 ounces, which had been removed from a child, aged 4½ years, after death, whose weight three weeks before she died was 21 pounds.—The President then gave a short Introductory Address.—Dr. F. G. Thomson read a paper on a case of Acute Toxic Polyneuritis in a boy aged 19 years. Paralysis first affected the hands and feet and within ten days of onset caused complete palsy of all four limbs and of both sides of the face. The muscles of the neck, the intercostals, and the lumbar muscles were also extensively paralysed. Sensory symptoms were confined to slight numbness of the fingers and the soles of the feet. The deep reflexes were lost. Considerable wasting occurred in the scapular muscles and the muscles of the forearms and legs. The extensors of the fingers and toes especially suffered. Recovery was complete in two years from the onset. Treatment consisted in rest, good diet, massage, galvanism, and faradism. Strychnine was given from time to time.—Dr. T. Wilson Smith read a paper upon Some Varieties of Intermittent Albuminuria. Referring to postural or orthostatic albuminuria he pointed out that none of the theories of its causation seemed completely satisfactory. He had watched some cases of postural albuminuria over periods reaching to 19 years, but had not seen degenerative cardio-vascular changes occurring, nor the tendency to faint when in the upright position which Dr. Clement Dukes had described. He had, however, noticed lassitude, aching across the loins, anæmia, loss of appetite, and in one case prolonged attacks of nausea and vomiting. Referring to intermittent albuminuria due to substances passed in the urine, which irritated or injured the renal epithelium, he detailed cases of oxaluria after copious ingestion of strawberries, &c., producing temporary albuminuria; also cases due to copious passage of uric acid crystals, in some cases forming complete casts of uric acid.—Dr. Leslie H. Walsh read notes of a case of a Transient Unilateral Swelling in the Right Parotid Gland, in all probability of nervous origin.

Reviews and Notices of Books.

Practical Pathology. A Manual for Students and Practitioners. By G. SIMS WOODHEAD, M.A. Cantab., M.D. Edin., Hon. LL.D. Toronto, Fellow of the Royal Society, Edinburgh; Professor of Pathology in the University of Cambridge. Fourth edition. With 275 coloured illustrations. London: Henry Frowde and Hodder and Stoughton. 1910. Pp. 798. Price 31*s.* 6*d.* net.

Professor Woodhead's well-known book on Practical Pathology has long been out of print, and we welcome the appearance of this new edition, for no other work has appeared quite to replace it or to give in such an original, interesting, and thoroughly practical manner the information which the student and practitioner alike seek in a manual of pathology. While retaining its original aims and general form it has obviously been carefully revised and largely rewritten so as to incorporate the many new methods which have been introduced, and the advances in our knowledge of pathological processes which have accrued in the 18 years that have elapsed since the publication of its predecessor. To say this is practically to say that we are reviewing a new book.

The chief features of Professor Woodhead's book, which invest it with its special character, are the admirable descriptions given of the morbid anatomy and histology of diseased organs, the clear though concise accounts afforded of pathological processes, and the excellent coloured illustrations of microscopical specimens with which the book abounds. These illustrations are of a very high order and reproduce with remarkable fidelity the appearance of specimens prepared and stained by special methods.

The first chapter describes the technique of post-mortem examinations and the various special methods necessary to expose the different organs. General directions are also given for the collection of material for bacteriological and microscopical examination. The second chapter contains full details (including the formulæ of all reagents employed) of all the ordinary and of the most important special methods employed in the preparation of specimens for microscopical examination. These descriptions are worthy of special commendation, since they are given in such a manner as to be practical, for in each case it should be easy to carry out the method from the directions given.

In dealing with the results obtained from a practical study of pathological processes, Professor Woodhead first treats of the subjects of inflammation, organisation, and repair. He describes the various cells found in the blood, in inflamed and irritated tissues, and indicates what is known of their origin and functions. He next considers the results of inflammation in certain serous membranes, and then describes the healing of wounds and of ulcers. He then brings out clearly the relation of inflammation to repair, so that a student carefully working through this chapter should be

able, with the aid of specimens, to get a very clear idea of these fundamental pathological processes.

The morbid processes in the various organs and systems of the body are then described categorically in separate chapters. The various diseases of the liver are first considered; among these the account given of the forms of cirrhosis and of the stages of the interstitial changes causing these conditions may be specially mentioned as being more simply and clearly classified than is often the case in text-books on pathology. The morbid changes in the heart are next examined, and the various degenerations, infiltrations, and inflammations are clearly differentiated and described. The chapter on diseases of the blood-vessels which follows gives a useful account of the changes in atheroma and endarteritis obliterans, the latter condition being described as it occurs in syphilis, in healing wounds, interstitial inflammations, and in Bright's disease.

In the section on diseases of the alimentary canal an interesting account of the various forms of ulceration is given, and the distinctions between tuberculous and typhoid ulcers are given in tabular form. In the section on bones and joints a clear description is included of the changes in rickets, but it is a little surprising to find infantile scurvy referred to as "an exceedingly acute form of rickets." The chapter on the nervous system is short in comparison with its importance, but it contains some excellent illustrations. Tumours and parasites are also dealt with, and a considerable amount of valuable information is afforded. The plates showing the parasites of kala-azar, of syphilis, and of sleeping sickness are also worthy of notice.

Professor Woodhead's book is a valuable addition to the student's and to the practitioner's library.

The Medical Complications, Accidents, and Sequels of Typhoid Fever and the Other Exanthemata. By HOBART AMORY HARE, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia, and E. J. G. BEARDSLEY, M.D., L.R.C.P. Lond., Assistant Physician to the Out-patient Department of the Jefferson Medical College Hospital. With a Special Chapter on the Mental Disturbances following Typhoid Fever, by F. X. DERCUM, M.D., Professor of Mental and Nervous Diseases in the Jefferson Medical College. Second edition. Philadelphia and New York: Lea and Febiger. Pp. 406. Price $3.25.

IN the first edition of this work the authors pointed out that although systems of medicine and text-books innumerable deal with the ordinary manifestations of typhoid fever, the references to its accidents, its complications, and its sequels are necessarily brief. Nevertheless, anyone who has had even a limited experience with this disease has met with cases in which the malady has been so altered in its course by intercurrent affections as to be quite unusual, and to call forth all the knowledge in diagnosis and therapeutics the physician possesses. The work now under consideration deals in a comprehensive and instructive manner with these aberrant forms and the courses they may pursue. During the ten years which have elapsed since the first edition appeared the literature dealing with typhoid fever has greatly increased, and the advances which have been made in the study of the disease by bacteriological methods have added considerably to the knowledge of many of its complications and sequels. The book has been punctiliously brought up to date and will be found of real value as a work of reference. The chapters on "Varieties of Onset" and on "The Complications of the Period of Convalescence" are of especial interest. In this edition chapters dealing with the complications and sequels of variola, scarlet fever, measles, chicken-pox, and rubella have been carefully prepared and added to the original text. In discussing variola especial attention is rightly drawn to "the prodromal rashes and dermal complications" of this disease. These rashes vary widely in type and often serve to obscure the true diagnosis for hours, and it may be for several days. It is important that such eruptions should be known and recognised. A good account is given of them in this work, and a study of the descriptions given will be of use in actual practice. In scarlet fever the complications and sequels are probably more numerous and important than in any other of the infectious fevers, with the exception, perhaps, of typhoid fever. Rhinorrhœa, otitis, ulcerative stomatitis, tonsillitis, adenitis, nephritis, ulcerative and gangrenous angina, broncho-pneumonia, ocular complications, and other conditions occurring in connexion with scarlet fever are well described and discussed.

The chapter on the mental complications of typhoid fever, by Dr. F. X. Dercum, will be found of considerable interest. He divides these mental disturbances into three groups: (1) those which develop during the prodromal or initial period; (2) those which arise during the continuance of the fever; and (3) those which occur during or subsequent to convalescence. The forms of insanity which arise during or subsequent to convalescence are the most important and are described in detail. The remarks on prognosis are interesting. Dr. Dercum is of opinion that the prognosis depends largely upon the period at which the symptoms appear. Prodromal insanity, especially grave prodromal delirium, tends in a large number of cases to end fatally. The prognosis of the mental complications arising during the fever is almost uniformly good. The various forms of mental derangement which occur as sequelæ of typhoid fever also offer a favourable prognosis as a whole, although in some cases recovery is incomplete, and other cases may pass into hopeless chronicity and dementia.

It will thus be seen that this volume contains much that is interesting to those engaged in general practice, and in it are presented in compact form a description of many problems that may well puzzle those who have not had an exceptionally large experience of the infectious fevers.

The Public Milk-supply. By HUGH A. MACEWEN, M.B. Glasg., D.P.H., Assistant Medical Officer of Health, Cumberland. London: Blackie and Son, Limited. 1910. Pp. 182. Price 2*s.* 6*d.* net.

THE author has brought together a great deal of information as to the practical details of milk-supply in this well-illustrated manual. He has had exceptional opportunities of becoming familiar with the practical side of dairy farming; and if farmers, cowkeepers, and dairymen would make themselves acquainted with the improved methods that have of late years been brought into use for the protection of this indispensable article of food-supply, and that are here described and figured, much good would result. Dr. Macewen adopts the very sensible position that the present 3 per cent. standard for fat in milk is unsatisfactory; not that a genuine sample of mixed milk is likely to fall below this standard, but because it is possible that individual samples may occasionally do so, without any fraudulent practice; and because it is not fair that a farmer who sells rich milk, containing perhaps 5 per cent. fat, should get no more for it than his neighbour, whose cow yields milk containing the bare minimum. "Milk sent to creameries is paid for according to the amount of fat it contains. Why should not milk be sold for ordinary consumption in a like manner?" The distribution of milk in sterilised bottles is advocated, the milk having been previously strained and chilled. On p. 79 we read: "So-called sterilised milk refers to milk that has been simply boiled, and it is in that sense that we shall continue to use" the expression. This, however, is not

accurate; milk may be sterilised without being boiled, and boiled milk is not necessarily sterile. The author quotes the statement that the constant use of boiled milk has been known to give rise to rickets, adding that the results obtained in connexion with infant milk depôts where the milk has been pasteurised have not always been satisfactory. More details might have been afforded on this debated question, and the relative importance of the risks from polluted raw milk and from treated milk considered. Admitting the possibility of harm to the infant from feeding with treated milk, one must also allow that suitable precautions can be taken; while at present the dangers of a raw milk-supply for town children are more numerous and important and far more difficult to guard against. The information as to the housing of dairy animals is very useful and the illustrations are excellent. A special section is devoted to the law of milk-supply. Dairy products are but lightly touched on, and more information might have been given about butter; the quantity of salt used is not mentioned. A useful summary of the law relating to adulteration is appended.

Surgery and Pathology of the Thyroid and Parathyroid Glands. By ALBERT J. OCHSNER, A.M., LL.D., Professor of Surgery in the Medical Department of the University of Illinois; and RALPH L. THOMPSON, A.M., M D., Professor of Pathology in the St. Louis University School of Medicine, St. Louis. With 57 illustrations in the text and 40 full-page plates, 4 of the plates being in colours. London: George Keener and Co. 1910. Pp. 391. Price 25*s.* net.

ALTHOUGH goitre has been known for more than 2000 years, a very little time has elapsed since it was first recognised that the thyroid gland had a definite function, and that its presence, or the presence of a portion of it at least, is necessary for the health of life. The recognition of the true cause of cachexia strumipriva was really the starting point of the appreciation of the physiology and pathology of the gland. In many cases an enlarged thyroid is merely a source of discomfort to the patient because of the unsightliness which it causes, but cases do occur in which the enlargement is so great that it interferes materially with respiration or even with deglutition. In cases such as these, and even where no real interference with vital processes exists, the question of operative interference has to be considered; and the importance of the operation has fully justified the devotion within recent years of several text-books to the special study of the surgery of the thyroid gland.

The chapter on the history of the gland is of interest, the account of its development and its pathology is clearly written, and the series of plates illustrating the anatomy of the region of the thyroid as seen in successive stages of the dissection will help to make clear to the student the structures to be avoided in operations on the gland. The most important portion of this part of the book relates to the technique of the operation of excision. The authors believe that a general anæsthetic is preferable to any form of local anæsthesia, and the incision they recommend is horseshoe shaped, commencing a little above the upper border of the larynx on the one side near the anterior border of the sterno-mastoid, descending to about an inch above the upper margin of the sternum, and then rising again to a point on the other side corresponding to that from which it started. This incision certainly provides the surgeon with a very clear view of the field of operation. The several steps of the operation of excision are clearly described, the dangers which may be encountered are mentioned, and the methods of evading them are given. It is advised that a glass drainage-tube, surrounded by a layer of gauze, should be placed in the lower part of the wound or through a separate opening below.

The remaining portion of the book is devoted to the study of the parathyroid glands. These glands have been the subject of much controversy, some regarding them as of vital importance, and others looking upon them as merely undeveloped thyroid tissue. It must be confessed that a tendency of the present day is to appraise them as of more importance than formerly, and it is probable that the majority of those who have specially studied the subject will agree with the statement that complete removal of the parathyroid tissue results in the production of tetany. This is certainly the most elaborate account of the surgery of the parathyroids that has up to the present been published. Dr. Thompson describes the anatomy of the glands not only in the human subject but in many of the lower animals; the embryology and histology are given, and are followed by the pathology, but no definite suggestion is made as to their physiology. Cysts and tumours of the glands are described, and then comes an important chapter on the tetany which follows operative removal of these glands. He then describes what he calls somewhat curiously "mental tetany," that is to say, tetany arising apart from injury or operation, and he considers that in cases in which tetany follows dilatation of the stomach hypertrophy of the parathyroids is present. The chapter on parathyroid therapy is suggestive and contains references to most of the papers on the subject, and a useful and extensive bibliography of the parathyroid glands concludes the volume.

The book is well written, and, as might be expected in a subject still comparatively new, many views are expressed to which exception might be taken, but the authors in most cases are able to give good reason for the opinions they hold.

Handbuch der Vergleichenden Physiologie. (*Handbook of Comparative Physiology.*) Herausgegeben von HANS WINTERSTEIN in Rostock. Jena: Gustav Fischer. 1910. Band II., Erste Hälfte (Bogen 1–30), pp. 1–482 (1st, 2nd, and 3rd Lieferungen). Band II., Zweite Hälfte (Bogen 1–10), pp. 1–160 (4th Lieferung). Band II., Zweite Hälfte (Bogen 11–19), pp. 161–304 (5th Lieferung). Price 5 marks each part of ten sheets. The work will consist of about 30 "Lieferungen," or parts.

WHILE there are plenty of books and treatises on physiology—general and special—and also on bio-chemistry, there is, as yet, no completely comprehensive treatise on comparative physiology. The limits of the late "fifties" (1857) when Milne Edwards published the first volume of his "Leçons sur Physiologie," no longer bound our knowledge of this subject. Its importance is becoming recognised more and more, and indeed it must form the basis of all human physiology. Therefore both editor and publisher are to be heartily congratulated on this new and important venture, and we trust that both will reap their due reward. We wish this "Handbuch"—it is really an encyclopædia—every success. It not infrequently happens that when a large work like this is projected the editor proposes and the contributors—of whom in this case there are twenty in all—"dispose," and hence perhaps the reason why, instead of Vol. I., we have only the major part of Vol. II. (in five parts) before us, each part being composed of ten sheets, or 160 pages. When the work is complete it will consist of four volumes. Vol. I. will deal with the "Physiology of the Fluids of the Body and Respiration," Vol. III. with the "Production of Energy" and the "Physiology of Form," and Vol. IV. with the "Physiology of Sense Receptors, Conduction, and Response."

Up to the present time comparative physiology has been more or less like a partially explored continent, and even such data as have been obtained have not been arranged and codified systematically. The "Lehrbuch der Vergleichenden

Physiologie der Hausthiere" of Ellenberger and Scheunert (1910) is a text-book and deals only with the domestic animals. The general scheme of the present editor has been to leave to each contributor a free hand, but with the editorial injunction to keep in mind the "classes" of the animal kingdom, beginning with the protozoa and considering each class in detail. Again, he was faced by certain limits, botanical on one side; physiology of man and the higher animals, so far as this is treated of in the ordinary text-book, and morphology on the other.

Vol. II. deals with the physiology of metabolism and of reproduction. To Professor Biedermann of Jena is entrusted the subject of the "Intake, Elaboration, and Assimilation of Food," to which nearly 500 pages are devoted. No better "Fachmann" could be found than the versatile and erudite successor of Preyer. Starting off with a masterly account of the nutrition of plants and its relation to that of animals, including assimilation in chlorophyll-free plants, we are led on to the researches that deal with the assimilation of carbon, nitrogen, sulphur, and phosphorus in yeasts and moulds, and further on to what is practically a treatise on bacteria in all their varied functions, their chemistry and choice of food. Then follows a general review of the whole matter so far discussed and a long list of works of reference—an arrangement that is adopted in succeeding chapters. The down-grade processes of dissimilation, as determined by bacteria, are included, with a full discussion of the various fermentatations due to bacteria—the alcoholic, lactic, butyric, and other fermentations—the action of enzymes, proteolytic, fat-splitting, and those that act on carbohydrates; in fact, a full treatise is supplied on enzymatic action in all its varied phases, including a very full account of oxydases, making a comprehensive and interesting chapter. The author expresses himself guardedly regarding the probable action of animal oxydases, as the data are not sufficiently numerous. Then we touch upon the interesting subject of the dependence of enzyme formation on the kind of food used, a problem best known to human physiologists by the work of Pawlow, though bacteriologists have long been acquainted with corresponding results.

The second part deals with the Nutrition of the Protozoa as represented by the rhizopoda, gregarinæ, flagellata, and ciliata. A very full account is given of the work of Bütschli, Verworn, Rhumbler, Jennings, Jensen, Schaudinn, and others who have devoted much attention to the study of these ever-attractive unicellular organisms. The subject is one that interests all physiologists, zoologists, and botanists, for here is common ground. Here also the physicist comes in, for have not Berthold and Quincke given a theory of the importance of surface-tension in the intake of food by some of these lowly protoplasmic organisms? Not the least interesting are the classical experiments of Rhumbler, on the engulfing of a thread of shellac by a drop of chloroform and allied physical experiments.

Naturally, the infusoria are fully dealt with, and, in fact, the greater part of the third fascicule is taken up with this subject. The nutrition of sponges forms the third part, and it is treated in the same thorough manner (pp. 426–444), also with a full list of the chief papers added. Nearly 50 pages are devoted to the physiology of the cœlenterate group, but the third fascicule only takes us to actinia; and we must wait until the continuation of this subject is published. If the remaining "classes" of the animal kingdom are treated as fully then we may expect at least one other "Lieferung" on this subject.

We have before us also two parts of the second half of Vol. II. All Part 4 and by far the greater part of Part 5 are given up to a most interesting and comprehensive survey of the following subject, the Secretion of Protective and Useful Products, by Professor Fredericq of Liège, whose many-sided scientific and literary activities make him admirably adapted to deal with such a wide and fascinating subject. He deals with the subject from protozoa to mammals. The recent work of Richet on the poisons of actinia and their allies is introduced. It would be impossible to give in short compass a survey of the extraordinary mass of information which has been grouped in this form for the first time. Under the head of diseases supposed to be associated with fish diet we miss the name of Jonathan Hutchinson, and in the chapter on birds John Hunter's observations of the secretion of the crop of pigeons does not seem to be mentioned. The fifth part concludes with about 50 pages devoted to "the secretions"—i.e., the non-gaseous decomposition products, excluding unabsorbed nutriment, by R. Burian of Naples, whose researches on uric acid are so well known.

We can only repeat that this work is an encyclopædia—a vast storehouse of carefully garnered and correlated facts, which we feel sure will be gladly welcomed by all workers in physiology and zoology. We have nothing but praise for so commendable an enterprise and we wish it the marked success which it deserves.

LIBRARY TABLE.

Ionic Surgery in the Treatment of Cancer; with a Chapter on Ionisation in Surgical Tuberculosis and in Hæmorrhoids. By G. BETTON MASSEY, M.D., Attending Surgeon to the American Oncologic Hospital. London: Siegle Hill and Co. 1910. Pp. 243. Price 13*s.* net.—The value of the ionic treatment of disease is as yet not fully appreciated in this country, but it is probable that in the future it will be employed more widely than at present. This book, however, does not deal with the whole subject of ionisation in the treatment of disease, but it deals almost exclusively with the endeavour to treat malignant disease by means of metallic ions. Without going into the details of the method employed we may say that the process as described by Dr. Massey consists in introducing a metallic electrode coated with mercury into the substance of the growth and then passing a current through it to another pole placed on some other part of the body. Currents of several hundred milliampères are employed and anæsthesia is generally required. The author records and figures a number of cases in which he has employed the method. In most of those in which the growth was on the face successful results appear to have been obtained. With regard to malignant disease of the breast, improvement is recorded in many cases, and there are a few in which patients have lost all evidence of disease, but most of these are very recent. While agreeing that the method deserves a trial in some cases, we would urge that it should not be employed for operable cases, at all events in the present state of our knowledge.

A Practical Treatise of Diseases of the Skin for the Use of Students and Practitioners. By JAMES NEVINS HYDE, A.M., M.D., Professor of Dermatology in Rush Medical College, Chicago; Professorial Lecturer on Diseases of the Skin, University of Chicago, &c. Eighth and revised edition. Illustrated with 223 engravings and 58 plates in colours and monochromes. London: Baillière, Tindall, and Cox. Pp. 1126. Price 25*s.* net.—The text-book which has appeared during several editions under the joint authorship of Dr. Nevins Hyde and Dr. F. H. Montgomery achieved a world-wide reputation as a very trustworthy treatise on this difficult subject, and the present volume is a fresh edition which has been issued by Dr. Hyde alone, for he has been deprived by death of the help of Dr. Montgomery. The progress of dermatology

has required that the present volume should contain 250 pages more than the seventh edition, and we cannot say that any of the added material could well have been omitted. The main additions to the work have been many and some rearrangement has also been carried out; thus the growing importance of tropical diseases has induced Dr. Hyde to collect these affections together, and in the same way the affections of the nails. It is unnecessary to discuss fully so well-known a treatise, but we may say that it is a trustworthy account of the diseases of the skin, that it is written with moderation, and that the author is not afraid of expressing his own opinion. It is well illustrated both with black and white and coloured plates, and it can be thoroughly recommended to all who require something more than an elementary treatise on dermatology.

Saint Bartholomew's Hospital Reports. Edited by H. MORLEY FLETCHER, M.D Camb., and W. MCADAM ECCLES, M.S. Lond., F.R.C.S. Eng. Vol. LXV. London: Smith, Elder, and Co. 1910.—This volume is full of interesting papers. It commences with obituary notices of Sir Thomas Smith and Dr. W. J. Russell. Some interesting cases from the skin department are described by Dr. H. G. Adamson and a number of cases of artificial dermatitis are figured. Dr. Harold Pritchard describes a case of infective endocarditis due to a hitherto undescribed organism. A valuable paper is that on splenic anæmia by Dr. R. A. P. Hill; he comes to the conclusion that splenic anæmia includes two conditions: one of these is pernicious anæmia with enlarged spleen, and the other is splenic lymphadenoma; yet he looks upon the two conditions as varieties of the same disease, and he suggests that splenectomy should be used in the treatment of pernicious anæmia. Mr. A. J. Clark's paper on the detection of blood pigment in the fæces is likely to be useful, and he claims that the smallest quantity of blood entering the bowel, either in the food or by hæmorrhage, can be recognised in the fæces. Mr. W. Bruce Clarke reports two cases of lymphangioplasty; in both of them successful results followed. Mr. C. B. Lockwood has written on the surgical treatment of tuberculous mesenteric glands. Mr. C. Gordon Watson has analysed all the cases of perforation in enteric fever which have been operated upon in St. Bartholomew's Hospital up to the end of 1908. These are 27 in number and five recovered. The remaining papers consist of reports on X ray dermatitis: Dr. H. Lewis Jones writing on the avoidance of X ray injuries; Dr. H. G. Adamson on X ray dermatitis as it is related to dermatology; and Mr. L. Bathe Rawling writing on the surgical aspect of the condition. This group of papers is of the greatest value and gives an accurate statement of our present knowledge of the subject. The remainder of the volume deals with the registrars' reports and the additions to the museum.

Speech-Reading for the Deaf—not Dumb. A Book for the Use of those who have become Deaf after having acquired a Full Knowledge of the English Language. By A. J. STOREY, Headmaster of the North Staffordshire Blind and Deaf School, Stoke-on-Trent. London: Yellon, Williams, and Co., Limited; The Celtic Press, Chancery-lane, W.C. 1910. Pp. 166. Price 5*s.* net.—One of the greatest afflictions not of a mortal nature which may oppress the old or even those yet in middle life is the loss of the power of hearing. Many have questioned whether even blindness itself is not a less affliction than deafness. Whether this be so it is at least certain that to lose more or less completely the sense of hearing is a great deprivation, and therefore any means whereby the deaf man will be able to interpret what others say should prove an inestimable boon. The method which appears to be best suited for this is the learning of lip-reading, and this is comparatively simple to those who have already learned to speak. This book is, we think, the first that has been written with the object of teaching lip-reading to those who possess the power of speech; and it is admirably calculated to carry out its purpose. After a few chapters devoted to introductory matter, the science of speech, and the principles of lip-reading, a series of lessons is given on the various groups of sounds, and the student is instructed in apprehending the meaning and the interpretation of lip movements. The exercises are well chosen and they initiate the student gradually into the whole subject, and very useful hints are given for the prosecution of the study. We feel sure that the book will prove of immense use to many people. Deafness is often a great trial, not only to the deaf person himself, but to those who associate with him, and a careful study of the subject should give results which will prove of very definite benefit. Even when deafness is not severe the power of lip-reading may prove of value.

JOURNALS.

The Baby's World: a Practical Magazine for Mothers. Edited by J. JOHNSTON MACGREGOR. London: Ewart, Seymour, and Co. Price 6*d.*—The number for October completes the first half-year of the publication of this magazine, which aims at being a source of information with regard to everything a mother requires to know about herself and about the proper feeding, clothing, management, and education of her children. "The Rod and Pickle" is the title of a series of articles by Mary Cornwall on the Moral Education of Children, which promises to deal with this subject from a sensible point of view, not looking upon discipline as a punishment for the fault or a deterrent from future misdoing, but as the means of making a child realise the essential wrongness of particular acts and the unhappiness that follows the committal of a misdeed. The necessity to discriminate between faults and acts that are merely affronts to parental pride, and to appreciate the differences between wild, strong emotions and moral deficiencies is clearly pointed out, and the danger of moral precocity is not forgotten, for like the mental and physical, the moral nature of a child cannot be expected to mature in childhood, and a moral precocity is as likely to be followed by moral degeneration as is a mental or physical precocity. Such sensible articles as these will be read with profit and thoughtfulness by many parents who are in doubt as to the right course to pursue in checking or keeping within bounds those evidences of naughtiness which are often only the expression of uncontrolled and miniature emotions belonging to what may eventuate in a really fine character. We are of opinion that medical and surgical subjects cannot be written about in periodicals of the character of *The Baby's World* without either unduly alarming or dangerously informing the public upon medical and surgical points. Without a comprehensive knowledge of pathology and a familiarity with biological and physiological science it is impossible properly to appreciate etiological and therapeutical problems, and we cannot look with any approval upon the article entitled "A Mighty Atom" written by a medical man, and telling how the "tiny tubercular bacillus" affects the glands, joints, brain, and bowels of children.

THE NATIONAL FOOD REFORM ASSOCIATION.—The conference of matrons of hospitals and similar institutions, which the National Food Reform Association is convening, takes place at Caxton Hall, Westminster, to-day, Saturday afternoon, Nov. 5th. Miss Rosalind Paget will take the chair at 2.30 P.M., and a paper on the "Feeding of Nurses" will be read by Miss Musson of the Birmingham General Hospital.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 5, 1910.

Plague in Rats and Man.

THERE is no longer any ground for doubting that plague amongst rats is somewhat widely distributed in one corner of Suffolk, although its limitations cannot be determined until further investigation amongst the rodents in adjacent districts has been carried out. But enough has already been discovered to show what an extensive area may be involved in the matter of plague in rats without more than a single group of human cases occurring, and this in itself is a very reassuring circumstance, indicating how difficult it may be in this country under existing circumstances to bring about infection of human beings. Not only is the rat malady widespread but we have no precise knowledge as to how long this condition of affairs has obtained. There is apparently an impression locally that rat disease may have existed for many months or perhaps even longer, and the local press is searching the disease and death records of the past with the object of discovering cases suspicious of the human malady. Even if all such cases were to be accepted as positive no very startling results would be produced. But the fact must never be lost sight of that in India, China, and other countries where plague occurs the disease amongst rats is frequently associated with the same disease in the human species, while experience demonstrates conclusively that the rat disease may cause plague in man both by direct inoculation and through the medium of the flea.

That plague in India is frequently associated with and produced directly or indirectly by rat plague is certain, but there appears to be still room for further investigation with reference to the occurrence of plague in rats during periods when no human plague exists. Great Britain herself is not without previous experience of plague amongst rats, and in the year 1901, out of 1641 rats examined at Glasgow 30 were found to be infected. During the next four years there were nearly 3000 rats examined, and all with negative results; while in 1907, out of 7000 examinations one was found to have plague—a fact, slender though the connexion be, which leads to the reflection whether this solitary animal was the last dying ember of the 1901 outbreak or whether it was the result of some re-introduction of infection. Again, in the port of London between August 19th and Sept. 28th, 1908, of 162 rats found dead in certain of the warehouses several had died from plague. Researches made by Dr. KLEIN showed that this epidemic was of a mild and chronic character with a low degree of virulence, and while many persons were exposed to infection from these rats only one showed any signs of plague. Other illustrations of similar phenomena are to be found in the bibliography of plague, and these taken together rather point to the conclusion that plague amongst rats in a chronic and non-fatal form may have been more widely prevalent than has been generally recognised. The experience of rat plague in this country, and also in Australia, where, however, the mortality amongst human beings was sufficiently serious, seems to justify the conclusion that highly civilised populations, with the resources at their command and their sanitary habits, need have no apprehension of the results which accrue amongst Asiatic populations with their insanitary mud-floored and overcrowded dwellings and with their bare-footed inhabitants. But, in addition to these facts, there are other considerations which may have occurred to many of our readers who have been reflecting upon the Suffolk phenomena. For instance, Dr. C. J. MARTIN, of the Lister Institute, has drawn attention to the fact that the Indian or black rat, which formerly inhabited this country, has been largely swept out by the more voracious Norwegian or brown rat which, unlike the black rat, which is a house rat, largely frequents sewers and docks, and therefore is not, except in the docks, brought much in contact with man. This is certainly an important fact, but we gather that rats dead from plague have been found at considerable distances inland, a fact which would lend colour to the views of those who hold that the black rat is by no means so nearly extinct as is popularly imagined.

A matter of some bearing on the present prevalence of plague among rats in the eastern counties is the ability or inability of the rat to traverse the wide expanse of water presented by the estuary of the Orwell. Those who believe in the actual extermination of the rat over the area in which it was first found to be infected base hope upon the water-bound character of the country thereabouts. But we are afraid that their efforts may be attended by disappointment, inasmuch as rats pressed by hunger or pursuers will traverse bodies of water at least as wide as any of the estuaries in this country; indeed, it is related that rats have been observed at night crossing in swarms the waters of the Limfjord, a wide channel in Jutland, and these vermin are said to have been frequently seen swimming *en masse* across the straits separating the islands of the Faroe Archipelago. All these reflections are replete with interest for the naturalist, and the sanitarian may later have to take them into account, but at the present juncture there is an obvious duty which devolves upon the local authorities in compassing by every means in their power the destruction of the rat population in the respective districts, and by the frequent removal of refuse to discourage the presence of these vermin in the vicinity of dwellings. All experience points to the conclusion that if rats be kept outside the house the risk of plague infection is extremely remote, and the question of rendering the homes of the poor rat-proof by means of cement flooring may well be considered in future construction. Rigid cleanliness in the humbler quarters must be enforced, particularly in quarters where fleas and other dangerous insects are known to abound. The large landowners and their tenants in Suffolk will, no doubt, heartily coöperate with the local authorities in such schemes as they deem it best to adopt, but it is for the local authorities to organise matters and take the lead, and to galvanise into activity smaller holders of land who may not be playing their proper share in

the war towards rat extinction. Provisional arrangement should be made for isolation and observation, and persons intimately exposed to infection from rats, or possibly infection from human sources, should have an opportunity of obtaining such protection as plague prophylactics will afford them. If all these precautions be duly enforced no very great anxiety need be experienced by the human inhabitants of the invaded districts, although it must frankly be accepted that the position is fraught with some danger. A fact of good omen, upon which, however, too much stress must not be laid, is the difference between the rat flea in India and the rat flea in this country. The Indian parasite betakes itself not unwillingly to the human host, whereas the rat flea of this country has but a poor appreciation of the blood of man. There is certainly something in the behaviour of the malady in Suffolk which suggests some such explanation as this would afford.

Vaginitis in Hospitals.

OUR attention has been called, through a reference to THE LANCET therein, to an article published by a paper called *Mrs. Bull* on Oct. 29th, and headed "Great Ormond-street Children's Hospital," and having for its subtitle the following: "Shocking Disclosures — Little Children infected with Foul Disease—Lame Excuse of the Authorities." Where we come into this galley is the fact that a special commissioner was sent by the proprietor or the editor of *Mrs. Bull* to investigate certain complaints with regard to the treatment at the Children's Hospital of two small children at the beginning of this year, and a conversation having ensued between the commissioner and one of the hospital authorities, the medical man suggested that the matter was one for discussion in THE LANCET rather than in a lay paper. From our point of view, having carefully gone into the questions at issue, it seems doubtful whether there is any real need to say anything, but in accordance with our oft-expressed view that allegations against our medical charities ought to be discussed with even unnecessary freedom so that the public which supports them may judge of their conduct, we accept the reference to ourselves in the matter.

What actually occurred at Great Ormond-street Children's Hospital is as follows. In November, 1909, a case of vaginitis was admitted to the wards, and before it was recognised and isolated the infection had spread, and seven cases had to be dealt with. All these cases were isolated and treated in accordance with the usual and very strict routine—for, of course, the risk of this infection is extremely common—and all recovered. On Jan. 6th, 1910, a female child, A, aged 4 years (who entered the hospital, by the way, with a "dirty head"—that is, with pediculosis capitis), was operated upon for tuberculous glands, and three weeks later was sent to Cromwell House, Highgate, the convalescent home of the hospital, having then a clean head and no vaginitis. On March 17th she was received back at the hospital, and as she was found to have developed vaginitis she was isolated in the strictest manner until for three weeks she appeared to have been free from the malady. She was not sent home to be undressed by a surprised mother, as stated by the writer in *Mrs. Bull*. She re-entered the wards, but still with the special supervision accorded to possibly infectious cases, and finally went home on June 1st, having then apparently no vaginitis and a clean head. On June 28th she was re-admitted with a "dirty head" and a recurrence of her obstinate malady, was again strictly isolated, and at length the condition was cured. Concurrently with this case there was under treatment for pneumonia a little girl, B, aged 3 years. She was admitted to the hospital on Feb. 11th, and on Feb. 24th had sufficiently recovered to be sent to the convalescent home at Highgate. From there she went home on March 17th, but almost immediately was found to be suffering from vaginitis. She was re-admitted into the hospital, was isolated, and her condition, like that of the other child, yielded to treatment, though a relapse has followed. On these two cases, with perhaps a vague suggestion that the outbreak in November, 1909, was a serious one, an indictment against the hospital management has been framed by the editor of *Mrs. Bull*, which is not in the least warranted by the facts, and which could not have been made by anyone with medical knowledge.

We have no desire to minimise the importance attaching to the treatment of patients at our voluntary hospitals; we do not suggest for a moment, even, that it is not the business of lay papers to inquire into all complaints emanating from patients, particularly if those complaints have been disregarded by those responsible for the conduct of the hospital in question; and lastly, there is an urgency about an appeal made on behalf of little children which we recognise, for little children cannot help themselves. But there is another side to the matter. It is, to our mind, absolutely necessary that those who take upon themselves the responsibility of criticising the work of a great hospital should fit themselves for the task by acquiring the necessary knowledge. The extreme frequency of vaginitis among urban children of the lower orders is absolutely unknown to the lay public—how should it be otherwise?—and the author of the article in *Mrs. Bull* was not informed on this point. Every female child on becoming a candidate for admission to the Great Ormond-street Children's Hospital is rigorously examined because of this frequency, and because of the great infectiousness of the condition those with vaginitis are almost invariably rejected. But vaginitis has an incubation period, and no inconsiderable one; indeed, it may be as long as three weeks; so that the fact that a child is admitted apparently free from the condition does not clear the hospital from the risk of taking into the general wards a highly dangerous little patient. All this is perfectly well known to medical men and, of course, to the authorities of the Great Ormond-street Children's Hospital, who have an elaborate routine of observation and isolation to prevent the spread of this disease, when it is discovered, within the hospital walls. Into all hospitals and institutions cases of vaginitis associated with the gonococcus are occasionally introduced in the incubation stage, or with such completely slight symptoms that they escape observation, and whenever this happens a chance of the spread of the infection is very great. The wonder, indeed, is not that an occasional slight outbreak should occur, but that, especially in children's hospitals, the authorities should

be able to keep the infection under so well. Dr. EMMETT HOLT, the well-known professor of diseases of children at the College of Physicians and Surgeons of New York, in his admirable text-book on the "Diseases of Infancy and Childhood," discussing the exact situation we are now considering, points out that in institutions for the treatment of children's diseases the gonococcus vaginitis once introduced, unless the patient is quarantined, will spread until entire wards or dormitories are infected, and a local epidemic may be set up which will last for months. All this is common knowledge to medical men and hospital authorities; had it been known to the editor of *Mrs. Bull* an article which might have had an evil effect upon the working of an admirable charity would surely not have been written.

A word about the "dirty heads" of the two patients whose cases form the reason of these remarks. More than three-quarters of the little patients who enter the wards of the Great Ormond-street Children's Hospital have "dirty heads"—that is to say, they harbour pediculi capitis. A uniform treatment is adopted which is almost always successful. In the case of patient A she had a dirty head when admitted and a clean head when sent home. She remained at home from June 1st to June 28th, and when she was readmitted she had pediculi capitis, which the nurses at the hospital proceeded to deal with. In the case of patient B, stated by *Mrs. Bull* to have been sent home with a "dirty head," our contemporary appears to have been misinformed, for not only when the child was sent out on March 17th was her head clean, but it was still clean when she was readmitted on March 24th. We have seen the hospital records. Here again we are sure that the strictures would not have appeared if the facts had been in the possession of the writer in *Mrs. Bull*, who was probably unaware of the extent to which pediculosis capitis is present among the *clientèle* of a children's hospital. Having looked carefully into the charges brought against Great Ormond-street Children's Hospital by our contemporary, which amount to charges of ignorance, supineness, and callousness, we have come to the conclusion that none of the accusations would have been formulated by a writer who understood the pathology of the conditions in question, who realised the enormous difficulties which the authorities of all hospitals have to contend with in preventing the spread of these conditions, or who knew the solicitude and success with which the medical and nursing staffs of the assailed institution have combated their troublesome infectiousness.

Contract Practice in Germany and Government Intervention.

IN the annual Consular Report upon Berlin, made by Mr. H. J. BRUCE of the British Embassy in that city, the difficult position which arose recently in Germany out of the relations between the medical men attending sick clubs and managers of the clubs receives prominence under the heading of strikes and lock-outs. The fact that the Government intervened in the dispute, and the attitude of the Minister of the Interior towards the medical practitioners who sought to maintain the dignity of their profession and their right to settle their own business arrangements, are instructive in view of the prominence given recently by the report of the Royal Commission on the Poor-laws to proposals for future developments in the nature of State-recognised contract practice in Great Britain and Ireland. We do not anticipate that in this country the interference of a central or local authority would be attempted upon lines possible in Germany. In that country governmental and official intervention in matters of all degrees of importance, and in those which affect both individuals and classes of individuals, are a recognised feature in the social economy of the nation, so that more can be attempted without exciting remonstrance or rousing resistance than with us. The members of a scientific profession, however, occupy a position of some strength, because the demand for their services as healers renders them more independent of public support than those whose services can be dispensed with or replaced by the work of others. Consequently, in Germany, the medical profession, although its action in its essential features hardly amounted to a strike, was able by combination to take up a strong position and to secure recognition for its views. We may ask the question here, how far the spirit of subordination to discipline and to organisation, which the German people have acquired by long usage, may have aided the medical profession in presenting a firm and united front when at length it ranged itself in opposition to authority.

The Consular Report referred to states with regard to the origin of the dispute that "a local disagreement which had been proceeding at Cologne for some time between the management of the sick clubs and the medical men of the town was followed by a general resistance on the part of the medical men to the new Governmental regulations regarding the insurance of workmen. Contracts had been concluded in 1904 between the management of the Cologne sick clubs and the doctors which were valid up to Jan. 31st, 1909." Under these agreements the members were allowed to select their own medical attendants from those who had undertaken to treat the clubs at prices fixed by their contracts. The managers of the sick clubs professed to have discovered that in order to attract patients medical men prescribed unnecessarily large quantities of food, as well as of what we should term medical extras and medicines, with the result that the expenditure on these had risen from 37 marks per head in 1903 to 57 marks in 1909. Naturally, this growth in the cost of medical treatment, to whatever cause it may have been due, necessitated increased subscriptions, and to avoid these the club authorities refused to renew the old contracts, proposing for the future a return to their previous arrangement of employing medical men paid by salaries. This change of policy, indeed, they proceeded to put into force, with the result that after negotiations which proved ineffectual the German medical union at Cologne passed a resolution refusing to treat members of the Cologne sick clubs. Shortly after this the Minister of the Interior made a speech in the Reichstag, which, although it made no direct reference to Cologne, was clearly intended as an allusion to the situation there, and in which he said, "We are face to face here with a very serious state of affairs which shows to what the coalition principle, when exaggerated, can lead. To boycott a sick or dying man, and this is what it may come to, is a social reaction of

the worst kind, and I believe that a large number of German doctors are opposed to it. But they are impeded by the fetters of coalition and the pressure exercised by the medical courts of honour. These evils, like other evils resulting from coalition, must be suppressed." To this the medical union of Leipsic, with a membership of 95 per cent. of the German medical profession, made a firm and spirited reply, declining dictation as to their conduct, and maintaining their ground.

The position taken up by the German medical men with regard to the sick clubs was as follows. That all medical men should be permitted to attend members of sick clubs after entering upon agreements to that effect, which were to be drawn up by representatives of the medical profession and of the clubs. That committees should be established, consisting of medical men and representatives of the clubs in equal proportions, to which all disputes should be submitted. That committees or courts similarly composed should be established for purposes of conciliation and arbitration. That free medical treatment should only be granted in cases where the recipient's yearly income might be proved to be below a certain figure, fixed at 2000 marks. That there should be no legal interference with the rights of medical men to combine for their own protection. It will be seen that the attitude of the medical profession in Germany was entirely dignified and proper in the circumstances. It was taken up in order to resist the sweating of the medical profession by club practice at salaries avowedly adopted in order to effect economy at the expense of the medical men. All who engaged in the struggle, many of whom no doubt were not personally interested in it, deserve full sympathy from their professional brethren in this country. The cause of the original difficulty, the supposed tendency of medical men to bid against one another for practice by prescribing in a manner likely to please rather than to cure their patients, is interesting in view of proposals to allow the choice of medical men made by the majority of the Royal Commission on the Poor-laws. As a matter of comment it may be observed that any charge of such conduct as that alleged at Cologne could not possibly be dealt with properly by club managers only. In such cases a medical committee, not a joint one of medical men and laymen, would be the most efficient tribunal, and certainly would not be one likely to deal with undue leniency with a proved case of the serious nature referred to.

Annotations.

"Ne quid nimis."

THE FOUNDER OF THE RED CROSS.

THE death of that noble philanthropist and consummate organiser, M. Henri Dunant of Geneva, revives a controversy which had been regarded as closed—a controversy arising out of the questions, "Who was the real originator of the neutralisation of the army medical service and of the wounded in time of war?" Was it M. Henri Dunant, or was he simply the "elaborator" of a conception due to another? Professor Andrea Ceccherelli of Parma, while conceding all just praise to the Swiss author of the "Souvenir de Solferino," the memorable book that described for the world of 60 years ago the horrors of the battle-field and the sadly insufficient organisation for minimising the same, writes to the leading Roman journal: "As an Italian, who has no wish to detract from the merit of Enrico Dunant, I feel it my duty to recall (to my compatriots at least) that the 'Founder of the Red Cross' was the Senator, Professor Ferdinando Palasciano." A Palasciano prize, it seems, was instituted in commemoration of the services of its "hero and eponymus," and, as reporter of the conditions and circumstances of its bestowal, Professor Ceccherelli reminds the public that in 1885 the prize was conferred by the "Società Italiana di Chirurgia" (the Italian Society of Surgery) on Gaetano Mazzini for his documentary demonstration that the "conception and founding of the Red Cross" belongs to Ferdinando Palasciano, whose beneficent work dates from an incident in the late "forties" of last century, from the conflict, in fact, between the forces of King "Bomba" and the insurgent patriots of Sicily. The controversy appears to us about as idle as it is invidious, and has its analogue in many other controversies turning on the claim to priority of this or that innovator, inventor, or discoverer. As science progresses, and as "truth," in the words of the philosopher, "emerges from the illumination of many minds on many points," ideas and generalisations tend to become more and more "of the common stock," and their first realisation or conception, on the part of independent workers in the same field, to become more and more simultaneous. Witness the discovery of the planet Neptune—claimed, and with equal plausibility, for an English, a French, and a German astronomer. The discovery was, so to speak, in the air, and if it had not been made by any of these distinguished mathematicians it must have been made by another in the immediate future. The brotherhood, or in the Italian phrase, the "fratellanza," of science is too feelingly persuaded of what it owes to coöperation and to combined endeavour, to insist overmuch on the contribution of the individual, and claims to priority, inspired too often by personal *amour propre* or by racial vanity, seem ungraciously obtrusive when the innovation in question affects the common interests of mankind—interests in which the importance of the special originator might well, without effacing itself, retire into the second line.

PRIMARY ACIDOSIS.

IN another column we publish an interesting case of primary acidosis recorded by Dr. Sidney Bontor. For the symptoms which were noted we refer our readers to the original paper. As Dr. Bontor remarks, the diagnosis was difficult. It was evidently a toxæmia and appeared to rest between uræmia, an intestinal infection, and acidosis. The urine gave no definite reaction until 13 days from the onset of the illness, then diacetic acid was found to be present and the condition was shown to be one of acid intoxication. Among the circumstances in which marked acidosis arises are conditions which especially affect glycogenesis, such as removal of the pancreas, poisoning with carbonic acid, poisoning with phloridzin, exclusive feeding on animal fats, and, of course, severe cases of diabetes. In these conditions there is great deficiency of carbohydrates, and there is excessive transference of fat from the tissues to the liver, and the acidosis is excessive. None of these conditions appear to have prevailed, as Dr. Bontor said the patient was a small eater, and he suggests that her store of glycogen was always small; on the other hand, the small amount of food taken does not indicate an excessive indulgence in fat, and, indeed, he says that she was always pale and had a very small amount of adipose tissue. Nevertheless, his theory of the production of the acidosis is probably a sound one. There was a distinct history of chill, and Dr. Bontor believes that this so

interfered with the digestive processes that an intestinal toxæmia was induced, and subsequently the liver cells were so damaged by their work in dealing with the resulting toxins that they were incapable of performing their normal function of transforming the carbohydrates into glycogen. It is thus possible that the patient's store of glycogen became exhausted during the first few days of her illness. In spite of the severe symptoms produced, the patient recovered. Dr. Bontor states that it is probably the first recorded instance of recovery after a severe primary acid-intoxication.

THE FIRST SPANISH INTERNATIONAL CONGRESS ON TUBERCULOSIS.

THIS Congress was held at Barcelona from Oct. 16th to 22nd of this year. Amongst the articles communicated to the Congress were the following: The Educational Rôle of the Anti-tuberculosis Dispensary, by Dr. S. Bernheim and Dr. Louis Dienpart. The authors commented on the great advantages that had accrued from the work of the dispensaries which had been established throughout France for the care of patients suffering from tuberculosis, and the education which had been given to the families of these patients as to the "methods for preventing the spread of the disease." Dr. S. Bernheim and Dr. P. Barbier communicated a paper on Zomotherapy in the Treatment of Tuberculous Conditions. They stated that in conditions such as tuberculosis, when the digestive functions were often feeble, it was necessary to give flesh food in the most concentrated and easily digestible form. All fibres must be removed from the meat and the juice alone should be employed. Several clinicians had stated that they had obtained the best results from the juice of horseflesh, which was rich in hæmoglobin, in proteids, and in glycogen. Dr. Bernheim and Dr. Henri Parmentier extolled the value of open-air schools; and Dr. Hervé read a paper on the necessity of treating delicate children by means of open air and carefully regulated discipline as to their daily life.

THE BLOOD PRESSURE IN AVIATORS.

THE wonderful triumphs of the new art of aviation have directed attention to the mechanics of the aeroplane, but the equally new problem of the physiological effects upon the aviator seems to have attracted little notice. The rapid ascent to great altitudes exposes the body to conditions different from any terrestrial ones. Mountain climbing offers some analogy, but it differs in the fact that the transition from the high atmospheric pressure of the sea-level to a low pressure takes place much more slowly. In the *Gazette Hebdomadaire des Sciences Médicales de Bordeaux* of Sept. 25th Professor R. Moulinier has reported some interesting observations on the blood pressure of aviators who have ascended to high altitudes. On alighting after ascending to a height of 1200 to 2000 metres the aviator presents cyanosis of the extremities, probably from the low temperature of the high regions of the atmosphere. Often there is congestion of the conjunctivæ. The pulse is slightly accelerated, but there is no palpitation, arrhythmia, or epistaxis. There is often slight and transient headache and tinnitus aurium. Sometimes there is a tendency to sleep, and this may be felt even during flight. After the flight the blood pressure is always increased. In one aviator at 5.30 P.M., before flight, the constant blood pressure in the radial artery was found with Pachon's sphygmometer to be 9 centimetres of mercury and the maximum pressure to be 18 centimetres; the pulse was 70. At 6 P.M., after a flight of 25 minutes, during which at the twentieth minute he reached the height of 1100 metres, the constant pressure was 12 centimetres of mercury and the maximum pressure 19 centimetres; the pulse was 80. This increase in pressure is all the more remarkable as the aviators were athletes in full training. The rise was less marked in aviators who were fatigued. These showed palpitation of the heart and marked acceleration of the pulse (108). In one case troublesome tachycardia, symptomatic of functional insufficiency of the heart, and vertiginous movements, were observed in an aviator who, after a flight of an hour, had reached the height of 1000 metres. No rise in blood pressure was found in aviators who flew at low altitudes, such as 100 to 150 metres. As to the cause of the rise in blood pressure, Professor Moulinier puts forward the hypothesis that it is due to the sudden descent to earth in four or five minutes from a height of 1000 to 2000 metres which was attained in 20 to 25 minutes. At a height of 2000 metres the atmospheric pressure is 591 millimetres of mercury, at the sea level 760 millimetres. In the short time of the descent the circulatory system had not time to become adapted to the change of pressure. He therefore advises aviators to descend more slowly. He also points out the dangerous fatigue to which flight at high altitudes exposes the circulatory apparatus by provoking increased and irregular activity of the heart and vessels. A sound heart and supple arteries are absolutely necessary to an aviator. The list of distressing fatalities to aviators has become comparatively long in a very short time. The accidents are always attributed to some mechanical cause—some breakdown in the machine or unexpected current of air. No doubt this is usually true, but it seems to us quite possible that in some cases the breakdown may have been in the human machine, which is exposed to a new and peculiar stress, both physical and psychical. It is curious that this point does not seem to have received attention.

"ITALIA INFELIX."

ITALY has need of all the consolation she can derive from her gift, her "fatal gift," of beauty. Scarcely does she begin to recover from one visitation when she seems well-nigh crushed under yet another, which imposes fresh demands on her reserve of recuperative power till this, marvellous as it is, shrinks to within vanishing point. In the spring of the present year the whole Brianza region was devastated by a cyclone of transatlantic origin and in the same season the Irpinia—the Samnium of antiquity—was convulsed from centre to circumference by one of the earthquakes apparently periodic in the southern part of the peninsula. The summer brought an invasion of cholera, which, besides inflicting loss of life and paralysis of industry, agricultural and mercantile, has bequeathed a "scare" to the season which looks wistfully for the "paying guest"; and now, when the country is endeavouring by much outlay of official energy and administrative largess to keep the malady at bay—if not, indeed, to drive it from her shores—she is again the victim of atmospheric disturbances, exploding in "nubifragi" (or cloud-bursts) which have swept the Ischian island of its hotels, its houses, and its inhabitants, and flooded the Neapolitan Riviera with water in such volume and with such violence as to bury farmsteads under débris and to submerge whole tenements with their inmates in its seaward course. It is but cold comfort to the regions so disastrously visited that the work of salvage and relief, strenuously carried out by the King and his ministers, reinforcing communal and municipal intervention, is minimising the damage done and the misery left behind. More than merely "remedial measures," however well-inspired or effectively administered, are required to exorcise that feeling of

insecurity, that vague sense of impending calamity, which has now become an *idée fixe* in the superstitious south, hardening into hopelessness and stimulating that migratory spirit which is robbing it yearly of its manhood by overseas colonisation. Well did Pasquale Villari, man of letters, philanthropist, and statesman, appeal to his compatriots through the leading journals the other day to concentrate their best thought, energy, and resource on the rehabilitation of the Two Sicilies, if these are not to weigh on them like an incubus, impeding national development, perverting growth intellectual and moral, and sullying the credit of the Italian name. When a whole urban quarter or an entire countryside in the cholera-visited south rises in revolt against the officers, medical and sanitary, who are risking their lives to cure the suffering and to protect the temporarily immune; when the police and the military have to intervene to save the devoted practitioner from being stoned to death in the discharge of his duty, surely this implies a superstition, a benighted obsession, only to be explained by the lack of education which still keeps some 70 per cent. of the proletariat "analfabeti"! Confronted by a social stratum so little removed from the savage, how vain it is to expect confidence in the measures taken to adapt house construction (for example) to the unstable soil, to second the crusade against endemic disease like pellagra or malaria, to work in sympathetic concert with the initiative of Government for the rehabilitation of the soil, for the work of re-afforesting, for the "bonifiche," as they are called, which would remunerate the husbandman's labour as certainly as sanitation would improve his health or as well-chosen building-sites would make his tenement secure. The charity which begins at home must in Italy find expression in an "instauratio à fundamentis," or rehabilitation of the submerged masses, so as to evolve an intelligent, industrious, and contented citizenship, as the primary condition of social and national health. Not till then can she emerge from her present attitude of waiting upon Providence or anticipating aid from without—aid too often deflected from its purpose or its object by malversation on the part of distributors who have come to look on a visitation like the last as a "local asset" to be utilised in any way except in that of relieving the sufferer.

VINCENT'S ANGINA.

WE have on previous occasions referred to the peculiar form of sore-throat which is called after the French writer Vincent, who first described it in 1898, and have suggested that it is seldom recognised in this country, though it must frequently come under observation and be mistaken for diphtheria. These facts are shown in a paper published in the *British Journal of Children's Diseases* by Dr. J. D. Rolleston and based on 32 cases observed in the Grove Hospital. During the years 1905–09 3266 cases of diphtheria were admitted into the hospital and 610 cases were sent in under the certificate of diphtheria, but other diseases were found. In these were 30 cases of Vincent's angina. Its frequency was 0·9 per cent. of all cases of sore-throat and 4·9 per cent. in non-diphtheritic angina. Vincent found that it occurred in 2·2 per cent. of all cases of angina, but his patients were confined to soldiers between the ages of 20 and 25 years. At the Grove Hospital 14 cases occurred in the first quinquennium, 13 in the second, four in the third, and one in the fourth. Vincent's angina may be defined as a faucial lesion, usually unilateral, characterised by deep ulceration of the tonsil and adjacent structures, a peculiar fœtor, enlargement of the corresponding lymphatic glands, and associated with the symbiosis of the two organisms, a fusiform bacillus and a spirillum. It is customary to distinguish two forms, an ulcerative and a membranous or diphtheroid, but in Dr. Rolleston's experience the ulcerative is only a later stage of the diphtheroid. The slough which covers the ulcer may so closely simulate diphtheritic membrane that even after considerable experience diphtheria may be diagnosed, especially as the characteristic fœtor is often absent in the early stage. Thus 10 cases were diagnosed as diphtheria on admission, and antitoxin was injected, but no diphtheria bacilli were subsequently found. Nasal discharge, which is so frequently an initial sign of diphtheria, occurred in 14 cases. The resemblance to severe diphtheria was increased in five cases by the occurrence of faucial œdema. Adenitis, usually confined to one side, was sometimes considerable, but there was never anything resembling the "proconsular" neck of toxic diphtheria. In every case the inflammation resolved. Suppurative adenitis, as Vincent has pointed out, is unknown. The fœtor of Vincent's angina, though characteristic and quite different from that of malignant diphtheria, may mislead those who have had no experience of the former disease. Disproportion between the severity of the local and general symptoms is one of the most striking characters of Vincent's angina. In most of the cases the constitutional disturbances were slight and lasted only during the pyrexial period, which usually was brief. In 5 cases the temperature was normal throughout; in 10 it ranged between 99° and 100° F., and in only 4 did it rise above 102°, the highest reading being 103·8°. Compared with diphtheria, Vincent's angina is protracted. In diphtheria the throat becomes clean a few days after the injection of antitoxin; in Vincent's angina healing usually takes much longer. In the 32 cases the average period was 18 days. As to treatment, in most cases it is sufficient to swab the affected part night and morning with tincture of iodine, as recommended by Vincent. If the fœtor is very penetrating the throat may be syringed with a solution of chlorate of potassium and myrrh. In one case in which the ulceration advanced in spite of these measures the application of powdered methylene blue to the ulcers on two successive days was followed by rapid healing.

PRINCES TO THE RESCUE.

Prince Francis of Teck, it is well known, had intended to devote his time and energy to building up an adequate annual subscription and donation list for the Middlesex Hospital. Had he lived undoubtedly his efforts would have been crowned with success if we may judge by the rapidity with which he secured the sum of £20,000 to pay off a three years' deficiency in the running of the charity. His death has caused a loss which it will be hard to replace, and his name will always be associated with the Middlesex Hospital, not only as a most popular chairman of the weekly board, but as one who cared for the whole welfare of the institution Fitting is it, therefore, that the memory of him should be preserved by putting into operation those plans in aid of the Middlesex Hospital which he had so much at heart. In order to carry out this intention the Duke of Teck has consented to become a vice-president of the hospital, and Prince Alexander of Teck has been willing to succeed his brother as chairman of the weekly board. In a letter which he has written to the press, Prince Alexander expresses public feeling when he says that no more appropriate tribute could be paid to the memory of Prince Francis than the establishment of an endowment fund which would produce £7000 a year, the amount by which the normal expenditure exceeds the annual income Their Majesties the King and Queen have

already signified their approval of the scheme by sending handsome subscriptions to the fund, and their example will doubtless be followed in spirit and deed by numerous donors.

OPTICIANS AND SPECTACLES FOR LONDON CHILDREN.

AT the request of a deputation from the Worshipful Company of Spectacle Makers and the British Optical Association the Education Committee of the London County Council has considered the wording of a paragraph in the recently issued "Health Hints to Parents," in which parents were advised that spectacles should be worn only when prescribed by a medical man, and should never be obtained from an optician or "eyesight specialist" unless so prescribed. A subcommittee stated that it was convinced it was not possible, without grave risk of error, to test the vision of school children without the administration of a drug which opticians, by the terms of their diploma, were forbidden to use. The Council, therefore, should advise parents to consult a doctor in respect of defect of vision in their children. At the same time the pamphlet should be so modified as to remove any suggestion which might be taken as a reflection upon opticians. The paragraph as amended reads: "The children may require spectacles, but these should be worn only when prescribed by a doctor. The children's eyes should never be tested by opticians or eyesight specialists, as these do not use the necessary drugs."

ELECTRIC CURRENTS AND MICRO-ORGANISMS.

IT is some years now since the St. George's Hospital Reports were published, the last complete volume having appeared in 1879. These were essentially clinical in character, and it has not been found feasible or advisable to revive the reports in their original form. But the Reports have been revived in somewhat different guise, the new issue consisting of accounts of the work now being carried on in the clinical and research laboratories of the hospital. The volume is under the editorship of Dr. Charles Slater, director of these laboratories, and some of the articles therein have already been published in THE LANCET and elsewhere. The one article from Dr. Slater's pen has, we believe, not appeared before. It gives the results of experiments which he made to ascertain the effect of disruptive discharges and high-tension and high-frequency electrical currents on micro-organisms. In making the numerous experiments that have been necessary, the aim has been entirely to eliminate the indirect effects of the currents employed, such as electrolytic action, heating, effects of light, and other similar agents, so that the direct influence of the current would be the only factor of any significance. The various bacteria were cultivated in U-shaped tubes to facilitate the application of electricity; other experiments were made with cultures introduced into raw beef, so as more nearly to simulate the conditions of ordinary electrical treatment. Many other modifications were carried out on dead media, and at the end of the report we have the experiments made on guinea-pigs. In all cases the results were negative. While perhaps unsatisfactory in one sense, the ultimate finding is of great importance, as it meets the uncertainty that exists in the minds of many who are more or less interested in electrical treatment. It proves conclusively that any deleterious effects on bacteria that have followed an electrical application are due to the by-products and not to the thing itself. If we imagine a number of individuals bathing in a large pond or tank to which electrodes are fitted, one at each end, and a strong current passed through (yet not so strong as to heat the water uncomfortably) it is inconceivable that any one of the individuals would intercept enough of the total current to do any harm or to feel other than a mild and possibly pleasant stimulation. This, we think, very nearly represents the experiments at St. George's Hospital as applied to human beings, and we see how our efforts to ascertain the effects of electricity, *per se*, are limited to small doses, or more correctly, low current densities. At the same time the results obtained by Dr. Slater are very significant, and we are glad to have an authoritative pronouncement on the subject, based upon careful work. The form of high-frequency application known as diathermy opens up a new phase of electrical treatment, and on account of the high current density available without electrolytic disturbance similar experiments might be carried out with it. But here, again, the current density will be limited by the heating effect, as was shown by Dr. Nagelschmidt at the Royal Society of Medicine on Oct. 21st last, when he showed how egg albumin was coagulated in a few seconds.

THE RELATION OF THE ACID-FAST TUBERCLE BACILLUS TO OTHER FORMS OF BACTERIAL LIFE.

AT the Ninth International Conference on Tuberculosis, recently held at Munich, Dr. Stephen J. Maher (Connecticut, U.S.A.) read a paper on the above subject. He first pointed out that the young growth of tubercle bacilli, human, bovine, or avian, on glycerine-broth, glycerine-agar, or glycerine-broth-potato, are consistently acid-fast and stain entire, and are of a uniform size. As the bacillary scum on the surface of the glycerine-broth in air-tight flasks grows old and heavy, and perhaps a shade darker, smears will disclose the fact that many individual bacilli have become abnormally long and have taken on a filamentous appearance. Later, perhaps at the end of six months, some bacilli will disclose a beaded or granular content, and some will have lost, in part or entirely, their resistance to the acid. With the ordinary Ziehl-Neelsen staining many bacilli will appear blue or unstained. But these changes in the bacilli composing the scum will be slight as compared with those undergone by the bacilli that from time to time have fallen or have been shaken to the bottom of the flask. No change will be noticed in the gross appearance of these heaps, but the microscope will promptly show that they contain a large proportion of bacilli that have lost their acid resistance. Dr. Maher then described in detail his experiments on tubercle bacilli which have been cultivated for long periods on glycerine-potato. He states that the several bacterial forms that he has derived from old cultures of tubercle bacilli do not digest milk or change its reaction to litmus, and that most of them preserve some of the acid-fast property of the tubercle bacillus, but at the same time he claims that culturable bacterial forms other than tubercle bacilli can grow from cultures of old tubercle bacilli. From the researches he has carried out he has formed certain "tentative deductions" which he expresses in the form of questions as follows: 1. Is not the acid-fast tubercle bacillus simply a most highly specialised acid-fast bacillus that has acquired the faculty of resisting the lytic power of the animal cell? And, like all other acid-fast bacilli, was it not derived originally from a non-acid-fast bacillus? 2. Does not the hope for the infected animal lie not in killing the invader outright but in depriving him of his acid-fast armour and weapons? 3. Does not the great sensitiveness of the tubercle bacillus to change of environment *in vitro* afford a key to the solution of nature's cures of tuberculous animals? 4. When the infected animal is cured by change and fresh air is it not because in the new environment the tubercle bacillus has difficulty in perfecting its acid-fast development and therefore grows non-acid-fast or poorly acid-fast, or breaks up into cocci, which may or may not win the next battle with the

cells? ..... 5. Is not all the literature concerning the organisms of the secondary invasion or of mixed infection in tuberculous areas a huge blunder because of its failure to recognise the fact that the so-called secondary invaders are practically always derivatives of the struggling acid-fast tubercle bacillus? Dr. Maher hopes that these points will receive attention at the next meeting of the Conference, and it would be desirable that the organising body should take his suggestion seriously into consideration. Some of the questions raised will probably be answered in the affirmative; others, especially the one in which he refers to mixed infections, will give rise to much discussion, for the results obtained by other observers directly contradict the deductions at which he has apparently arrived.

MEDICAL INSPECTION AND AFTER.

Messrs. Cornish Brothers (Birmingham) have just published an interesting pamphlet by Miss M. C. Matheson, warden of the Birmingham Woman's Settlement, on medical inspection and the ways and methods adopted by various localities in following it up. Miss Matheson deals chiefly with Birmingham's experience, but her conclusions have a general interest. The work of investigation into the matter in Birmingham was undertaken by a small committee consisting of members of the Birmingham Charity Organisation Society and the Woman's Settlement. The committee is impressed with "the absolute necessity of some system of following up the medical inspection," and suggests that the Charity Organisation Society should either establish a network of subcommittees or that the education committee of the town should organise the subcommittees as school managers. The committee further reports that the facilities for treatment of general, ear, throat, eye, and skin cases are inadequate and proposes the appointment of a school oculist. It is interesting to note the continual pressure of facts forcing all sections of opinion toward the provision of some special treatment for school children after medical inspection. There seems very little doubt that the existing machinery of medical treatment will prove insufficient for the new demands in almost all localities and will have to be supplemented by what will be in fact, under whatever name, school clinics. The Birmingham suggestions, even were it possible they could be adopted, would involve the employment of a small army of voluntary officials "who, while throwing themselves into their duties with zeal and enthusiasm, will also submit themselves to the discipline of study, system, and coöperation." London's experience, at any rate, goes to show that such an army will be impossible to recruit. The London Care Committees have apparently broken down. Excellent as Miss Matheson's pamphlet is, and useful as are some of the suggestions, it is impossible to read it without being convinced of the magnitude of the administrative problem medical inspection opens up, and convinced, too, that we are by no means on the road to its solution. If the problem of Birmingham be difficult, how much more so that of London and the great industrial regions of Lancashire and Yorkshire. London has great difficulty in any attempt to solve the treatment problem and even, as the recent sharp letter of the Board of Education shows (see p. 1364), in facing the mere inspection problem. The hospital treatment system in London may be said to have largely failed, it is cumbrous in practice and ineffective in action, while the attempt of the London County Council to concentrate its inspectors on the districts served by hospitals with whom arrangements for treatment had been made was one of the facts that led to the "selection of schools" to which the Board of Education objects. Even routine inspection is difficult in London, adequate treatment will be no easier, the teachers object to the hospital plan because of its inefficiency, and voluntary workers are only spasmodically available. The way out is not clear, and it seems unfortunate that in such circumstances the Board of Education should insist so rigidly on the carrying out of its routine arrangements for inspection of the special age groups to the detriment of freedom of experiment. The Board is no doubt right in insisting on an increase in the number of members of the inspecting staff, but this is a change that was automatically taking place under the London County Council scheme. But the Board of Education insists on stereotyping its scheme before it has been adequately tested by experience. The goodwill of the London County Council in the matter is shown by the arrangements it had made for medical treatment by the hospitals, insufficient as these arrangements are now shown to be, and by the carefully formulated plan for gradually increasing the medical staff. The matter in a nutshell is that the London County Council has been told to cease its attempt to build up a medical inspection scheme gradually and to adopt the plan of the Board of Education. It is much to be hoped that under all the difficulties it has to face the London County Council will boldly tackle the question of treatment, without which the mere inspection will be of only secondary importance.

THE STATE FEEDING OF SCHOOL CHILDREN.

THE question of the feeding of school children excited much controversy during the passage of the Education (Provision of Meals) Act, 1906, and many were opposed to placing the feeding of children on the rates, being firmly convinced that the step was one which would never be revoked and one which would be disastrous to the best interests of the community. The success of many a measure may be judged from the diminishing necessity for its continuance, and in this connexion evidence from Brighton is interesting. The education authority there was one of the first to apply for sanction to spend money out of the rates to feed ill-nourished children, and so satisfactory has been the system of feeding that according to the canteen committee, "it is practically impossible for any child to be attending school physically unfit, through lack of food, to take advantage of the education provided." Experience has shown that one canteen has been sufficient to meet the requirements of the committee, whose work for the summer period April 20th to July 27th is as follows, the figures in parentheses referring to the summer period of 1909:—

Approximate number of nominations received	400
Total number of individual children who received free meals	321 (357)
Percentage of number of children who received free meals to number of children on rolls of public elementary schools	1·7 (1·9)
Highest number granted free meals during any one week	253 (289)
Lowest number granted free meals during any one week	220 (250)
Total number of free meals granted	14,288 (14,259)

The figures show a decrease in every particular save in the total number of meals, and this is accounted for by the fact that owing to the very cold spring the summer canteen opened a fortnight earlier than in the preceding year. When the canteens were first opened in 1908 the highest number of children fed during any one week in the summer was 320; the following year this figure dropped to 289, and now to 253. Another satisfactory feature is the growing endeavour on the part of parents to do something towards paying for the meals which their children receive, for 349 meals were supplied during the period under notice to children who brought a penny to lessen the cost. This figure is an increase of 185 over that for 1909. Every care is taken to guard against imposition, and special note is made of children who

are recommended for free meals by the school medical officer and whose home circumstances do not justify the meals being given free. The names of such children are entered on what is called a watching list. There are at Brighton no fewer than 18,000 children on the rolls, and the report of the canteen committee is very gratifying and its work deserving of the highest praise.

CORONERSHIPS FOR THE CENTRAL DISTRICTS OF LONDON AND MIDDLESEX.

THE death of Dr. G. Danford Thomas led to vacancies in the coronerships of the central districts of London and Middlesex, both of which appointments he held. At its meeting on Oct. 27th the Middlesex County Council had under consideration the appointment of a coroner for the Central District of Middlesex. The district comprises Finchley, Friern Barnet, Hendon, Hornsey, and part of South Mimms. The office was filled by the election of Mr. George Cohen, M.B., C.M. Edin., barrister-at-law. The appointment for the Central Metropolitan District was in the hands of the London County Council, who at its meeting on Nov. 1st received the report of the Public Control Committee of the Council. This committee, guided by the recommendation of the Departmental Committee on Coroners, submitted to the Council the names of three candidates, two of whom held medical and legal qualifications. The third candidate, Mr. Walter Schröder, who was without either of these qualifications, had had a very large experience of coroner's work. The Council did not consider itself bound by the Departmental Committee's recommendation and appointed Mr. Walter Schröder, who received a large majority of the votes. He was congratulated by the chairman and took the oath of office.

THE PATHOGENY AND TREATMENT OF MIGRAINE.

IN the *Revue Neurologique* of Sept. 15th will be found a suggestive article by Dr. Parhon of Bucharest on the vexed question of the pathogeny of migraine and on its treatment. The causal connexion of *some* of the migraines with defective function of one or other of the internal secretory glands is more than a mere hypothesis. Hertoghe was one of the first to demonstrate a relation between periodic headache and chronic benign hypothyroidism. Many sufferers from migraine show symptoms of defective thyroid function. Richard has published an instructive case in which periodic attacks of migraine followed the successful removal of a voluminous goitre. It is a curious fact, according to Bouchard, that in 1000 cases of migraine urticaria was noted 48 times, while in a series of 1000 cases of other diseases it was only noted once. The writer quotes a similar relation in his own experience and emphasises the value of thyroid treatment in urticaria, hence the possibility of the thyroid origin of some migraines is again suggested. Further, uterine affections, dysmenorrhœa, paludism, asthma, hæmorrhoids, glycosuria —to name but a few—are conditions not infrequently associated with migraine, and many observers have recorded cases of these where the function of the thyroid gland was impaired. The treatment of migraine (*pace* Dr. Parhon, it is preferable to say "some migraines") by thyroid opotherapy has been eminently successful. It is well recognised that during pregnancy periodic attacks of migraine may diminish or cease, and it appears justifiable to associate the fact with physiological hypertrophy of the thyroid. On the other hand, Dr. Parhon relates the case of a patient with migraine, whose headaches disappeared when symptoms of the development of Graves's disease manifested themselves. He also narrates in detail two cases of migraine successfully treated by the exhibition of thyroid substance. The second of these is noteworthy for the definite amelioration of severe symptoms. It is difficult to say exactly what the nature of the thyroid impairment may be. Probably it is a matter rather of hypo- than of hyper-thyroidism. The mechanism of the production of migraine through thyroid insufficiency is equally uncertain. Dr. Parhon is inclined to believe that, on the analogy of urticaria, the migraine depends on defective calcium metabolism. The frequent disappearance of migraine after the menopause is coincident with the restoration of thyroid equilibrium as a result of the cessation of the disturbing phenomena of the catamenia, pregnancy, and lactation.

THE AUTUMNAL TINT.

THE process of nutrition arrested in the world of foliage is probably responsible for the beautiful and varied colours which delight the eye in the autumn. Physiology and chemistry are concerned in the development of the leaf; they are concerned also in its demise, and they conspire to make the end æsthetic. The loss of vitality is sad, but it affords some consolation that chemistry finds an artistic conclusion in the production of a glorious series of yellow, red, and browns. Chlorophyll gently metamorphoses into erythrophyll or chrysophyll by a mysterious molecular re-arrangement dependent upon the supplies of energy being cut off. It is possible that the withdrawal of the vital supplies is a process of conservation. The tree stops expending its energy and stores it up for future contingencies, that it may tide itself over the winter or keep locked up an energy which is reserved to send forth buds again in the succeeding spring. Carefully conducted analysis has shown that while with many species the amount of nitrogenous material remains permanent in the summer, the quantity steadily diminishes as the season of autumn approaches, in which case the leaves grow red, while with other species when the chlorophyll fails the amount of nitrogenous material may be much the same in autumn as in summer, in which case the leaves go brown. To the former category belong the wild cherry, rowan, birch, and elder, and sometimes the oak and beech; and to the latter the sycamore, hazel, elm, and alder. In an interesting note in the *Chemical News* (Oct. 28th) upon the subject Dr. P. Q. Keegan regards the physiological causes of these differences as being due to the vegetation in the one set of cases terminating earlier than in other cases, and hence the organic principles already formed and apt for chemical transformations remain permanent, having, so to speak, nothing more to do and tend to accumulate relatively to the other constituents. In the declining vitality of the foliar organ incident to the approach of autumn the energy necessary to the sustenance of albuminoid activity is, Dr. Keegan considers, not forthcoming. On the other hand, in those trees where the vegetation is exhausted the albuminoids remain stored up as a sort of reserve with no stimulus to transform or de-assimilate into chromogen. The study is a most interesting one, and clearly bears analogies to colour phenomena in the human subject.

THE King has graciously consented to become Patron of the West London Hospital, Hammersmith-road, W., in succession to his late father, King Edward VII. The late Duchess of Teck always took a warm interest in this institution, where there is a ward (the Mary Adelaide) bearing her name. His Majesty has also graciously consented to become Patron of Epsom College, in succession to his late father, King Edward VII.

THE Drapers' Company has offered to erect a physiological

laboratory at Cambridge at a cost not exceeding £22,000, the plans to be approved by the Company, and the site and maintenance to be provided by the University. More judicious and timely generosity it would be hard to find.

THE next session of the General Council of Medical Education and Registration will begin on Tuesday, Nov. 22nd, when Sir Donald MacAlister, the President, will take the chair at 2 P.M.

THE annual dinner of the Royal Society of Medicine will be held under the presidency of Sir Henry Morris, President of the society, on Tuesday, Nov. 29th, at the Freemasons' Tavern, Great Queen-street.

THE Master and Wardens of the Society of Apothecaries of London have issued invitations to dinner at their hall to meet the Lord Mayor and Sheriffs, on Tuesday, Nov. 22nd.

THE MOTOR EXHIBITION AT OLYMPIA, LONDON.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

THE ninth International Motor Exhibition organised by the Society of Motor Manufacturers and Traders, opens its doors at Olympia to-day (Friday, Nov. 4th). As I have done on former occasions, I visited the scene of glittering brass and electric lights on the previous day, when there was less bewilderment, and I was able to try to find the cream among the rich milk that the show certainly provides for those in search of a motor-car. As the general public were not present, I was able without any discomfort to inspect pretty well every stand, and in the following very brief report mention is made of certain stands that ought to be inspected by all considering the purchase of a car. The space at my disposal does not allow of mention of many exhibits that I should like to write about, but so far as I could I noted in my wandering inspection everything most likely to appeal to a medical man.

The Adams Manufacturing Co., Limited, of Bedford, who introduced their single cylinder 10 h.p. car some five years ago, are on Stand No. 40, where the popular one-lunger is shown as a chassis and with a torpedo type body. They also show a 16 h.p. four-cylinder 85 mm. by 120 mm. This can be supplied with the Adams' planetary gear, or a sliding type gearbox can be fitted. With the former there is a smooth passage from one speed to the next without the possibility of a failure, and it is operated by a pedal or hand lever working in a gate. Many little refinements are included with this model—a self-starter, operated from the driving seat, front wheel brakes, a compressed air tank for inflating tyres or blowing horn or whistle, and abundant locker room.

The Alldays and Onions Engineering Co., Limited, of Birmingham, who are at Stand 59, inform me that their past season cars have proved so satisfactory that no radical alterations have been found necessary in their new models. They are specialising chiefly in a four-cylinder 14–18 h.p. model. The valves and tappets are enclosed by easily detachable covers, lubrication is by the mechanical force feed system, and the magneto is fitted at the forward end of the engine. Bevel pinions have now been substituted in the differential for the spur wheels formerly employed, and these cars are certainly worthy of consideration.

The Anglo-American Motor Car Company, Limited, of Heddon-street, Regent-street, London, exhibit on Stand No. 86 one of the latest American importations—the Overland Car. The 15–20 h.p. has a pressed steel frame and live axle drive, cooling by thermo-syphon, Bosch ignition, and Dunlop tyres. As the price (£220) for a two-seater will undoubtedly appeal to medical motorists I trust shortly to be able to give an account of a road trial on this car.

Messrs. Argylls, Limited, of Alexandria, near Glasgow, whose cars have always been favourites with medical men, are on Stand No. 34, and their new 12 h.p. model is sure to maintain their reputation. The engine is a four-cylinder, cast *en bloc*, bore 72 mm., stroke 120 mm., valves of large diameter, all on one side, and enclosed by an easily detached cover. Ignition is by high tension Bosch, driven by a cross shaft. All oil ducts are cast as part of the base chamber, and the lubrication is by a gear pump. A tell-tale of special design on the dash enables the driver to either see or feel that the oil is being circulated, the latter possibility being extremely useful for night work. The carburetter is a Zenith. Cooling is by thermo-syphon, with fan and honeycomb radiator. The whole suspension system is fitted with grease injectors, thus making lubrication certain. Two independent internal expansion brakes, operated by a hand lever, act on the back hubs, while the foot pedal brakes act on the front hubs. The clutch is of the multiple disc type running in oil. A range of four forward speeds and a reverse is provided, and all the gears are controlled by one lever working in a gate quadrant. The propeller shaft has two universal joints and is encased in a steel torque tube, the front end of which is fitted with a large spherical joint, which takes the torque thrust and at the same time forms a cover for the universal joint. The final drive is by a worm, and the floating shaft is fitted throughout with ball bearings. This chassis is well adapted for either a two-seater, double phaeton, torpedo, or coupé landaulette body.

Stand No. 70, where the New Arrol Johnston Co. of Paisley show their 15·9 h.p. car, should on no account be passed. These cars have forced feed lubrication to all the engine bearings, power unit and transmission gear *en bloc*, thermo-syphon cooling, metal-to-metal clutch, and valve tappet gear accessible but enclosed in a dustproof casing.

The Austin Motor Company of Northfield, near Birmingham, are on Stand No. 65. Their 15 h.p. town carriage has the driver's seat placed centrally and has the engine beneath, thus permitting a short wheel base, which is an advantage for town work.

A fleet of cars by the Belsize Motors Company, of Clayton, Manchester, on Stand No. 83, especially the 14–16 h.p. car, should be looked at, for I understand that several medical men have had good service out of this make, and the price is reasonable. The cylinders are 90 mm. by 120 mm. and cast in pairs, the clutch is metal-to-metal, th $_{e}$ carburetter is a White and Poppe, and the ignition is by Bosch magneto. Riley detachable wheels can be supplied.

On Stand No. 19 Messrs. Bentall and Co., of Heybridge, Maldon, Essex, show five examples of their 16–20 h.p. four-cylinder autocars. The chief points of this "all-British" car are single unit gearbox, propeller shaft, and back axle. All four brakes act on the road wheels direct, are compensating, and actuated by independent mechanism. The clutch is fibre-to-metal and runs in oil, and the gearbox has three-point suspension.

Messrs. Brown Brothers, Limited, of Great Eastern-street, London, show on Stand No. 48 a 20–22 four-cylinder, with a torpedo body, a 20 h.p. landaulette, and a four-cylinder 10–12 h.p., this latter both as a four and a two-seater. These 10–12 h.p. cars seem eminently suitable for professional use, and I trust at an early date to describe them fully. Messrs. Brown Brothers have also on Stand No. 212 a most useful set of accessories. The new Gabriel horn, which has a four-note chord of exceptional carrying power, is especially useful for cars with a strong exhaust. The Roper safety control is an ingenious contrivance for enabling the occupant of a car to fix the highest speed at which the car shall be driven. Various autoclipse lamps, which have recently been improved though the price has been reduced, jacks, motor stethoscopes, tyre covers, brake linings, and other odds and ends that are so dear to the heart of the enthusiastic motorist are also shown.

Cadillac motors shown by Messrs. F. S. Bennett, of Shaftesbury-avenue, London, have always been favourite American productions, and their stand, No. 99, is sure to be thronged, especially as a chassis, stripped to show the working of the mechanism and electrically driven, is on view.

The Clement Motor Company, Limited, of Leicester-square, London, through indifferent luck at the ballot, were unable to secure a really satisfactory stand in the main hall, and thus have taken up their position at Stand No. 136 in the annexe, where will be found four finished cars and a polished chassis. Their cars differ very little from the 1910 type, with the exception of the 14–16 h.p., where the stroke of the engine has been increased from 102 mm. to 120 mm. Ball bearings are employed throughout the transmission gear. High tension Bosch magneto only is fitted, and in lieu of a supplementary

ignition they advise those who desire a stand-by in this matter to carry a ready-timed spare magneto. The upholstery and inside fittings of these cars are worthy of special attention.

The Continental Tyre and Rubber Co., Limited, of Clerkenwell-road, London, E.C., are at Stand No. 308, where their square tread, three ribbed, and red-black and chrome leather non-skid tyres are shown. The leather type of non-skid is recommended for town work, and the red-black for country.

The Cowey Engineering Co., Limited, of Kew Gardens, S.W., show on Stand No. 146 their patent Cowey suspension, which was described in THE LANCET of June 4th, 1910, p. 1566. The car shown has been especially made for and built with this pneumatic suspension.

The Daimler Co. of London are on Stand No. 54, where they have four cars fitted with the Silent Knight engine. The 12 h.p. is a new production and has a four-cylinder engine 69 mm. by 114 mm., with a worm final drive. The Knight engine has made many claims since it appeared two years ago. I do not know if this motor gives more power, but it is certainly very silent, and yet I should not, I think, even yet throw over the faithful poppet valves. Poppet valves have done good work and will, I am sure, continue to do so. Still many have written asking my advice on this question, and now that a small Knight is on the market I hope some day to give my experience of a run in one.

Last year the exhibition of Messrs. A. Darracq and Co., Limited, of Walnut Tree Walk, Kennington, was undoubtedly of interest to the profession on account of the introduction of a 14-16 car at 225 guineas. The display this year at Stand 37 is equally worthy of close inspection. Half-a-dozen models are mounted—a 10 h.p. four-cylinder two-seater, three 15 h.p., and a landaulette on a 22 h.p. chassis. The 15 takes the place of last year's highly satisfactory 14-16. The price complete with standard body is £275, and although this is an advance on the figure asked for the 1910 car, the more expensive design of the chassis, better-class body, and high side doors to the driver's seat make it even better value than last season's model. One of the chasses is fitted with a torpedo body of the firm's own design, price £295; another, with a two-seated body, has been produced especially for the profession, and with hood, wind-screen, and a commodious tool-box at the back and high side doors to the driver's seat is excellent value for £295. The four-cylinder 10 h.p. should be a sweet-running car. The cylinders are 68 mm. by 120 mm., which means a £1 11*s.* 6*d.* tax. The price with a standard body is £210.

The Deasy Motor Car Company, Limited, of Coventry, are on Stand No. 66, and are showing their new small four-cylinder model, which has a worm-drive back axle, gate change-speed, and detachable wire wheels, and a most comfortable two-seated landaulette body.

The De Dion Bouton Company, of Great Marlborough-street, W., have several models on Stand No. 36. There are few departures from the 1910 type, except that a new two-cylinder engine has been brought out, and that in some there is an increased length of stroke in proportion to the bore. On the lower-powered cars a new plate clutch is fitted. All the engines now have high-tension magneto ignition.

The most striking object on the stand of Messrs. S. F. Edge, Limited, Stand No. 39, is a replica of the Napier car that gained the Grand Prix at the Brussels International Exhibition, and which was subsequently destroyed by fire. It is a cabriolet, and therefore can be used as a entirely open or a completely shut car. I noted many novel features in detail of finish, notably some beautiful panel-work in the interior and some very comfortable moveable seats. The attraction to doctors will be the 15 h.p. chassis, highly polished all over, and exquisitely finished in every detail by hand. The special points are forced lubrication through a hollow crank-shaft, wide and efficient road-springs, accessible magneto, with advance and retard actuated by a lever on the steering wheel, water circulation by thermo-syphon, and a multiple plate clutch, two-jet carburetter, and live axle with a worm drive. A model de luxe landaulette on a 15 h.p. chassis, painted jet-black with fine lines in white, and white wheels picked out in black, is also worthy of notice.

At Stand 252 the Electric and Ordnance Accessories Company of Aston Manor show a standard car front wheel fitted with Timken bearings. This is mounted on a cast-iron base and revolves by means of an electric motor. A weight represents the end thrust, and the arrangement illustrates the capacity of this bearing to withstand side-thrust loads. The rollers and surfaces against which they bear are adjustable on account of their taper shape, which certainly is an advantage over the ordinary and non-adjustable bearing.

Messrs. J. C. Fuller and Son, of Old Ford, E., devote a large portion of Stand No. 258 in the gallery to illustrating their devices for car lighting. Their system of wiring, which they term "wireless," acts by enclosing the insulated conductor in a metal sheath, which later serves as a return for the current. This method obviates unsightly loose wires, and the sheath is so small in diameter as to be almost imperceptible. The mechanical act of placing the lamp on the bracket makes electrical contact, thus avoiding the one trouble of the generality of electrical lighting—the connecting and disconnecting of wires. Their dynamo is very small and compact, and can be driven by either direct gear or a V belt. The standard machine is wound for an output of nine volts and will work two head-lights, two side, tail, and interior lamps. When the E M F drops below normal the circuit is automatically broken, and in addition it is interrupted by mechanical means depending upon the rate of rotation of the armature.

Every motorist has an interest in cutting down that big item of expense to motorists, the upkeep of tyres, and all will be interested with the exhibit at Stand No. 208, where Messrs. Harvey Frost and Co., Limited, of 39, Great Eastern-street, show their various vulcanising plants for repairing covers and tubes. They also show a new all-rubber motor tyre tube with an absolutely flush and therefore frictionless join. This tube has a flush valve seating and the valve stem is fitted with the "Warland" dust and rust proof cap, which is so easily attached and detached.

The London Motor Garage Company, Limited, of Wardour-street, W., on Stand No. 82, show various types of the Charron car. This motor was fully described in THE LANCET of July 2nd, 1910, and the mechanical details of 1911 differ but slightly from those previously given. This firm are prepared to enter into a contract for the maintenance of their cars and so to relieve the owner of all the worry incidental to the care and management of car and driver.

Messrs. Markt and Co., of City-road, E.C., have on Stand No. 232 a variety of the Jones speedometers; also their little giant wheel-pulling device, which is most useful for drawing off stubborn wheels.

At Stand No. 30 Messrs. Morgan and Co., Limited, of Long Acre and Old Bond-street, have a fine collection of Adler cars, including the 12 and 15 h.p. The former was described in THE LANCET of Feb. 19th, 1910, and there cannot be two opinions as to the attractiveness of these models, which, moreover, can be purchased with confidence that every one will yield excellent service.

The Milnes-Daimler Company, of Tottenham Court-road, have, on Stand No. 143, a fine show of the latest Mercedes models, including a live-axle 15 h.p. chassis, which has a double cone leather clutch, high-tension ignition, and a four-cylinder 70 mm. by 120 mm. engine. Their 40 h.p. has a "Mercedes Knight" engine.

Messrs. Minerva Motors, of Holborn-viaduct, on Stand No. 61, show their 16 h.p. landaulette, which has a silent Knight engine, a strengthened back axle, cardan shaft with universal joints at both ends, and the shaft is completely enclosed in a pressed steel casing, which serves as a central torque tube. Bosch dual ignition takes the place of the single ignition that was used on last year's type.

The New Engine Company, of Acton, W., are on Stand No. 24. Their special feature is "No bonnet." The machinery is arranged in the centre of the chassis, thus allowing greater body space; in fact, the body is carried in front of the rear axle, which results in extraordinary smoothness, even over the roughest roads.

Messrs. Panhard and Levassor, of Acton, W., present on Stand No. 43 a fine set of models, all painted the well-known Panhard green. One body is by Vincent of Reading, another by Messrs. Barker, and both are strikingly handsome in appearance and well finished. On the 25 h.p. a silent Knight engine is fitted, and on the 12–15 h.p. the ordinary and certainly excellent poppet valve motor supplies the power. Messrs. Panhard now employ the popular live axle instead of transmission by chains.

The Phœnix Motors, of Caledonian-road, N., are on Stand

No. 138. Like all keen manufacturers, this firm have carefully considered the question of alterations in their models for 1911, and as a result of the past success they have decided that no amendments are called for. Their feature is a central Hans Renold chain for transmission of the power from the gearbox to the live axle, which has the advantage of flexibility. A two-cylinder Minerva 90 mm. by 100 mm. engine is fitted on the 8–10 h.p., and a 102 mm. by 115 mm. on the 10–12 h.p.

On Stand No. 46 Messrs. Renault Frères, of Newman-street, W., show four cars and two chassis, and these all undoubtedly display the excellence of workmanship for which this firm is noted. The bodies, too, are on a par with the engines, especially a limousine landaulette by Hooper, and an ideal sedan coupé by Rothschild. The latter is fitted on their two-cylinder 8 h.p., and is a very suitable car for a professional man.

At Stand No. 171 in the gallery the Rotax Accessories Company, of Great Eastern street, E.C., show the Rotax-Leitner car lighting system, also wind screens suitable for torpedo bodies, and an extensive range of mascots, tyre pumps, horns, and tool kits.

The Star Motor Works, of Wolverhampton, are on Stand No. 64. These makers have for years catered for the medical profession, and the five cars which they have on view this year are excellent examples of their productions. The 12 h.p. has an engine 80 mm. by 120 mm. stroke, and there is a special universal joint between the clutch and gearbox, which latter has now four speeds forward, with direct drive on the top.

The Sunbeam Motor Car Company, of Wolverhampton, are represented on Stand No. 69 by a couple of chassis and three complete cars. The car that will appeal to the profession is certainly the 12–16 h.p., which has four cylinders 80 mm. by 120 mm., worm drive, with the transmission tipped, so as to make it one straight line. Four forward speeds are fitted, with the direct drive on the top speed.

The Swift Motor Company, of Coventry, are on Stand No. 44. The popular 7 h.p. single cylinder, which was described in THE LANCET of July 23rd, 1910, has now an entirely new engine fitted, and the main bearings are of phosphor bronze. These are attached to the upper portion of the crank case, the lower half merely acting as an oil reservoir. The ignition is by magneto with advance and retard lever.

Messrs. C. A. Vandervell and Co., of Acton Vale, W., show their variable speed dynamo car lighting system, in which, at a very low cost, a constant voltage is secured over an astonishingly wide range of speed without the slightest mechanical complication. Their smallest dynamo, costing some £7 7*s.*, weighs about 16 pounds, is driven off the engine, and will give 5 ampères at 4 or 6 volts, which is sufficient to keep an accumulator charged and to light the usual side, tail, and interior lamps of a car. A full range of C.A.V. lamps, ignition coils, magnetos, and electrical fitments are also shown.

The feature of the exhibition of the Valveless Car Company, of Prince's-street, W., is a sectional engine so cut away that the valveless system can be easily seen.

The Vulcan Motor and Engineering Company, of Southport, have on Stand No. 87 three samples of their 15·9 h.p. cars, one of which, fitted with high side doors, buttoned upholstering, black leather hood, and folding wind screen, is specially designed for a doctor's use. On this car the crank chamber, flywheel pit, and gearbox are all bolted up together and three point suspended. The cylinders, 80 mm. by 120 mm., are cast in pairs. Cooling is by thermo-syphon, and the water jackets round the valve chambers are of unusually generous dimensions. The crank shaft has three long bearings, and the connecting rod ends have Walker-Hanna patent bearings, which permit of new ones being put in without any expert assistance. The inlet valves are paired for each cylinder, and the inlet passages for the mixture are cast between them, thus permitting warming of the gases on their way. The clutch is of the leather-faced cone type. Lubrication is by a rotary oil pump, with a tell-tale on the dash board. Ignition is by a Bosch magneto driven off the distribution gear. Three speeds forward and a reverse are provided, and the final drive is by an overhead worm through a flexible joint.

Messrs. Warwick Wright, of High-street, Marylebone, W., are on Stand No. 74. Their 12–14 model, which will chiefly appeal to the profession, has an engine 75 mm. bore and 110 mm. stroke. The features are the usual metallurgique clutch, spring drive, pressure fed petrol, four-speed gearbox, and control levers on the steering column. All their coach work, it will be noticed, is by Vanden Plas, and is really a revelation of artistic sense, and gives the maximum amount of room with luxury of upholstery.

The Wolseley Tool and Motor Car Company, of Birmingham, have always been favourites with the profession, and their present models 12-16 and 16-20 h.p. cars are sure to attract attention, especially from old clients, all of whom had such good work out of their early and excellent little 6 h.p. cars. The 12-16 model was described in THE LANCET of Sept. 11th, 1909, but since then several alterations in engine details have been made. The valves are of larger diameter, and the carburetter is now more accessible. The starting handle is carried on the engine in a manner similar to the larger Wolseley cars. The change-speed and brake levers have been altered to render them more suitable for bodies with closed-in fronts, and the reverse lock has been replaced by a push button on the change-speed lever. Both front and rear wheels are fitted with Timken roller bearings, which are held in a cage, adjustable independently of the hub, to facilitate removal of the wheels. A torque bar has been added, the springs have been lengthened, and the frame is built narrow in front to give a good steering lock. The four cylinders have a bore of 79 mm and a stroke of 114 mm., thus bringing the car into the (to doctors) £2 2*s.* tax class. The transmission of power to the live axle is by worm gearing. The car shown has a rotonde phaeton body, with a scuttle dash and high driver's doors, and with a Cape hood and a wind screen constitutes an ideal car, certainly worthy the consideration of prospective purchasers. The 16–20 h.p. is shown in chassis form, and is made in two wheel bases. The short wheel base is long enough for the usual touring body and the longer one answers for a closed carriage. The rear axle is worm-driven, and to reduce the angle of the propeller shaft universal joints the engine and gearbox are inclined to the main frame. As on the smaller model, the valve area has been increased and the starting handle is on the engine. The carburetter is carried high and arranged for pressure feed, the air pump for the pressure being combined with the oil pump. The clutch has an adjustable spring and is of the metal-to-metal multiple disc kind. The gearbox provides four speeds forward and one reverse, the direct drive being on the top.

Other cars and accessories, as well as the general features of the cars, will be considered next week.

(To be continued.)

THE MEDICAL INSPECTION OF LONDON SCHOOL CHILDREN.

Letter from the Board of Education.

THE Education Committee of the London County Council on Oct. 26th had before it a letter from the Board of Education dated Oct. 7th, 1910, with reference to the provision in the metropolis for the medical inspection of school children. The Board stated that the work of the inspecting officers was generally satisfactory and thorough, but on considering the facts reported by its medical department the Board was unable to avoid the conclusion that the work of the staff of inspecting officers was not adequately organised and controlled, and that there was little or none of that effective supervision or guidance in the primary work of medical inspection which was absolutely necessary if a large staff of part-time officers was to be employed. Moreover, the arrangements for following up the defects and ailments disclosed by inspection to the stage of treatment and for securing the maximum advantage from the Council's own expenditure on treatment had been ineffective and unsatisfactory. The visits of the Board's officers fully confirmed the view expressed in a former letter to the Council that the arrangements for inspection in London did not comply with the requirements of the Education (Administrative Provisions) Act, 1907, and of the Code for 1909–10.

On a review of all the facts, the Board could not resist the conclusion that by adopting or acquiescing in a scheme of medical inspection widely different from the schemes which had approved themselves to other great education authorities the Council had not only placed itself in direct conflict with the Code and the Act, but had failed to lay a satisfactory foundation for the work of amelioration it had in

view. If the Council was to avoid waste, confusion, and embarrassment in this matter, a radical change in the organisation of medical inspection was required. The Board has no means of judging whether the proposals recommended to be adopted as from Jan. 1st, 1911,[1] would insure, in fact, the satisfactory organisation and direction of the work of medical inspection and the other branches of the school medical service of London. But as regards the proposal to increase the staff of school doctors it appeared to the Board that the number of inspecting officers recommended could not by any possibility suffice to carry out within the year the number of inspections required by the Board's minute made under section 13 of the Act of 1907 on June 25th last, modifying article 58 (b) of the Code for 1909, unless they were to be available for the whole of the 12 months of that year. The proposals before the Council, however, were recommended for adoption, not as from the reopening of the schools after the summer holidays, but as from Jan. 1st next. In these circumstances it was imperative that consideration should be given by the Council at once to the question of supplementing the scheme now before it, and such further medical assistance should be provided as might be necessary to secure that the requirements of the Board's minute of June 25th should have been fully and not partially satisfied in all public elementary schools during the current year—i.e., the year ending July 31st, 1911—and that compliance with those requirements should not be confined to the later months only of that year.

In view of the urgency and importance of the matter the Board asked for an early reply, giving precise information as to the changes to be brought in operation during the present autumn to remedy the many and grave defects in the present system of medical inspection in the metropolis, and to bring to an end the Council's long-continued failure to carry out the requirements of Parliament in this respect, so gravely affecting, as it did, the health of the rising generation in London, for which the Council was responsible.

Draft Reply approved by the Education Committee.

The subcommittee recommended that the clerk be directed to reply to the Board of Education explaining that the summer recess was the cause of the delay in replying to the Board's letter of May 17th, and setting forth the increases in the staff of school doctors and the central medical staff agreed upon by the Education Committee in July last.[2] The suggested letter proceeded: "In view of the long recess it was found impossible to bring this scheme to the Council before Oct. 25th, and the Council on Nov. 1st approved without modification the scheme which had been informally brought before the notice of the Board of Education." (It will be observed that the subcommittee took for granted the approval by the Council of the recommendations of the Education Committee discussed this week.) The letter concluded: "The Council gathers that the Board does not suggest that the number of officers proposed by the scheme referred to will not be sufficient under normal circumstances to carry out the requirements of the Act and of the Code for 1909–10, as well as to devote attention to the other phases of medical inspection which are not required by the Act or Code but on which the Council lays great stress. It is suggested, however, by the Board's letter that owing to the date on which the last of the staff will be appointed it will not be possible to carry out before July 31st, 1911, the requirements of the Code for the current educational year. In this connexion it should be stated that the Council has devoted great attention to this aspect of the question, and the Board may rest assured that the requirements of the Code as at present understood will be fully carried out within the current educational year."

The draft letter was approved and forwarded to the Council, which discussed on Nov. 1st the letter from the Board of Education and the scheme reported in THE LANCET of August 6th last, submitted by the Education Committee at the same time.

Discussion at the London County Council.

At the meeting of the Council on Nov. 1st Mr. HOBSON criticised in detail the Education Committee's estimate of the number of inspections which could be made in 12 months by 100 quarter-time medical officers. It was proposed to inspect the children at three periods: on admission, and between the ages 8 and 9, and 12 and 13. He congratulated the committee on being in advance in that respect of the Board of Education whose proposals were too narrow. The number of children in London requiring inspection was estimated at 220,000, and to inspect these a staff of 100 quarter-time medical officers was to be provided. Taking 100 quarter-time medical officers as equivalent to 30 full-time men (the quarter-time officers did rather more than a quarter of a week's work) and deducting one-fifth, or six medical officers, whose time would be taken up with other work—urgent cases, re-examinations, &c.—there remained 24 medical officers to do the work—not in a year, but before July 31st next. The Board of Education, in one of the gravest and most considered rebukes ever passed upon an education authority by a Government department, gave 7000 cases as the absolute maximum one medical man working full time could examine in a year, and the experience of Bradford and Surrey, after allowance had been made for difference of conditions, appeared to confirm this view. The figure 7000 multiplied by 24, the number of full-time school medical officers to which the Council's staff was equivalent, gave 168,000, leaving a deficit of over 50,000. Until Jan. 1st, 1911, only 72 quarter-time medical officers would be at work, so that this figure was an under-statement.

Mr. FRANK SMITH urged that the Council was not adequately following up medical inspection with treatment. By using the hospitals for giving treatment the Council was really doing a disservice to those institutions, because people were arguing that as hospitals were being subsidised out of the rates there was no need to give voluntary subscriptions. Thanks to the intervention of the Council poor people were being deprived of the free access to the hospitals they formerly enjoyed. Mr. Smith mentioned a case in which a parent on his own initiative sent his child to an ophthalmic hospital. The child was asked what school it attended, and a few days later the father received from the Care Committee a notice calling upon him to pay the cost of treatment on penalty of a fine or a term of imprisonment.

Mr. CYRIL JACKSON, chairman of the Education Committee, asked the Council to rely on the opinion of Dr. Kerr, who was the pioneer of medical inspection in this country, that the proposed staff was adequate. If the work did get behind, some of the inspection which the Board did not absolutely require the Council to carry out might be dropped temporarily, or a few extra medical officers could be appointed. As to quarter-time as compared with full-time medical officers, the quarter-time system was tried on the advice of the medical officer, who was of opinion that it enabled the Council to obtain the services of a large number of very able young medical men who could give part of their time while they were building up a practice. On the other hand, there were advantages in appointing full-time officers, and the question might be reconsidered whenever it was thought desirable.

An amendment requiring the Education Committee to submit definitely a supplementary estimate in order that the number of school medical officers might be increased was rejected by 62 votes to 45.

The Council then approved the scheme for extending medical inspection in the way proposed by the Education Committee, and for the rearrangement of the medical staff as follows: Three additional full-time assistant medical officers to be appointed, two as from Jan. 1st, 1911, and one as from Sept. 1st, 1911, each at a salary of £500 a year. From Sept. 1st, 1911, the present scheme for the appointment of part-time school medical officers to be abolished and to be superseded by the following scheme: 100 school medical officers to be employed, each at a salary of £120 a year, including travelling expenses; 25 medical officers to retire as from August 31st, 1912, and thereafter 25 yearly; the vacancies thus caused to be filled by the appointment of 25 medical officers yearly.

A decision regarding the letter from the Board of Education was postponed after an interesting debate which showed that the Council was perfectly prepared to revise its present system of medical inspection.

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[1] THE LANCET, August 6th, 1910, p. 424.
[2] Ibid.

HARVEIAN SOCIETY OF LONDON.—The annual dinner of this society will take place at the Café Royal, at 7 P.M., on Nov. 10th. Dr. M. Handfield-Jones, the President, will occupy the chair.

INTERNATIONAL CONGRESS OF RADIOLOGY AND ELECTRICITY, BRUSSELS.

THE opening meeting of the Congress was held in the Palais des Fêtes of the Exhibition on Sept. 13th. Professor DE HEEN, the President, thanked the King and the Government for the welcome they had extended to the Congress.

International Standard of Radium and Radio-activity.

Professor E. RUTHERFORD (Manchester) read his report on the Preparation of an International Standard of Radium. For this purpose the Congress nominated a provisional international committee composed of Madame Curie, Professor Rutherford, M. Boltwood, M. Soddy, M. Eve, M. Meyer, M. Halm, M. Meyers, M. Geitel, M. Schweidler, and M. Debierne, with the addition of M. Duane and M. Dane from Madame Curie's laboratory. This committee was instructed to report to the Congress on the last day of the session.

Mr. W. DEANE BUTCHER (London) presented to the Congress the report of the Standards Committee of the Roentgen Society, and a communication from the President, Mr. C. E. S. Phillips. He drew attention to the fact that an international standard of radio-activity was of equal importance to the radiologist and to the physicist, as the basis on which to found the dosage of X rays and the calibration of Roentgen tubes and apparatus.

The following was the report of the Standards Committee to the Congress: (i.) Madame Curie will prepare a standard of pure metallic radium containing about 20 milligrammes. (ii.) When the Standards Commission shall have reimbursed Madame Curie the standard shall be under the control of the committee for comparison with secondary standards. This standard shall be kept in Paris. (iii.) National scientific laboratories may procure secondary standards which have been compared with the international standard. (iv.) Smaller secondary standards may also be prepared with the approval of the committee. (v.) The emanation of radium being much used in scientific research the committee considers it desirable to adopt a unit of quantity of the emanation. In accordance with the proposition of the Congress the international committee recommends the name of "Curie" to be given to the quantity of the emanation equivalent to one gramme of metallic radium. The quantity of emanation in equilibrium with one milligramme of radium will be one millicurie. (vi.) The committee will study the question whether a special name should be given to a smaller quantity of radium and to the emanation in equilibrium with it. (vii.) As some members of the Standards Committee were absent these propositions are only provisional. A committee consisting of physicists and physicians was constituted to prepare the question for a future congress, and to determine the date and place of the congress, and was composed as follows:—Physicists: Madame Curie, Professor Rutherford, M. Van Aubel, M. Righi, M. Exner, M. Boltwood, M. Vershaffels, M. Vien, M. de Heen, and M. Daniel. Physicians: Mr. Deane Butcher, Dr. Bergonié, Dr. Bayet, Dr. His, Dr. Lester Leonard, Dr. Ludwig, and Dr. Hauchamps.

Madame Curie read a paper on the Preparation of Metallic Radium. She made use of the method described by M. Guntz for the preparation of metallic barium. The method consisted in preparing an amalgam and driving off the mercury by distillation in an atmosphere of pure hydrogen. The amalgam was obtained by the electrolysis of a solution of pure radium chloride (atomic weight, 226·5), using a cathode of mercury and an anode of platinum and iridium. Pure metallic radium is a brilliant white metal, fusing suddenly at 700°. It alters rapidly in air, becoming black from the formation of a nitride. It blackens paper when allowed to fall on it. It decomposes water, giving an energetic effervescence and itself disappears, thus showing that the oxide is soluble in water.

Section of Biology and Medical Radiology.

Presidents of Honour: Dr. Bergonié, Mr. Deane Butcher, Dr. Lester Leonard, Dr. Schiff, Dr. His, Dr. Miura, and Dr. Decref; Dr. Leon Hanchamps was nominated secretary.

Dr GUILLEMINOT read a paper on the Action of the New Radiations on the Development of Plants. He used 20 milligrammes of radium of activity 200,000 (2 milligrammes of pure radium) at a distance of 2 centimetres for times varying from several hours to two months.—In the discussion which followed Professor SCHIFF said he had only obtained negative results.—Dr. LÖWENTHAL considered that the different rays had a different biological influence.—Professor MIURA (Tokio) considered that the injurious action of radium on the living cells depended greatly on the time of exposure and the energy of the cells.—Dr. SUDGENT (Berlin) had found that sodium mono-urate was decomposed by radium *d*—i.e., by a decomposition product of radium.—Dr. HALM (Berlin) discovered that radium *d* emits soft β rays. Sodium mono-urate was not decomposed by the α and γ rays or by the ordinary β rays. Hence we had a means of differentiating the radiations by their chemical action.—Dr. KASPARI said the experiments of Köousche showed that a stimulation of the plantule was produced by the radium radiations. His own experiments showed the same results. The difficulty was to place the exact limit where the stimulating action ceased and was replaced by a depressing action. This was also of importance in the radium treatment of malignant tumours.

Dr. HARCKMAN of Toumai read a paper on the Ionic Theory in Biology.

Madame FABRE and Dr. OSTROWSKY (Paris) read papers on the Action of Radium on Toxins, and on the Inverse Action of Radium on various Species of Microbes.—Dr. JABOIN drew attention to the different units of radium dosage used in France and Germany respectively. In France the dosage was by weight—microgrammes of radium, whereas the German dosage by electrostatic units varied with the capacity of the electroscope employed. One-hundredth of a microgramme—i.e., a hundred-millionth of a gramme of pure radium—was capable of giving a quantity of emanation with a potential of 7000 volts.—Dr. WICKHAM drew attention to some experiments which he had made on the action of radium on staphylococci. He found that radio-active solutions in extremely small doses had a retarding effect greatly in excess of that produced by the direct rays of radium. The emanation of radium appeared to exercise a special action on cultures, a result which was in accordance with the therapeutic action of the emanation obtained by injecting soluble or insoluble preparations of radium into the substance of a tumour.

Dr. D'HALLUIN (Lille) contributed papers on (*a*) Injection of the Vascular System for Stereoscopic Radiography; (*b*) the Method of the Anaglyph for Stereoscopic Reproduction of Medical Photographs. Marey, Rémy, and Contremoulin were the first to inject the veins for purposes of skiagraphy, and to show the utility of stereoscopic radiography in the illustration of anatomical and medical subjects. The author showed a marvellous series of stereoscopic clichés of the injections of the upper and lower limb, the heart, the kidney, the lungs, and the circulation of the fœtus. The material used for injection was a suspension of vermilion in essence of turpentine. (In stereoscopic observation we are met with the impossibility of showing stereoscopic pictures on the screen. To obviate this, Ducos invented the method of anaglyphs—i.e., the projection of the right stereoscopic image in red and the left in green, the composite image being viewed through spectacles furnished with red and green glasses.)

Dr. FIRSSEL (Stockholm) read a paper on Gastric Terminology from the Radiological Standpoint. The division of the stomach into the pars cardiaca and pars pylorica was only an artificial one, since the position of the angle between the two portions was very inconstant. The real division should be into the stomach proper and the antrum pylori, since these were distinct organs both functionally and morphologically. The author gave to the first of these segments the name of saccus digestorius, and to the second canalis egestorius, Digestionsack and Entleerungskanal respectively. The three regions of the stomach, cupola, body, and base, he designated by the names fornix, corpus, and fundus. He also distinguished between the pars verticalis and the pars transversalis, although these had no morphological difference.

Dr. DECREG (Madrid) read a paper on the Diagnosis of Schlatter's Disease. Roentgen diagnosis had been of the greatest service in the diseases and injuries to the bones and joints of children. It was not uncommon to mistake the retardation of the joining up of the epiphysis at the end of the humerus for a fracture or a traumatism of the elbow. Still more important was the Roentgen diagnosis of the osseous centre forming the tuberosity of the tibia. This centre, which appears late in the course of development,

had been accurately studied by radiographic means, and the deformity which often occurred as a consequence of its malformation was known in Germany by the name of Schlatter's disease. It was usually brought under our notice in young patients of from 14 to 18 years of age, and was generally the result of over-exertion at football or of "pelote" in Spain.

Dr. LEVIN and Dr. BARRET (Paris) read a paper on the Radiological Exploration of the Stomach.—Professor HIS (Berlin) said that the time necessary to empty the stomach depended on the contents of the intestines and the habits of the individual. Kulbs had shown that the stomach of a well-fed animal was emptied much more rapidly than the stomach of an animal fed only every two or three days. In human pathology we often found false dilatation due to habitual constipation and the bad habit of eating a heavy meal once a day.

Mr. HEINZ BAUER (Berlin) read a paper on the Measurement of the Hardness of a Roentgen Bulb, and showed his electrostatic electrometer for measuring the voltage between the two electrodes of an X ray tube.—In the discussion Professor BERGONIÉ alluded to a series of experiences four years ago on the use of the electrometer for the measurement of the degree of hardness of the rays emitted by an X ray tube. In his laboratory the instrument of Hartmann and Braun had been used for over a year, but had to be abandoned in consequence of the cost.

Dr. AUBOURY read a paper on the Radiography of the Small Intestine.

Dr. LESTER LEONARD (Philadelphia) read a paper on Rapid Roentgenography of the Thorax and Abdomen, and showed some beautiful stereoscopic plates of the movement of the small intestines and of the stomach.

Professor MIURA (Tokio) read a paper on the Treatment of Painful Skin Affections by Radium.—In the discussion which followed Professor SCHIFF of Vienna drew attention to the cure by radium of pruritus, the result of neurodermatitis. Radium appeared to have a specific action on the nerves of sensation.

Dr. GUDZENT (Berlin) read a paper on the Action of Radium on the Uric Acid of the Organism, in which he stated that radium emanation when introduced into the organism behaved like an indifferent gas. When introduced by inhalation, ingestion, or injection it was almost entirely eliminated in a few minutes by the lungs. A very small quantity was eliminated by the kidneys. There was no cutaneous penetration or elimination. The emanation was transported by the blood to the cells of the organism, and there set up a biological action which was due partly to the emanation itself and partly to the products of its decomposition. Radium emanation could transform urate of soda into a more soluble substance, and even break it up into ammonia and carbonic acid. This influence was exerted by radium and by one of the products of decomposition of the emanation which had the property of giving off very soft β rays. This influence of the emanation of radium had been observed in animals as well as in man. The emanation of radium had an inhibitory effect on the movements of the leucocytes, and on the inflammatory processes, and an activating effect on organic ferments, but it had no bactericidal nor antitoxic action. The stimulating effects on ferments had been observed with autolytic and diastasic ferments, as well as the ferments which preside over the metabolism of the purins. In gout, a disease of faulty metabolism, the radium emanation was of great efficacy, facilitating the elimination of uric acid. In 13 out of 14 cases of gout the uric acid in the blood had disappeared as a result of treatment with the emanation.

Dr. CHEVRIER (Paris) read a paper on the Effects, General and Local, of Small Doses of Radium. The doses consisted of from 20 to 40 microgrammes of radium.—Dr. WICKHAM stated that he had obtained good results in lupus from radio-active solutions prepared by M. Jaboin. He had obtained better results, however, from injections of the insoluble salt. In a case of cancerous nodule of the breast he injected 12 centigrammes of a preparation of radium sulphate in paraffin vaseline containing 10 microgrammes per cubic centimetre. In other cases he injected solutions of a soluble salt containing 10 microgrammes per cubic centimetre. In these cases the radio-activity ceased in about four days. Some years ago he studied elimination by the urine after injection of radio-active mercurial solutions. The elimination was at a maximum on the first and second days, and completely disappeared after four days.

Dr. FORSSELL (Stockholm) read a paper on Experience in the Radium-therapy of Cancerous Tumours. The author had treated 38 cases of cancerous tumour at the Seraphina Hospital of Stockholm. Radium had an effect similar to but more efficacious than the X rays. In most superficial cancers of the skin the two methods were alike. In cancer of the lips and mouth radium was superior to X rays. In certain cases deeper subcutaneous tumours had disappeared where X rays had but little effect. The best results were obtained with Dominici's tubes embedded in the tumour. The pain of cancerous tumours might be relieved by radium entirely or in part.

Madame Dr. FABRE (Paris) and Dr. MAX EGGER (Geneva) communicated a paper on the Effect of Radium in a Case of Multiple Sclerosis. The patient was a syphilitic, 42 years of age, with fulgurating pains, abolition of the patellar reflex, and Argyll Robertson pupils. Three radium applicators with a lead filter were placed along the spine for 24 hours with great relief of the symptoms. After two more applications there was a further regression of the symptoms.

Dr. WICKHAM and Dr. DEGRAIS (Paris) communicated a paper on the Radium Treatment of Angioma.—Dr. D'HALLUIN (Paris) bore testimony to the marvellous effects of radium in these cures. He inquired if it were safe to apply the cross fire of two or more radium applications on the forehead. He himself had no fear of any injury to the brain. In the worst cases of hæmorrhagic nævus he had never had the least trouble from bleeding, although he had feared it and warned the friends of the possibility.—Madame Dr. FABRE had irradiated the brain and spinal cord in cases of syringomyelitis and other lesions of the nervous centres without any trace of ill-effect, in one case using 4 centigrammes of a radium preparation for 24 hours. There was no danger in irradiating the nervous system with large doses of radium, provided the radiations were filtered. The lesions, if any, were not in the nerve cells, but due to hæmorrhage from destruction of the endothelium of the vessels.—Professor BÉCLÈRE (Paris) believed there was no danger to the brain either from radium or Roentgen irradiation of the scalp when properly applied. Any ill-effects would be shown rather on the cartilaginous cells of the skeleton of the face and cranium which were not yet ossified.

Dr. KERNEN and Dr. NEUMANN (Kreuznach) read papers on the Exchanges in Gout under radio-therapeutic treatment and the absorption of the radium emanation.—Professor HIS (Berlin) drew attention to the negative results which had been obtained at the medical clinic of Berlin, results entirely opposed to those of Dr. Kernen.

During the Congress the Société Belge de Radiologie, which is a very strong one both in numbers and in *personnel*, held a meeting at which Mr. Deane Butcher made a communication on Auto-Immunisation by means by X Rays and Radium.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMITIA was held on Thursday, Oct. 27th, Sir THOMAS BARLOW, Bart., K.C.V.O., the President, being in the chair.

The following gentlemen having passed the required examination were admitted Members of the College: John Bright Banister, M.D. Camb.; Alexander Edward Gow, M.B. Lond., L.R.C.P.; Frederick Arthur Lucas Hammond, L.R.C.P., Major, I.M.S.; Henry Pratt Newsholme, M.B. Oxon.; Ernest Henry Shaw, L.R.C.P.; Cuthbert Allan Sprawson, M.D. Lond., L.R.C.P.

Licences to practise medicine were granted to 68 gentlemen who had passed the necessary examinations.

The PRESIDENT stated that at the celebration of the 400th anniversary of the birth of Dr. Caius, recently held at Cambridge, the President and other officials of the College were entertained at Caius College, and the hospitality there enjoyed was returned by inviting the Master and Fellows of Caius College to be present on the occasion of the Harveian oration and banquet. The President also stated that a copy of the portrait of Francis Glisson in the possession of the College had been presented to Caius College.

The PRESIDENT announced that the Jenks Scholarship had been awarded to Mr. Gerald Gibbons.

The following communications were received: 1. From the Home Office respecting an International Congress for the Amelioration of the Condition of the Blind, to be held at Cairo in February next. 2. From the Secretary of the Royal College of Surgeons of England. 3. From Dr. Herbert French, offering on behalf of the medical staff of Guy's Hospital to present to the College a portrait of Sir Samuel Wilks. The gift was accepted with acclamation, and the thanks of the College were ordered to be returned to the donors.

A report was received from Dr. Amand Routh, representative of the College at the International Congress of Obstetrics and Gynæcology held in St. Petersburg in September last.

The audited accounts of the College for the year ending Sept. 29th were laid before the Comitia and adopted.

The quarterly report of the College Finance Committee was received and adopted.

Dr. F. W. Andrewes was re-elected a member of the Executive Committee of the Imperial Cancer Research Fund, and Dr. Frederick Taylor was re-elected a member of the Committee of Management.

A report from the Committee of Management, dated Oct. 4th, 1910, was received and adopted. Amongst the matters dealt with in the report the committee recommended:

(*a*) That a candidate who has passed the first examination for the degree of B.Sc. of the University of the Cape of Good Hope with a standard of not less than 50 per cent. be exempted from the first examination of the Conjoint Board in chemistry, physics, and biology.

(*b*) That the course of laboratory instruction in public health given by an officer of the Royal Army Medical Corps in the laboratory of the Sanitary Commission, Gibraltar, be recognised for the Diploma in Public Health, provided that the officer conducting the course is in possession of a Degree or Diploma in Public Health.

(*c*) That the course of laboratory instruction in public health given at the South African College, Capetown, be recognised for the Diploma in Public Health.

(*d*) That attendance on the practice of the City Fever Hospital, Capetown, at which instruction in the methods of administration is given, be recognised for the Diploma in Public Health.

After other formal business had been transacted, the PRESIDENT dissolved the Comitia.

MEDICINE AND THE LAW.

Two Cases under the Workmen's Compensation Act.

THE efforts of the workman to obtain compensation in excess of that to which he may be entitled are well known to medical practitioners. Two recent cases in which "accidents" were held not to come within the provisions of the Act may be cited, although no point of medical interest arises in them, in order to show the nature of the claims that are made against employers, and which they, or the insurance companies, are put to expense in resisting. Both were heard in metropolitan county courts on the same day—Oct. 27th. In the first, at Whitechapel, the workman, employed as a billiard-marker and potman at a hotel, went to bed on the third floor of the building, after the hotel had been duly closed for the night. A disturbance took place in the street outside, and in order to see what was going on, and, as he alleged, in order to prevent injury to his master's property, such as might occur if windows were broken by two women whom he had ejected earlier in the evening, he leaned out of window. In doing this he overbalanced himself and fell, sustaining severe injuries. In the other case mentioned the workman was injured in a quarrel with a fellow workman. His honour Judge Emden appears to have suggested that if there had been evidence that the quarrel arose out of something connected with the employment it might be different, but he, like Judge Bacon in the first case referred to, declined to hold that injuries received as described entitled the applicant to recover compensation on the ground that they were due to accidents arising out of, and in the course of, his employment.

A County Court Judge upon Sanitary Precautions.

At the Gainsborough county court recently a debtor sought to excuse himself from compliance with an order to pay 4*s.* a month on the ground that he was out of work and could not therefore obey. Upon this the county court judge, Sir Sherston Baker, inquired why he was out of work, and received an answer to the effect that the debtor was a jobbing joiner and that members of his family had recently been ill with scarlet fever, so that for a time the sanitary authority had warned him that he would lay himself open to legal proceedings if he entered other people's houses in order to work there. The comment of Sir Sherston Baker is thus reported in the *Daily Telegraph*: "I never heard of such a thing. What right have they to stop a man working without compensating him? Look at the doctors; they go from house to house, visiting fever cases, and are not afraid of going home to their families. They go visiting all manner of sick. Take an action against them; it would serve them jolly well right." Comment upon this judicial utterance is hardly necessary, unless wonder is expressed as to whether the advice given has been followed by its recipient.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

A MEETING of the Organising Committee was held on Oct. 28th in the Royal College of Physicians of London, the President, Sir THOMAS BARLOW, being in the chair.

Letters of regret were received from the following: Dr. T. Dyke Acland, Professor H. G. Barling, Sir James Barr, Dr. Barrs, Mr. George A. Berry, P.R.C.S. Edin., Dr. J. Mitchell Bruce, Sir John Byers, Dr. P. J. Cremen, Sir Halliday Croom, Dr. H. Davy, Professor D. W. Finlay, Dr. J. Magee Finny, Sir Thomas R. Fraser, Dr. Edwin Goodall (Cardiff), Mr. J. W. B. Hodsdon, Professor James Little, Professor H. Littlejohn, Sir Donald MacAlister, Professor Dixon Mann, Professor Howard Marsh, Sir Isambard Owen, Dr. R. W. Philip, Sir G. H. Philipson, Sir Richard Douglas Powell, Mr. J. Scott Riddell, Mr. A. W. Mayo Robson, Dr. F. M. Sandwith, Professor R. Saundby, Professor T. Sinclair, Sir W. Smyly, Professor E. H. Starling, Dr. StClair Thomson, Professor W. Thorburn, and Dr. Norman Walker.

The PRESIDENT pointed out that the list of the Organising Committee was originally drawn up with a view to territorial representation only. At the meeting of the General Committee on Oct. 12th a wish was expressed, and partially carried out, that it should represent also departments of practice. In order to fulfil this wish the following additional members were nominated for election: Miss Aldrich-Blake, Dr. F. W. Andrewes, Dr. J. B. Ball, Dr. Lazarus-Barlow, Dr. J. S. Barr, Dr. E. F. Bashford, Dr. A. E. Boycott, Dr. H. G. Brooke, Dr. W. Bulloch, Mr. Arthur Cheatle, Miss Cock, Mr. Treacher Collins, Mr. A. E. Cumberbatch, Sir W. Dalby, Professor G. Dean, Professor A. F. Dixon, Mr. Dudgeon, Dr. Colcott Fox, Dr. Galloway, Dr. Garrod, Dr. Albert Gray, Dr. Dundas Grant, Professor Greenfield, Dr. de Havilland Hall, Dr. E. Hobhouse, Mr. W. H. H. Jessop, Mr. Robert Jones, Mr. Reginald Jowers, Dr. Lambert Lack, Mr. Richard Lake, Dr. Edward Law, Mr. J. B. Lawford, Lieutenant-Colonel Sir W. B. Leishman, Mr. H. Littlewood, Professor Alexander MacAlister, Dr. P. McBride, Sir John MacFadyen, Dr. C. J. Martin, Dr. W. Milligan, Dr. F. W. Mott, Dr. D. R. Paterson, Dr. F. M. Pope, Dr. J. J. Pringle, Dr. Urban Pritchard, Professor Arthur Robinson, Mrs. Scharlieb, Mr. S. G. Shattock, Professor Sherrington, Professor Lorrain Smith, Mr. Priestley Smith, Dr. G. F. Still, Dr. G. A. Sutherland, Mr. H. H. Taylor, Professor Peter Thompson, Professor W. H. Thompson, Dr. StClair Thomson, Miss Thorne, Dr. Herbert Tilley, Miss Jane Walker, Dr. Watson Williams, Professor Sims Woodhead, and Sir Almroth Wright, and these were unanimously elected with power to add to their number.

The PRESIDENT then nominated the following for election as members of the Executive Committee:—Sir A. Pearce Gould (chairman), Sir Clifford Allbutt, Sir W. Allchin, Mr. A. A. Bowlby, Sir Francis Champneys, Sir W. Church, Dr. Bertrand Dawson, Mr. Clinton Dent, Mr. R. J. Godlee, Dr. Norman Moore, Sir Malcolm Morris, Professor Osler, Dr. Pavy, Sir R. Douglas Powell, Mr. D'Arcy Power, Sir Felix Semon, Mr. Charters Symonds, Dr. Hale White, the Chairman of the Finance Committee, the Chairman of the Reception Committee, the Chairman of the Council of the British Medical Association, a member to be nominated by the Faculty of Medicine of each of the universities,

excluding Oxford and Cambridge (which are already represented), viz. :—England, Universities of Birmingham, Bristol, Durham, Leeds, Liverpool, Manchester, and Sheffield; Scotland, Universities of Aberdeen, Edinburgh, Glasgow, and St. Andrews; Ireland, University of Belfast, Trinity College, Dublin, and the National University of Ireland; and Wales, University College, Cardiff.

Sir A. PEARCE GOULD proposed, and Mr. D'ARCY POWER seconded, the addition of Mrs. Scharlieb to this committee. These members were unanimously elected, with power to add to their number.

The PRESIDENT then stated that Sir Dyce Duckworth had consented to act as the second treasurer with Mr. Makins, and he nominated the following as members of the Finance Committee: Sir Henry Morris (chairman), Dr. Herbert Spencer, Dr. Frederick Taylor, Sir Edgcombe Venning, and Mr. E. Francis White (Putney). These were unanimously elected with power to add to their number.

The PRESIDENT then nominated the following for election to the Reception Committee: Sir T. Lauder Brunton (chairman), Mr. A. E. Barker, Sir W. H. Bennett, Sir Havelock Charles, Sir Anderson Critchett, Sir Thomas Boor Crosby, Mr. Edmund Owen, Dr. Pasteur, Dr. StClair Thomson, Dr. Samuel West, and Dr. Theodore Williams, with power to add to their number.

The permanent officers of the Congress are *ex-officio* members of all committees.

The PRESIDENT then said a few words on the organisation of the various committees. The Executive Committee was intended (*a*) to manage local matters; (*b*) to act as a board of advisers to the President; and (*c*) to receive and consider reports from the Finance Committee, the Reception Committee, and the various sectional committees when appointed. It was to be understood that when the business of a section or sections was to be discussed the President of such section or sections would be summoned to the meeting of the Executive Committee. It might be necessary, in the view of any general regulations being drawn up, that all Presidents of sections should be so summoned. The Organising Committee was intended to act (*a*) when summoned as a whole as the ultimate committee of reference, and of election to appointments of presidents, vice-presidents, secretaries, and councils of sectional committees; and (*b*) to be the source from which special committees could be drawn if necessary to advise and report on matters pertaining to the organisation of the several sections.

The Organising Committee then adjourned.

THE SERVICES

ROYAL ARMY MEDICAL CORPS.

THE undermentioned Captains to be Majors (dated Oct. 28th, 1910):—John E. Hodgson, Matthew H. G. Fell, William B. Winkfield, Jonas W. Leake, John W. H. Houghton, George M. Goldsmith, Richard H. Lloyd, John M. Sloan, D S.O., Harry D. Packer, Lawrence Humphry, Arthur O. B. Wroughton, and Frank Ashe.

Lieutenant Wilfred W. Treves, from the Seconded List, is restored to the establishment (dated August 27th, 1910).

Lieutenant Charles V. Nicoll to be Captain (dated Nov. 1st, 1910).

Frederick William Lumsden to be Lieutenant (on probation) (dated Oct. 13th, 1910).

Colonel M. W. O'Keefe, from Rawal Pindi, has taken over the duties of Inspector of Medical Services at the Horse Guards, Whitehall. Lieutenant-Colonel F. W. C Jones, at present serving at Tidworth Park, has been placed under orders for the Fourth (Quetta) Division. Lieutenant-Colonel C. Birt, on return from special service at Malta, has been appointed to the Dublin District and posted to the medical charge of the Royal Infirmary, Phœnix Park. Lieutenant-Colonel B. McCreery has been appointed to the medical charge of the troops and their families at Perth. An exchange on the roster for service abroad has been sanctioned by the War Office between Lieutenant-Colonel C. W. Johnson and Lieutenant-Colonel S. G. Allen. Lieutenant-Colonel G. F. Gubbin has arrived home from Colaba, India, on leave. Major F. S. Penny has embarked for a tour of service in South China. Captain A. W. Sampey has been transferred from Colchester to Warley. Captain A. C. Adderley on the termination of his course for promotion at the Royal Army Medical College, London, has been posted for duty to Lichfield. Captain P. H. Henderson, from Portsmouth, has joined at Ibsley Camp. Captain F. E. Rowan-Robinson has been granted leave on medical certificate from Colchester. Captain R. B. Ainsworth has been appointed to Cosham from the Royal Army Medical College, London. Captain J. H. Douglass, on completion of duty at Maryborough Heath Camp, has been posted to the Dublin District. Captain A. Hopping has been appointed a Specialist in Radiography and Electrical Science to the First (Peshawar) Division of the Northern Army in India. Captain S. M. Adye-Curran, from Bere Island, has joined at Queenstown. Captain H. T. Stack, from Finner Camp, has been appointed to Belfast. Captain H. Harding, from Churn Camp, has taken up duty at Tidworth Camp. Lieutenant F. H. Somers-Gardner has been transferred to Hilsea, from Rowlands Castle. Lieutenant R. C. G. M. Kinkead, from Cork, has joined at Ballyvonare Camp. Lieutenant T. W. Stallybrass, from Netley, has been appointed to Tidworth Camp.

ROYAL ARMY MEDICAL CORPS EXAMINATION.

An examination of candidates for not less than 15 commissions in the Corps will be held on Jan. 25th, 1911, and following days. Applications to compete should be made to the Secretary, War Office, London, S.W., not later than Jan. 16th. The presence of candidates will be required in London from Jan. 23rd.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel R. H. Castor, civil surgeon of Mandalay, has been granted six months' leave on account of ill-health, with effect from the date he was relieved by Major A. Fenton. The services of Major D. H. M. Graves, Madras Presidency, have been placed at the disposal of the Home Department of the Government of India. Major E. Wilkinson has been confirmed in the appointment of Sanitary Commissioner of the Punjab. Major J. H. Hugo, agency surgeon in Bundelkhand, has been granted six weeks' privilege leave. The services of Captain H. M. Mackenzie, medical officer of health, Simla, have been placed temporarily at the disposal of the Government of Bengal. Captain J. S. Babonau has been selected for plague duty in the Punjab. Captain B. S. Mehta, assistant plague medical officer at Amritsar, has been appointed District Plague Medical Officer at Jhelum. Captain J. W. H. Babington has been appointed to the substantive medical charge of the 76th Punjabis. Captain M. J. Quirke has joined the Civil Medical Department of Madras Presidency. On return from leave Captain J. J. Robb has been detailed to act as Superintendent of the Central Jail at Vellore. Captain C. F. Weinman has been granted three months' extension of his leave by the Secretary of State for India. Captain P. S. Mills has been appointed a Specialist in Radiography and Electrical Science to the Fifth (Mhow) Division of the Southern Army, India. Captain J. A. S. Phillips has been appointed to officiate as Civil Surgeon at Jacobabad. Captain W. P. G. Williams has been posted to Madras Presidency for employment in the Jail Department, and has been appointed to the Central Jail at Coimbatore for a course of instruction. Captain W. S. Patton, of the Madras Civil Medical Department, has been placed on special deputation duty connected with investigations into the occurrence of Delhi sore. Lieutenant A. J. Lee has been appointed to the Officiating Medical Charge of the 3rd Brahmans. Lieutenant F. A. Barker has been appointed Superintendent of the Cellular and Female Jails and Civil Surgeon at Port Blair. Lieutenant G. G. Jolly has been appointed a Specialist in Radiography and Electrical Science to the Fourth (Quetta) Division of the Southern Army, India.

SPECIAL RESERVE OF OFFICERS.

THE undermentioned Lieutenants are confirmed in their rank:—Duncan Macfadyen and Charles M. Page.

William Leckie Webster to be Lieutenant (on probation) (dated Oct. 4th. 1910).

TERRITORIAL FORCE.

Royal Army Medical Corps.

4th Southern General Hospital: The appointment of Lieutenant-Colonel Charles E. Russell Rendle and of Major Henry W. Webber is antedated to Sept. 29th, 1908.

Attached to Units other than Medical Units.—Major Richard J. M. Coffin resigns his commission (dated Oct. 29th, 1910).

ARMY MEDICAL RESERVE.

The undermentioned Lieutenants to be Captains (dated Nov. 1st, 1910):—John F. Murphy, Samuel K. Adams, and Murray R. Taylor.

ROYAL ARMY MEDICAL COLLEGE.

Mr. Haldane distributed the prizes at the Royal Army Medical College, Millbank, on Oct. 29th. After paying a tribute to the building itself and the excellent equipment of the Royal Army Medical College, which was largely due to the work of his predecessor, Lord Midleton, who, as Mr. Brodrick, threw himself wholeheartedly into the work of raising the Army Medical Department to a higher standard of excellence, he, Mr. Haldane, referred to the experiments which had been made with regard to physical training and endurance, and said that we now knew exactly what the rations of the British soldier fighting under emergency conditions must be in order to sustain him in strength and health. With regard to the new clothes equipment, that was also the outcome of modern physiological science. Very great progress had been made in the reduction of disease in the army, particularly in India, and the whole work of the Army Medical Department had vastly improved in recent years. There was a time when this department did not contribute to science in any large degree, but its modern organisation gave scope for every kind of talent. He instanced the names of Sir William Leishman, Sir David Bruce, and Sir Almroth Wright in connexion with the important bacteriological work done by the Medical Department of the army, and after referring to the importance of physiological work, concluded by reminding his hearers that what was needed was exact knowledge, and if that were obtained the money spent on equipping and maintaining the college, which was one of the most important parts of the British army, would be saved over and over again. The following is a list of the prize-winners:—Lieutenant W. W. Treves, R.A.M.C., first Montefiore prize (first in military surgery), Parkes memorial prize (first in hygiene), Marshall Webb prize (military medical administration), Herbert prize for the highest aggregate; Lieutenant H. E. Shortt, I.M.S., second Montefiore prize—second in military surgery; Lieutenant R. C. Clifford, I.M.S., Fayrer memorial prize—pathology; Lieutenant C. H. H. Harold, R.A.M.C., Tulloch memorial prize (pathology), Ranald Martin prize (tropical medicine); Lieutenant R. F. Bridges, R.A.M.C., De Chaumont prize—second in hygiene. It is interesting to note that Lieutenant Treves is a nephew of Sir Frederick Treves.

DEATHS IN THE SERVICES.

Surgeon-Colonel F. H. Welch, A.M.D. (retired), at his residence, Southborough, Kent, aged 71 years. He entered the service as assistant surgeon in 1861, became surgeon in 1873, surgeon-major in 1876, brigade-surgeon in 1886, and retired with the rank of surgeon-colonel in 1895. He served in the Egyptian War of 1882 and was present at the battle of Tel-el-Kebir (medal with clasp and Khedive's star). He also served with the Nile Expedition in 1884–85. Surgeon-Colonel Welch was distinguished for his professional (medical) attainments and writings on various subjects, and won the Alexander prize medal in 1873 and again in 1882. His contributions on enteric fever, military ophthalmia, and especially on aortic and arterial disease in connexion with syphilis may be mentioned as excellent. He was a frequent contributor to THE LANCET.

THE LATE MISS FLORENCE NIGHTINGALE.

At a meeting held at Grosvenor House on Oct. 28th, under the presidency of Lord Charles Beresford, M.P., a committee was formed with the object of considering the various projects recently put forward to perpetuate the memory of the late Miss Florence Nightingale. The committee will consist of Mr. Haldane, Lord Crewe, Lord Pembroke, Lord Selborne, Lord Charles Beresford, Sir Thomas Barlow, Sir J. Dimsdale, Sir W. Treloar, Mr. H. T. Butlin, Mr. J. H. Shore Nightingale, and Miss McCaul, with power to add to their number.

At a meeting held in the Court Room at St. Thomas's Hospital on Nov. 1st it was decided that a fund for providing a memorial to Miss Florence Nightingale, O.M., should be established and that contributions should be invited from all parts of the Empire. Part of the memorial will take the form of a statue.

THE LATE HENRI DUNANT.

M. Henri Dunant, the founder of the International Red Cross Association, died recently at Heiden, in Switzerland, at the age of 82. Profoundly influenced by the work of Harriet Beecher Stowe, Florence Nightingale, and Elizabeth Fry, he organised an ambulance service to deal with the wounded at Solferino, and started the campaign at Geneva, then looked upon as utopian, which led to the formation of the Geneva Conference of 1863. In the following year 12 Powers signed the famous convention "for the amelioration of the condition of soldiers wounded on the battlefield." He received the Nobel Peace Prize in 1901.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8104 births and 4222 deaths were registered during the week ending Oct. 29th. The annual rate of mortality in these towns, which had been equal to 13·1 and 13·0 per 1000 in the two preceding weeks, was again 13·0 in the week under notice. During the first four weeks of the current quarter the death-rate in these towns averaged 13·0 per 1000. In London the death-rate during the same period, calculated on the probably over-estimated population, did not exceed 12·7 per 1000. The lowest reported annual death-rates last week in these 77 towns were 5·1 in Leyton, 5·8 in Hornsey, 7·0 in East Ham, and 7·5 in Willesden, all metropolitan suburban districts with probably over-estimated populations; the rates in the other towns ranged upwards to 18·7 in Stoke-on-Trent, 19·2 in Oldham, 21·6 in Newport (Mon.), and 23·1 in Tynemouth. In London the reported death-rate last week did not exceed 12·9 per 1000. The 4222 deaths from all causes registered in the 77 towns last week were within 9 of the number returned in the previous week, and included 425 which were referred to the principal epidemic diseases, against 504 in each of the two preceding weeks; of these 425 deaths, 184 resulted from diarrhœa, 107 from measles, 42 from diphtheria, 35 from whooping-cough, 30 from enteric fever, and 27 from scarlet fever, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the 77 towns last week was equal to 1·3 per 1000, against 1·6 in each of the two previous weeks. No death from any of these diseases was registered last week in East Ham, Wolverhampton, King's Norton, Ipswich, or in 9 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·1 in Preston, 3·2 in Brighton, and 3·7 in Northampton and in Tynemouth. The deaths attributed to diarrhœa in the 77 towns, which had declined in the eight preceding weeks from 527 to 296, further fell last week to 184; the highest annual rates from this cause in the 77 towns last week were 2·0 in Merthyr Tydfil and 2·1 in Warrington. The fatal cases of measles, which been 51 and 75 in the two previous weeks, further rose last week to 107, and exceeded the number returned in any week since the beginning of July; they caused the highest annual rates, 1·5 in Stockport, 1·6 in Brighton, and 2·8 in Tynemouth. The 42 deaths referred to diphtheria corresponded with the number in the previous week, and included 11 in London and its suburban districts, 3 in Norwich, and 3 in Cardiff. The fatal cases of whooping-cough, which had been 49, 47, and 37 in the three preceding weeks, further declined to 35 last week, but showed an annual rate equal to 1·6 per 1000 in Northampton. The 30 deaths referred to enteric fever exceeded by 2 the number in the previous week; 14 occurred in London and its suburban districts, and 2 both in Stoke-on-Trent and in Salford. The 27 fatal cases of scarlet fever exceeded the number in the previous week by 1, and included 9 in Liverpool, 3 in Birmingham, and 2 both in Manchester and in Walsall. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily increased in the ten preceding weeks from 1423 to 1792, had further risen to 1847 on Saturday last; 221 new cases of this disease were admitted to these hospitals during last week, against 245, 234, and 231 in the three preceding weeks. The 1209 deaths from all causes in London last week included 234 which were referred to pneumonia and other diseases of the

respiratory system, against 162 and 194 in the two previous weeks, and exceeded by 25 the corrected average number in the corresponding week of the five years 1905–09. The causes of 31, or 0·7 per cent., of the deaths registered during last week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Sheffield, West Ham, Bradford, Hull, Salford, Portsmouth, and in 50 other smaller towns; the 31 uncertified causes of death in the 77 towns included 7 in Liverpool, and 2 each in Birmingham, Grimsby, Nottingham, Burnley, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 839 births and 460 deaths were registered during the week ending Oct. 29th. The annual rate of mortality in these towns, which had been equal to 12·9 and 13·0 per 1000 in the two preceding weeks, declined to 12·7 in the week under notice. During the first four weeks of the current quarter the death-rate in these eight towns averaged 13·3 per 1000, and exceeded by 0·3 the mean rate during the same period in the 77 largest English towns. The annual death-rates in the eight Scotch towns last week ranged from 8·1 and 11·1 in Aberdeen and Paisley, to 14·2 in Greenock and 15·4 in Perth. The 460 deaths from all causes in the eight towns last week showed a decline of 10 from the number returned in the previous week, and included 48 which were referred to the principal epidemic diseases, against numbers declining from 83 to 47 in the four preceding weeks; of these 48 deaths, 25 resulted from diarrhœa, 7 from scarlet fever, 6 from diphtheria, and 3 from "fever," but not one either from measles or small-pox. The mean annual rate of mortality from these epidemic diseases in the eight towns last week was equal to 1·3 per 1000, and corresponded with the rate from the same diseases in the 77 English towns. The deaths attributed to diarrhœa in the Scotch towns, which had declined in the four preceding weeks from 51 to 25, were again 25 last week; they included 11 in Glasgow, 4 both in Edinburgh and in Dundee, 3 in Aberdeen, and 2 in Greenock. The 7 fatal cases of scarlet fever showed an increase upon recent weekly numbers; 2 occurred both in Glasgow and in Perth. The deaths referred to diphtheria, which had been 15 and 13 in the two previous weeks, declined last week to 7, of which 3 were returned in Glasgow and 2 in Paisley. Four of the 6 fatal cases of whooping-cough (an increase of 2 upon the number in the previous week) occurred in Glasgow. Of the 3 deaths referred to "fever," 2 were certified as enteric fever and 1 as cerebro-spinal meningitis; 2 were returned in Glasgow and 1 in Perth. The deaths referred to diseases of the respiratory system in the eight towns, which had been 69 and 80 in the two preceding weeks, declined again last week to 72, but exceeded by 4 the number in the corresponding week of last year. The causes of 18, or 3·9 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death last week did not exceed 0·7 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 569 births and 372 deaths were registered during the week ending Oct. 29th. The mean annual rate of mortality in these towns, which had been equal to 15·9, 16·9, and 17·4 per 1000 in the three preceding weeks, declined again to 16·8 in the week under notice. During the first four weeks of the current quarter the annual death-rate in these Irish towns averaged 16·8 per 1000; the mean rate during the same period did not exceed 13·0 in the 77 largest English towns and 13·3 in the eight principal Scotch towns. The annual death-rate during last week was equal to 16·6 in Dublin, 15·3 in Belfast, 17·1 in Cork, 21·6 in Londonderry, 21·9 in Limerick, and 13·6 in Waterford; the mean annual death-rate last week in the 16 smallest of these Irish towns was equal to 19·5 per 1000. The 372 deaths from all causes in the 22 town districts last week showed a decline of 12 from the number in the previous week, and included 33 which were referred to the principal epidemic diseases, against 31 and 42 in the two preceding weeks; these 33 deaths were equal to an annual rate of 1·5 per 1000, the rate from the same diseases last week being 1·3 both in the 77 English towns and in the eight Scotch towns. The 33 deaths from these epidemic diseases in the Irish towns last week included 20 from diarrhœa, 3 each from measles, whooping-cough, diphtheria, and enteric fever, and 1 from scarlet fever, but not one from small-pox. The 20 deaths attributed to diarrhœa corresponded with the number in the previous week, and included 10 in Belfast, 3 in Dublin, and 2 both in Limerick and in Clonmel. The 3 fatal cases of measles occurred in Portadown, and the 3 of diphtheria in Dublin. One death each from scarlet fever, whooping-cough, and enteric fever were also returned in Dublin; and the other two deaths from enteric fever occurred in Belfast and Cork. The deaths in the 22 towns last week included 66 which were referred to pneumonia and other diseases of the respiratory system, against 66 and 63 in the two preceding weeks. The causes of 14, or 3·8 per cent., of the deaths registered last week in the Irish towns were not certified; in the 77 English towns the proportion of uncertified deaths last week did not exceed 0·7 per cent., while in the eight Scotch towns it was equal to 3·9per cent.

Correspondence.

"Audi alteram partem."

REPORT ON THE MEASURES TAKEN AGAINST MALARIA IN THE LAHORE (MIAN MIR) CANTONMENT.

To the Editor of THE LANCET.

SIR,—In your issue of Oct. 29th you deal with this publication, which is the report of a Committee appointed by the Government of India in October, 1909, to investigate a so-called experiment which has been carried out for several years to test the practical applicability of mosquito reduction. The report is now under exhaustive analysis; but, as it may injure the cause of sanitation among those who are not acquainted with such matters, I trust that you will kindly publish the following summary of the criticisms which I have to make regarding it.

1. In paragraph 11 of the report, the object of the experiment is described as being to test the doctrine that malaria can be banished by mosquito reduction anywhere at very little cost. This absurd proposition is fixed upon me by means of quotations taken from my writings and separated from their context. What I taught was that mosquito reduction may be comparatively easy and inexpensive under very favourable circumstances; and this has proved to be the case at Ismailia, Athens, and other places.

2. In paragraph 10 the committee give the misleading impression that Mian Mir was selected for the experiment only after a careful review of other stations in India. As a matter of fact, the gentlemen who chose it had spent only a few months in India, and were directed to Mian Mir from Simla. The place proved to be an exceptionally difficult one, because it is absolutely flat, has an impervious subsoil, and becomes practically a large marsh during the rains.

3. The first operations of 1902–03 were destructively criticised by several writers, including myself.[1] But the Committee accept the soundness of the work without attempting to answer our objections.

4. More extensive measures were adopted under General Kitchener in 1904–05, by cutting off the irrigation system and filling in pits and depressions; but the Committee fail to demonstrate the essential point—namely, whether anything approaching the same thoroughness was shown during the four years from then up to the date of their visit in 1909. On the other hand, they admit that the work was incomplete; that "the military authorities dealt only with breeding places lying within the inhabited portion of the cantonment or situated fairly closely to it"; and that the officers

[1] Brit. Med. Jour., Dec. 17th, 1904, and Journal of the Royal Army Medical Corps, August, 1904, and July, 1905.

employed frequently complained of the inadequacy of the working staff, especially during the rainy (i.e., the malaria) season. They omit to give exact details, month by month and year by year, of the number of men employed and the work actually done, even during the year of their visit. They describe the large use made of military labour, but I gather that this was employed only in 1904–05. They state that an "immense amount has been done to abolish the breeding places of *Anopheles* mosquitoes," but give no figures as to the approximate degree of the sterilisation—was it a quarter, a half, or three-quarters? They did not make their visit until a month after the rains had ceased—that is, at a time when they could not possibly have observed fully for themselves the incompleteness of the measures (though even then breeding places remained). Their evidence was therefore mostly obtained from witnesses whose statements are not given *verbatim*. On the other hand, a writer who has recently visited the place says[2] that "no attempt whatever is made to prevent the establishment of breeding places within the courts of the houses," and that, "excellent as they are, the measures hitherto adopted are by no means complete, and cannot be taken as any indication of the final potentialities of anti-malarial sanitation in the locality."

5. Exact accounts of the expenditure, month by month and year by year, would have revealed the sufficiency of the operations—or, perhaps, their great insufficiency during recent years. The Committee state, however, that they cannot "give even an approximate estimate of the total cost of the operations." Yet this was supposed to be a practical experiment! Surely they might have furnished the details for the year or two preceding their visit. We learn that Rs.33,849 (about £2256) were spent in connexion with the operations of 1904–05, mostly on obliterating the irrigation system. This was a measure of doubtful utility, since an excellent irrigation system is now maintained without mosquito breeding at Ismailia, so that it is open to question whether most of this expenditure with its contingent loss of revenue (not clearly given) should be included in the bill. The reform of the surface drainage in 1905 cost Rs.40,000 (£2666), but much of this was required for ordinary sanitary purposes. All we are clearly told is that "from 1906–1907 onwards a total sum of Rs.14,594 has been spent from cantonment funds on various anti-malarial operations"—no exact details. We learn, however, from Colonel Rowan, R.A.M.C., who actually supervised the work, that "the diversion of the canal entailed a loss of revenue to the cantonment fund of about Rs.6000 yearly, and the actual filling in of the canal cuttings and the digging of wells to replace them, together with some minor sanitary improvements, cost about Rs 15,000. Since 1905 the cantonment fund has granted annually Rs.1000 for anti-malarial work."[3] Hence it appears that since 1905 the princely sum of £66 a year was allowed for the work. This, be it remembered, for a difficult country of eight square miles occupied by five regiments and a total population of 16,000 people! The sum amounts to 1 anna (about 1*d.*) per head of population and 1·7 per cent. of the annual income of the cantonment (Rs.60,000), and explains the inadequacy of the working staff complained of by the local officers (who, I should add, were not in any way to blame for it). Would any practical sanitarian admit that any disease like malaria could be eradicated from such a place for such a sum? The whole thing is not a fair test of my proposals and amounts to nothing more than a travesty of them.

6. Nevertheless, wonderful to relate, as shown by Chart I. of the report, the statistics demonstrate an extremely low malaria-rate among the troops, especially during 1904–07, when the operations were most thoroughly conducted. The Committee attempt to parry this fact by arguing that a similar decline has occurred in other stations, especially Amritsar, where they say anti-malarial operations have not been adopted "on a large scale." But they did not visit these places and give no facts to prove that no anti-malarial operations were adopted in them. I am therefore free to maintain, pending further and more reliable analysis, that the general improvement, including that at Mian Mir, was due to precisely similar partial measures carried out by the military—namely, improved drainage, partial mosquito reduction, and partial quinine prophylaxis. If they prove anything (which is doubtful), the Committee's facts prove just the opposite to their conclusions—they suggest that the trifling expenditure of 1 anna per head has been at least accompanied at Mian Mir by an exceptionally low malaria-rate.

The Committee's figures will be much criticised. They omit to describe changes among the bodies of troops and the effect of the outlying post of Fort Lahore, said to be an intensely malarious spot. Both of these factors should largely increase the malaria-rate at Mian Mir. The figures for the native population cannot be accepted without consideration of many factors not mentioned in the report. Deaths and invalidings among the troops are not given.

7. It will be agreed that for a cost of 1 anna a head no sweeping reduction of mosquitoes and malaria, such as occurred at Ismailia, could be expected, especially just after a heavy rainy season. The Committee's own efforts (lasting six days) to measure the variation by means of the most grotesquely insufficient random sampling are not capable of detailed examination in this brief review. For example, in the British Infantry Bazaar, enlarged spleen was found in 20 out of 25 children examined in 1901, and in 17 out of 24 children examined in 1909. They gravely put down (p. 31) the corresponding percentages as being 80 per cent. and 71 per cent. respectively, and then argue that this shows no great reduction. But the statistical errors are respectively 22 per cent. and 26 per cent., so that the variation may have been anything from an increase of 39 per cent. to a decrease of 65 per cent., and in the latter case the reduction would have been very great. Similarly with the other samplings, and, owing to close localisation of malaria and to the neglect of the courts of the houses just mentioned, each sample must be taken by itself. The Committee are so oblivious of these matters that they sometimes omit even to give the actuals at all. In 1904 I exposed the utter untrustworthiness of these methods and those employed for estimating the number of mosquitoes; but the committee repeat the blunders without answering my criticisms—a thing which amounts merely to an appeal *ad ignorantiam*.

8. Perhaps the most "colossal blunder" in the report is the omission of all reference to the *cost of the disease*. The fundamental economical principle of malaria reduction is that it will reduce that cost. For deaths, invaliding, medical upkeep, loss of service and of military efficiency among the 4000 soldiers at Mian Mir, malaria must cost Government directly a very large annual expenditure. Each British soldier is said to be worth £100 to Government, and each invaliding and sick furlough to England costs, I suppose, quite £50; so that Rs.100,000 a year (about £6666) would probably be a low estimate for the cost of a disease which has caused an admission-rate of 100 to 300 per cent. of strength in the station. And what must be the cost to the large civil population? I doubt whether the whole expense of the Mian Mir work from its beginning has equalled half the cost of the disease during a single year. If the disease costs Government Rs.25 a year for each soldier there, the one anna a head which has apparently been recently devoted to prevention is only 1-400th part of that cost. But all this is absolutely ignored, not only in this report, but in all the previous official reports on this subject, the pretence being that the few pence a head required for mosquito reduction are much more than can be afforded.

9. The committee's scanty account of campaigns outside India is mostly derived from occasional papers, and largely from mine. It makes no attempt to analyse either the results or the cost. Professor Osler has already adjusted their statements regarding Panama.[4] Colonel Gorgas says in his contribution to my recent book on the prevention of malaria that mosquito reduction costs $2 a head of population in Panama; but the cost of labour there is probably four or five times what it is in India, and the campaign was waged against yellow fever as well as malaria, and is much more sweeping than I ever suggested for India. The other campaigns are treated in the same manner. No attempt is made to extricate the facts for the purpose of a worthy review of the subject, and one would think that the Indian sanitary officials have never tried to ascertain these facts for themselves by special inquiry.

10. The greatest credit must be given to the military medical officers at Mian Mir for the manner in which they conducted the work with the small pittance allowed them for it. They frequently pointed out in recent years the necessity for more funds (their complaints are mentioned in the report), but none were granted. Thus, though malaria cost

[2] Journal of Tropical Medicine, May 16th, 1910.
[3] Journal of the Royal Army Medical Corps, September, 1908.

[4] THE LANCET, Oct. 8th, 1910.

Government, say, Rs.100,000 a year, the utmost that "economical administration" could allow for its prevention was, say, Rs.1000 a year. I see, however, from p. 5 of the report that the authorities did not hesitate to spend Rs.218,000 for an additional water-supply, which, however, turns out to be brackish! One can, therefore, spend 2 lacs for brackish water and 1 lac a year on account of malaria, but £66 a year is, in the sense of the committee, an inordinate expenditure for attempting to control that disease. The question arises whether the whole Indian sanitary system does not require, not reformation but revolution. When we note further that the pay of a single senior Indian official is often Rs.2000 a month, and that this will pay for 200 coolies at Rs.10 a month each, and that the permanent petrolage gang at Mian Mir seems to have fallen in 1909 to *four men and a hospital* assistant (p. 19), we shall, I think, conclude that this question is perhaps the most urgent one at present for India.

So much for Mian Mir. I think that all those who are interested in the saving of human life on a large scale would like to ask the following questions regarding the matter. Here we have a so-called experiment carried out to test a new sanitary measure proposed for the prevention of a disease which in India alone causes every year at least 1,000,000 deaths and say 100,000,000 cases of illness. Why, then, was not the experiment supported by the Imperial Government with sufficient funds (in addition to the miserable dole allotted from the cantonment fund) to ensure at least some genuine attempt at marked success? Why were not the measures of 1904–05 continued and maintained? Why were no exact records kept (or at least published) of the number of men employed, the work done, and the money spent month by month and year by year since then? Why, instead of the admittedly faulty military statistics, were not accurate measurements made by proper methods of the fluctuating amount of malaria in the place? Why is there no mention of the cost of the disease? And why were no efforts made to obtain accurate accounts of other campaigns? As, moreover, the whole affair was admittedly undertaken to test proposals attributed to me, would it not have been more courteous to have consulted me sometimes on the matter, instead of publishing under the sanction of the Government of India report after report full of omissions, hasty observations, and ill-considered conclusions which can only mislead the ignorant on a matter of life and death to millions? If I were to maintain that the whole affair was meant, not to test my proposals, but to discredit them, it would be difficult to refute me. It is easy to allow any experiment to fail if we wish it to do so.

But it is no longer possible to take the matter seriously. The reports are too clearly lacking in precision either of fact or of thought to be capable of adding anything to our knowledge of the subject. The whole point of the alleged experiment was really to compare the cost of the disease with the cost of its prevention; but the Committee have entirely ignored the former point and have admitted their inability to give "even an approximate estimate" of the latter one, and the result is therefore an absolute zero. Mian Mir proves nothing. If it *suggests* anything, it suggests that a trifling expenditure of 1 anna a head per annum was, as I have said, associated even there with a considerable fall in the malaria-rate. The Government of India have evidently been misled into the belief that mosquito reduction will ruin them and are therefore trying hard to escape from the responsibility; but the practical feasibility of the measure is now too well established by sound work elsewhere to be dismissed by such extraordinary hebetudes as are contained in these publications. I hope to discuss elsewhere the general question of malaria prevention in India.

I am, Sir, yours faithfully,

University of Liverpool, Nov. 1st, 1910. RONALD ROSS.

EFFICIENT VENTILATION.

To the Editor of THE LANCET.

SIR,—I have read with some astonishment Dr. Leonard Hill's letter in your columns on this subject and venture to offer some remarks, feeling that in its present form, and having regard to the eminent position of the writer in the physiological world, this letter is likely to do much harm. From it one would conclude that the effects of breathing impure air can be nullified by setting the air in motion. Judging from the reasons given, it would be as logical to say that if a cart-horse is overloaded the remedy is to flog him.

Some years ago I entertained 20 (mostly medical) men in a room 20 feet by 15 feet by 10 feet. It was a hot summer's evening, the external temperature being 80° F., the interior a little higher. I passed a plentiful supply of air through the room, but there was no appreciable movement of air; in spite of the high temperature my guests expressed themselves as feeling quite comfortable. I then struck off the air-supply and in a few minutes the air became oppressive. On taking the pulses and respirations I found that the former was in every instance considerably increased, in some nearly doubled in frequency. The number of respirations was also very much increased. On renewing the air-supply all the occupiers of the room experienced a refreshing feeling and their pulses and respirations returned to normal. Now in this case there was no question of any appreciable movement of air such as might act as a stimulant to the skin. I think this observation is a physiological proof of the ill-effects of impure air *per se*. I am willing to admit that the discomfort experienced by breathing foul air, especially when overheated, is partially removed by setting the air in rapid motion, but as I have said before this is only a palliative measure.

I do not think Dr. Hill can be serious in maintaining that fans placed in a room where persons are breathing foul air can be looked upon as a remedy, and this is why I feel it is important that his letter should be called in question. This method is the one caught at by many who wish to avoid their obligation to provide good ventilation. Within a mile of THE LANCET Office there are hundreds of rooms in which employees are packed without any proper provision of fresh air, and if the idea became general that the supply of a few revolving fans to throw the air about constituted efficient ventilation, this condition of things is likely to be perpetuated. I think Dr. Hill does well to contradict the very widely spread notion that CO_2 in quantities usually found in crowded rooms is deleterious. This notion has long since been proved a fallacy, but impressions such as these when widely spread and copied from book to book die hard.

Dr. Hill says: "There is no evidence worth a jot that the traces of organic material found in close air are harmful." I quite agree with him, but think this is due to the fact that our present methods are not sufficiently delicate, nor our knowledge of chemistry sufficiently advanced for us to appreciate the substances which are thrown off by the respiration of the lungs and skin. I think here a remark by Dr. M. H. Gordon comes to our rescue, where he advocates the use of our subjective feelings as a test. I personally have used no other method lately, but have simply gone on the principle of "the proof of the pudding is in the eating." Before they dogmatise on this point I should like to ask chemists and bacteriologists what is their explanation of the fact that air in a crowded apartment during waking hours has a different smell from that in a crowded dormitory? As a convenient expression I have given the name of spiral toxes to these mysterious substances. I am inclined to think that they are only slightly diffusible in air, suggesting a particulate constitution like that of smoke or fog. On approaching the door of a crowded church we appear to come suddenly on to a bank of fœtid air. The lack of diffusibility would account for the fact that the atmosphere in different parts of a room varies very much as to its stuffiness, although the motion of the diffusible gases CO_2, vapour of water and so forth, may be found uniform throughout the room. With respect to humidity I have come to the conclusion that the air-supply to an occupied room cannot be over-dried; the trouble is to keep the air in a room from becoming over-moist. In the cases where discomfort arises from the heating of the air this is due, I believe, always to errors in method of heating. The heating of air at present is usually effected by means of apparatus constructed of iron.

A year or two ago I made some experiments on this subject and found that if I heated iron above 80° F. it began to smell and produce what is usually called the flat-iron smell. When we remember that hot-water apparatus are usually employed at 180° it is obvious that the air as it enters the room must become vitiated. It is usually supposed that this smell depends upon the over-heating of organic matter in the air; this is quite fallacious. There is a very definite smell attached to every metal when heated, so much so that by practice it would be possible to identify a metal by means of its specific smell. With this fact in view I arranged the heating

apparatus for the new examination hall at Cambridge of such a capacity that it is not necessary for the heating services to be raised above 80°. This, of course, was a costly matter, but the result has fully justified the large expenditure. I have on the same principle arranged electric air heaters that contain a minimum of metal. By this arrangement vitiation of air is avoided. Control is obtained over the temperature by means of switches which call into use various sections of the apparatus. It will, I think, be a surprise to many to hear that when rooms are only occasionally used it is found cheaper to heat the air by this method than by hot water or steam.

In conclusion, I wish to emphasise the fact that for all practical purposes, if we want good ventilation, we must supply the proper amount of air. It must be properly distributed and removed, and must not be wasted by short circuiting. Efficient ventilation cannot be achieved by physiological juggling.

I am, Sir, yours faithfully,

Oct. 26th, 1910. THOS. GLOVER LYON, M.A., M.D.Camb.

THE RESEARCH DEFENCE SOCIETY AND PROPHYLAXIS AGAINST PLAGUE.

To the Editor of THE LANCET.

SIR,—In connexion with the cases of plague in Suffolk, let me say that this society has lately published an illustrated pamphlet on "Plague in India, Past and Present," by Lieutenant-Colonel Bannerman, M.D., D.Sc., director of the Bombay Bacteriological Laboratory. It gives a full account of the experiments which proved that fleas carry the plague from rats to man; it also gives a full account of Haffkine's preventive treatment, and of the many thousands of lives that have been saved by this treatment. I am sorry that the Research Defence Society cannot afford to give away this pamphlet in large quantities; but I shall be happy to send it to any of your readers who will send me seven stamps. I shall also be happy to send copies, on sale or return, to all booksellers.—I am, Sir, yours faithfully,

STEPHEN PAGET,
Honorary Secretary, Research Defence Society.

21, Ladbroke-square, London, W., Oct. 31st 1910.

A CASE OF HOMICIDAL DROWNING OF A BOY, AGED SEVEN, IN WATER 3½ INCHES DEEP.

To the Editor of THE LANCET.

SIR,—On August 19th, at about 5 o'clock in the afternoon, I was summoned to a village some three miles distant from Bicester to see a cottager's son who had been drowned, it was alleged, by his insane mother. I found the body of the boy, aged 7 years, lying in the cottage "wash-house" at the side of a zinc washing-tray (22 inches long by 18 inches wide), which contained only 3½ inches of water. Life was extinct, though the corpse was still warm. The boy was fully dressed but for his jacket and boots, and his shirt-sleeves were tucked up as if in preparation for a wash. There were no marks of violence. The skin was blanched, the lips blue, the pupils widely dilated, and some white froth had issued from both nostrils. A post-mortem examination made subsequently revealed the ordinary signs of suffocation from drowning.

The history of the case was that about 3 P.M. the woman was left alone in the house with her little boy by her grown-up daughter, who at that time took tea to her brothers in the harvest field. Shortly afterwards the next-door neighbour, an old cripple just able to hobble about with the aid of two sticks, heard three screams which he recognised as coming from the child in his neighbour's "wash-house." He took no immediate action as he suspected nothing. A few minutes later, however, he was startled by the frenzied mother, who rushed into his garden calling out that she had drowned her child. He immediately sent for the woman's husband and went across to the "wash-house," where he found the body of the boy leaning over the side of the washing tray with his face and hands in the water, and resting on the bottom. He laid him out on the floor and, having "rubbed him well and pressed his bowels once or twice" to no effect, he came to the conclusion that the boy was dead.

The case has since been before the Oxford assizes, when the mother, who was found guilty of causing the death of her child though not responsible for her actions, was ordered to be "detained during His Majesty's pleasure." The woman had, a few months before this unfortunate happening, been under treatment for melancholia. I had warned her husband of the danger of leaving her unwatched and had also advised her removal from home. It was sad that neither the old man, who was so near at hand, nor any of the others who arrived on the scene immediately afterwards knew anything about artificial respiration.

I am, Sir, yours faithfully,

ROBERT L. GLASS, M.R.C.S. Eng., L.R.C.P. Lond.

Bicester, Oxon., Oct. 25th, 1910.

THE TERRITORIAL FORCE AMBULANCE SERVICE.

To the Editor of THE LANCET.

SIR,—When I wrote in your columns of Oct. 15th that the *Hospital*, in stating that almost the sole *raison d'être* of the Order of St. John of Jerusalem was its ambulance department, overlooked the great history and traditions of the Order, I deemed myself, and still deem myself, justified in my criticism. But as the *Hospital* has now stated that it "is not unmindful or careless of the past glories of the Order, I admit misapprehension of its meaning, but not "misquotation." This, however, is a mere trifle. The important point at which every right and fair-thinking man wishes to arrive is the provision of a competent ambulance service for the Territorial Army.

What the British Red Cross Society has been able to achieve up to the present time is fully set forth in a statement issued by the society which appears in the *Morning Post* of Oct. 24th. The one thing that the inditer of that roll of achievement forgot to add was the obligation of the British Red Cross Society to the ambulance department of the Order of St. John of Jerusalem. The "*personnel* of 6222" forming the 202 voluntary aid detachments are all, or almost all, men and women trained by the St. John Ambulance Association. I received recently a copy of the last report of the county director of Devonshire, in which, after naming six institutions competent to grant certificates qualifying for admission to voluntary aid detachments, he adds, with some *naïveté*, "But, as the St. John Ambulance Association alone of these six has a branch working in this county, I recommend all to make use of it *for the present*," or words to that effect. What is the case in Devonshire is the case in all, or most, of the 44 counties in which the Red Cross Society has branches.

In an article which I recently contributed to the *National Defence Magazine* I pointed out that the British Red Cross Society had undertaken to provide two things—viz., a manual of instruction for the detachments and an inspecting staff. I note that the report in the *Morning Post* entirely ignores these two most important points; and the natural inference is that neither manual nor inspecting staff as yet exists. How are the voluntary aid detachments to be trained and maintained efficient without them? I am amused at the 170,000 documents issued from the central office "as a proof of work done," and the careful mention of the high nobility who lead the Red Cross movement. I wrote correctly three months ago for the *National Defence Magazine* that the chief part of the work of the headquarters of the Red Cross Society consisted in "a prodigious amount of memoranda and forms and the invocation of all the deities of social influence."

I am, Sir, yours faithfully,

The Athenæum, Oct. 26th, 1910. A. C. YATE.

PS.—I am perfectly aware that in this letter I only touch one or two tags of the fringe of this question. The crucial point is involved in the now much debated problem of compulsory *v.* voluntary service—the problem so ably treated by Lord Curzon at Hanley. If service in our army of defence becomes a national duty, service in its ambulance service will be equally so; and so, in my opinion, it should be.—A. C. Y.

SANITARY PROGRESS AT COPENHAGEN.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

(*Concluded from p. 1309.*)

The Milk-supply.

IN my previous article I said that I would deal later with the question of the milk-supply of Copenhagen. That side of the sanitary progress of the Danish capital is worth full consideration, for the authorities have arrived at something like a satisfactory solution of some difficult problems. Some thirty years ago the milk-supply of Copenhagen was bad, and its method of distribution reprehensible. The distillers sold their distillery waste or mush to the dairymen who fed their cows with it, and in exchange the distillers bought and retailed the milk, and the public had to go to a vodki shop for it. Many cows were kept in the town where they were not only fed on such unsuitable food as the distillers' mush, but were stabled in overcrowded, ill-ventilated, and dirty sheds. There were no veterinary surgeons to inspect these premises, and hardly any measures were taken to ensure either the quality or the purity of the milk. In time the authorities woke up to the risks endured by the public, and it seems that the first steps taken were directed towards preventing the addition of flour and water to the milk. If reference is made to the earliest analyses, of which a record has been kept, it will be seen on what an extensive scale milk was adulterated in this way. When the control of the milk-supply by the police began to be effective the milkmen employed two sorts of cans; the one contained pure milk, the other they declared contained skimmed milk. As such the police inspector would recognise that both articles were sound, but directly the inspection was over there was nothing to prevent the milk-dealer from mixing the skimmed milk with the pure milk and selling the mixture as genuine milk fresh from the cow. Preservatives were also used and this to an undue extent, whereby children and invalids suffered.

Increased Expenditure and Smaller Profits.

The starting point of reform was due to an interesting incident. A merchant of Copenhagen, Mr. G. Busck, noticed that one of his workmen seemed worried and inquired the cause. The workman replied that he was anxious about the health of his child. The distiller who supplied him with milk for his child had refused to do so any longer because he did not buy spirits as well as milk. Mr. Busck was so impressed by this state of affairs that he appealed to men distinguished for their public-spirited and disinterested conduct, such as Professor Panum of the University, the Court Chamberlain, M. Bille, former Ambassador at Washington, Professor Borch, and Professor Englested, and asked their help in starting a society for the purpose of giving the population an opportunity of obtaining "pure milk from healthy cows." This society was founded in the spring of 1878 with the small capital of £500 and the understanding that no one should receive more than 4 per cent. interest for his money.

From the very first the Copenhagen Milk Supply Co., as this society styled itself, grew rapidly, and its efforts were greeted with great sympathy, everyone realising the need of pure milk. But this meant a complete reform of all the processes from the cow to the house of the consumer. Every detail in the existing milk-supply had to be modified, and pressure was at once brought to bear on all the persons concerned to make them consent to the extra trouble and extra expense entailed by all these alterations. First of all, the cows had to be fed on proper food and not distillery slops, which produces the largest quantity of inferior milk. Then the cows had to be housed in a sanitary manner. When it came to milking the cows a number of precautions had to be introduced, of which the farmer had no conception. But a distinction must be made. There are two sorts of milk needed: the one that is destined to replace mother's milk for artificially fed infants and the other ordinary milk for the everyday use of adults. From the first it was recognised that the ordinary milk and the "Bornemaelk," or "milk for infants," might need different treatment.

Milking the Cows in Copenhagen.

For milking a cow the ideal is the open field, where the fresh winds blow, the sun shines, and the air is pure. In winter, however, the cows are milked in their stables, but this must never be done at the time of cleaning, when there is too much dust about. Further, if the milk is for the feeding of infants the cow is taken out of the stable and passes through a compartment where it receives a final brushing before it is admitted to the special milking room, which is kept beautifully clean, well lighted, and ventilated. Here the milk-maid, wearing a spotless white dress, first wipes the cow's udder with a damp cloth. Then she washes her own hands before milking. The first two or three jets from each teat go to a separate pail and are used for farm purposes. For ordinary milk the milking may take place in the stables, but in either case the cows are shaved near the udders so as to lessen the risk of dirt falling into the milk, and the milkmaids wash their hands and the teats before milking. The cows that supply the milk for infants are examined twice every month by a veterinary surgeon, and a report is then drawn up as to the state of the stables, the nature of the food given to the cows, and whether there is sufficient ice on the premises. The milk also is only taken from cows that have been submitted to the tuberculin test. The first step, therefore, is to obtain milk that is thoroughly good and to prevent its contamination during the milking process. No amount of boiling or pasteurising will make good milk of bad milk.

Preservation of the Milk.

But having obtained good sound milk from a healthy cow, there come the problems of its preservation and conveyance from the farm to the consumer. The system of preservation employed is based on extreme cleanliness, and on the use of ice to lower the temperature. For the infants' milk-supply not only, as already described, are extra precautions taken in milking, but a special pail is used. Fixed to the bottom of this pail is placed a pear-shaped copper receptacle (Fig. 1).

FIG. 1.

Milk pail with pear-shaped receptacle to contain cooling mixture.

On turning the pail upside down this receptacle can be opened and filled with a mixture of one part of common salt with three parts of ice or snow. The lid is then screwed on, and we have within the pail a large cooling surface. By using one of these pails the temperature of the milk is at once reduced to 70° F., whereas in an ordinary pail the temperature of the newly-drawn milk exceeds 80°. The cooler the temperature, the less is the development of organic life favoured. Experiments have been made. From two teats of a cow six quarts of milk were milked in one of these refrigerator pails. From the other two teats of the same cow six more quarts were milked into an ordinary pail. Then the milk was placed side by side in bottles in a room where the temperature was 60°. The milk from the ordinary pail was the first to turn sour and the other remained pure a much longer time. This trial was repeated, but this time the teats were carefully washed. Though these precautions were taken in regard to both pails, the milk from the ordinary pail went bad after 82 hours and that from the refrigerating pail after 144 hours. Then the same experiment was made without washing the udders but drawing the first jets of milk into a separate pail. The milk from the ordinary pail kept fresh for 52 hours and that from the cooled pail 96 hours. On repeating this same experiment, but omitting to draw off the first few jets of milk into a separate pail and keeping them away from the bulk of the milk, that which was gathered in the ordinary pail showed signs of deterioration after 40 hours and that from the refrigerated pail remained sound for 70 hours.

Discipline by Money.

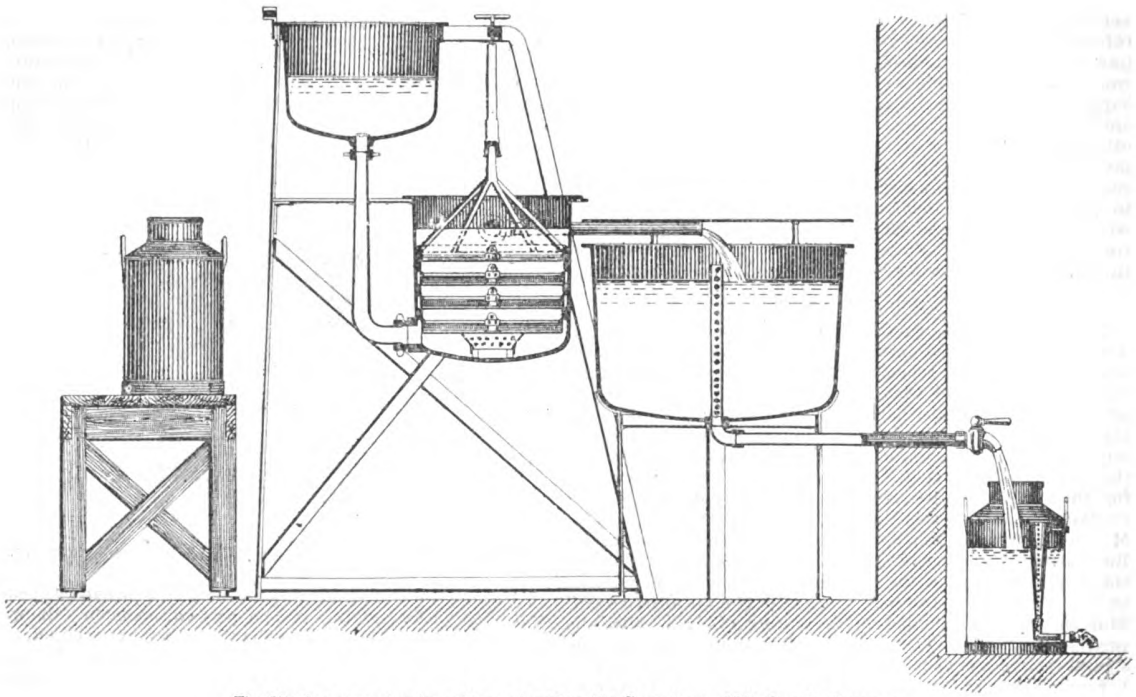
All this is of scientific interest, but how are rough-and-ready farm hands to be taught the importance of these aseptic principles? Where also is the authority to enforce such measures? In the absence of laws and of police the only force that could be brought to bear was the power of money. Rules and a complete scheme of dairy-farming were presented to the more intelligent farmers. If they chose to incur the trouble and expense of keeping cows and collecting the milk in the manner and with the precautions indicated, then the Copenhagen Milk Supply Co. would buy this milk at a much higher price than its ordinary market value. But this did not suffice. Many farmers accepted these terms, and were doubtless quite desirous of carrying out all the stipulations, but why should the farm hands and dairymaids give themselves all this extra trouble? They were not interested in the sale of milk. Thereupon the Milk Supply Co. determined not only to pay the farmers more for their milk, but it decided to give a present or bonus of 10 to 20 kroner (11*s.* to 22*s.*) per month to the men who have charge of the cows and whose business it is to keep them and their stables thoroughly clean. The milkmaids also receive a bonus of half the amount, and inspectors constantly go round to see if these bonuses have been earned, and that the farmer on his side is carrying out his bargain. Instant dismissal of the workpeople or cessation of business with the farmer is the penalty of any infraction of the rules. In the absence of laws on such matters there can be no other method. To pay better than the market price is the one and only force private enterprise can employ.

There is yet another and very grave matter in regard to the farm or source of supply. Illness may occur and the patient may contaminate the milk. To meet this contingency the company desires that when illness is suspected no milk should be forwarded till after medical advice has been obtained. Any loss that this may entail on the farmer will be refunded by the company. Thus all fear of losing money through taking proper precautions is removed. If the medical adviser thinks the illness is not serious and there is no danger of milk contamination, then the business relations are resumed as before. If, on the contrary, there is danger, then the State takes the matter in hand. The company, however, has just stepped in to fill that important gap in the chain between the mere suspicion of illness and the actual intervention of the public health authorities.

The Milk at the Town Depôt.

Such are the measures taken to secure a supply of good and pure milk, but there yet remains the very great difficulty of conveying this milk from the farm to the town depôt, and thence to each individual consumer. How this is done I was able to see by passing a portion of the night at the great depôt, situated in the outskirts of Copenhagen. Here a branch line enables the milk trains to reach the doors of the depôt. The milk-cans are provided by the company: square cans of 50 litre capacity for ordinary milk and round cans of 40 litre capacity for milk for infants. These are sealed down at the farm and bear the name of the sender. In summer the railway vans are provided with ice to keep the milk cool. On the railway platform hand trucks receive the milk cans, and these are wheeled into the depôt. A clerk notes whence each can comes. It is then weighed. The can is now opened. A woman introduces a lactometer; at the same time a sample is taken, partly for the laboratory and partly for the milk-tasters. These latter are women, and they have to taste 150 samples a day. They can easily detect if there is an unusual flavour, in which case the can is set aside for analysis and more elaborate examination. The temperature of the milk is also taken, and should it prove not cool enough the persons who have supplied the milk are warned. If, as is usually the case, the milk is found to be good, it is then poured out of the can over a sieve into a vat or tank. From this receptacle the milk is pumped up over what is known as a Lawrence cooler. This consists of a pipe twisted round to form a cone and the milk pumped over the top and narrow end of the cone falls over it in a thin sheet. As the cone contains iced water this cools the milk. The water in the cooler travels backwards and forwards from a large ice-box. The milk thus cooled is now filtered. The filtering apparatus consists of two receptacles, one several feet higher than the other (Fig. 2). The second and lower receptacle is filled with fine gravel. There are wire gauze partitions to prevent clogging, and at the top there are three or four layers of very fine cotton tissues, such as muslin or cheese cloths, that act as further filtering or clarifying material. The object, of course, is not to filter in the laboratory sense of the word, but to extract any grit, hair, dust, or other foreign matter that may be in the milk; and it is wonderful what a large quantity of foreign substances does get mixed with milk. A pipe unites the two

FIG. 2.



The filtering apparatus for milk employed by the Copenhagen Milk Supply Company.

receptacles, and the milk, by the force of its own weight, travels up through the filter and out by the top of the lower receptacle. It is then received in cans or bottles, as the case may be, and is ready for delivery. The boxes to hold the bottles are provided with ice; the milk is never allowed to get warm.

How to Draw Milk from a Can.

The milk is delivered direct to the consumer; it is not entrusted to the tender mercies of a retail dealer, by whom, if it is not adulterated and wilfully tampered with, it is, nevertheless, through ignorance or carelessness, likely to be contaminated or befouled. It has been thought preferable to build large stables, purchase 80 horses, and create a perfect arsenal of carts, so that the milk might be delivered in an absolutely pure condition to the consumer himself. These carts are closed on all sides and in themselves represent quite a revolution in the old methods of the trade. Inside are large milk-cans with taps coming through small apertures in the side of the cart. Here there are one or two small apertures which are only opened when milk is required. The measures for the milk have handles so constructed that they must be put by in such a manner that dust cannot fall inside. But the most thoughtful contrivance is that which is put within the milk-can itself. As with milk the cream gathers on the top, it follows that the milk in the higher part of a big can would be of better quality than that at the bottom. Therefore the milk should be drawn from all parts of the can and not merely from the bottom, where the tap is placed. To this end a perforated tube going from the top of the can to the tap might draw off the milk from all parts of the can. But even this would not suffice, for the weight of the milk creates a greater pressure at the bottom of the can. Therefore a pipe has been devised which is smaller at the bottom and has smaller holes. But the pipe widens and the holes are larger and larger as it gets nearer the top of the can. Thus the milk at the top can run in more easily. This compensates the pressure at the bottom, and consequently the customer gets his fair share of top milk. This is shown in the illustration.

Cleanliness and Ice as the only Preservatives.

In regard to the extreme cleanliness observed, I need not describe in great detail the mechanical means employed to clean, scour, and sterilise all the utensils. An important point is to note that where milk is concerned plain cold water must first be used so as to prevent curdling and to get the traces of milk removed. It is not till this has been done that hot water and soda can best be brought into action. In the big cans machine brushes scrub with 600 revolutions in a minute. For cleaning bottles the brush that goes inside makes 1500 revolutions in a minute. The inside of the metallic cans is very smooth, to prevent anything adhering and to facilitate the process of cleaning. After this is over the cans are passed through a 1 per cent. solution of lime-water, then are flushed out with plain water, and finally superheated steam is discharged in each can. This has a sterilising effect, while the heat causes the cans to dry quickly, and there is less chance of rust. The cans are then ready to be used again.

As for the premises where all this is done, they are spacious and airy. They consist of only one lofty floor. The ground is asphalted over. All the men and women employed have to wear white overalls and wooden clogs, as the floor is wet with the washing that is going on all the time. The walls are whitewashed throughout, and no dust or dirt is allowed to accumulate. The ice-house attached to these premises holds 3000 tons of ice, and this figure gives some idea of the important part ice plays in the transport and preservation of milk. The bottles that contain the special milk for infants are placed in ice up to the very last moment. If the milk is kept cool and perfectly clean it will last long enough to be brought to the consumer, who may then drink it in its natural condition, unaltered by the addition of chemicals or by any process of pasteurising, of boiling, or of warming.

The Financial Problem.

The most crucial question is undoubtedly that of the price of the milk. If the milk is to be rendered very expensive by taking all these precautions then the reform will defeat its own ends. But the Copenhagen Milk Supply Co. has effected a great economy by limiting the interest on the capital invested to 4 per cent. and by eliminating the small retailer altogether. It has three milk depôts of its own for the retail sale of milk situated in convenient districts of the town and a small army of carts taking the milk up and down the streets. On these carts is written in big letters what is the price of the milk—namely, 16 öre, or 2¼*d.* a quart, for unaltered pure milk. The special milk for infant feeding is expensive, as it is rather more than 3*d.* the quart, but it is the cheapest form of medicine. Still, the extreme poor cannot be expected to pay this price, and such public or private charities as exist should help to place this more expensive milk at the disposal of poor mothers who cannot suckle their own infants. Altogether the Copenhagen Milk Supply Co. now sell something like 9,000,000 litres of milk in the course of the year. This represents only a portion of the milk-supply of the town, but it constitutes a sufficiently severe competition with the other milk dealers to have had a most wholesome action on the entire trade. It has prevented the raising of the price of milk. Though the price of commodities has often increased, that of milk has remained stationary for the last 32 years. On the other hand, the standard of cleanliness observed and the precautions taken have been radically changed and improved. The other great milk concerns are not actuated by the same philanthropic reasons which constitute the inspiring motive of the Copenhagen Milk Supply Co., but they have all had to imitate, at least to some extent, what was done. Thus there has been an all-round improvement affecting the price and the purity of the entire milk-supply of Copenhagen.

THE RECENT ARMY MANŒUVRES IN THE SOUTH OF ENGLAND.

(BY A SPECIAL CORRESPONDENT.)

(*Concluded from p. 1310.*)

II.

Medical Services.

THE organisation of the medical services was briefly as follows. Cavalry brigade and infantry brigade reception hospitals were organised for the temporary treatment and disposal of the sick. Divisional troops sent their sick to the nearest reception hospital. All medical officers were mounted—horses, saddlery, picketing gear, horse blankets, &c., being provided for captains and lieutenants in medical charge of mounted troops by the officers commanding the units to which they were attached. Medical officers in charge of dismounted units were provided under arrangements made by their brigade commanders. Field medical officers had to arrange to provide themselves with suitable chargers.

Medical officers in charge of troops were provided under brigade arrangements with a regimental non-commissioned officer acquainted with medical inspection duties, and tents, camp equipment, and transport were similarly provided for these officers. The administrative medical officers and sanitary officers were provided with bâtmen under arrangements made by the general officers commanding divisions; bâtmen for the medical officers attached to troops were provided by the brigades concerned. The Royal Army Medical Corps *personnel* and transport with headquarters and brigades were accommodated, rationed, foraged, &c., by the units to which they were attached, the reception hospitals being treated as independent units and not attached to any other unit for these purposes. Stretcher-bearers (with armlets) and stretchers were provided by officers commanding units in accordance with the following scale, and were placed at the disposal of the medical officers in charge of the troops, who were directed to take opportunities, as far as possible, to instruct the stretcher-bearers in their duties.

	Stretcher-bearers.	Stretchers.
Regiment of Cavalry	6	2
Battery of Artillery...	2	1
Battalion of Infantry	8	4

Medical Inspection of Sick.

The sick were seen each morning in time to admit of the cases being disposed of before the troops moved out of camp, and also each evening on arrival in camp. The sick of units which had no medical officers attended at the nearest medical inspection tent.

Disposal of Sick.

All sick men who could not be treated with their units (trivial cases) were sent to the reception hospital. Cases not likely to require more than 24 hours' treatment were detained in the reception hospital. Cases requiring more than 24 hours' treatment were disposed of as follows:—(*a*) If likely to be fit for duty before the termination of manœuvres they were sent to the nearest convenient military hospital at which accommodation was available, due regard being paid to the probable movements of the troops. (*b*) If not likely to be fit for duty before the termination of the manœuvres, the sick were sent direct to the military hospitals at their stations, if fit for the journey. Serious cases, unfit for the journey, were sent to the nearest military hospital in the direction of their stations, or if considered expedient to any military or civil hospital more conveniently situated. Detailed instructions, with a list of these hospitals, were furnished by the Deputy Director of Medical Services to the administrative medical officers of the various divisions. In all cases it was ordered that it should be ascertained by telegram beforehand whether accommodation was available. Sick reports were sent with all men reporting sick, and their kits, arms, rations, and blankets were directed to be sent with them to the reception hospitals. The reception hospitals were evacuated each day under the orders of the administrative medical officer of the division concerned. It was arranged that in the event of any cases of infectious disease occurring they should be transferred to the nearest civil infectious hospital, if no convenient military hospital was at hand. All railway arrangements for the evacuation of sick were made by the officers in charge of the reception hospitals under the orders of their respective generals. A railway ambulance coach to be attached to ordinary passenger trains was kept available for the conveyance of serious cases from the manœuvre area at convenient central railway stations, the names of which were notified by the Deputy Director of Medical Services. A medical officer for each division with two non-commissioned officers and two privates of the Royal Army Medical Corps and equipment (medical panniers, companions, haversacks, and water-bottles) were stationed to superintend the arrangements for the entraining of the sick on their transfer to military hospitals, the necessary arrangements for accommodation being made by the divisional authorities.

Ambulance Wagons.

Administrative medical officers of divisions arranged for the distribution of the ambulance wagons of the reception hospitals amongst the units on the line of march and in the field. On the line of march an ambulance wagon was detailed to proceed in rear of the second line of transport of each division. A motor ambulance wagon was placed at the disposal of the Deputy Director of Medical Services for the transfer of serious cases to hospital.

Miscellaneous Instructions.

Hawkers were not allowed to accompany the troops, who were forbidden to deal with them on the march or in camp. Special attention was directed to be paid to the care of the feet and the fitting of boots and socks. The regimental chiropodists were directed to attend at the medical inspection tents with the men of their respective units requiring treatment by medical officers for sore feet. It was noted that men of the Territorial Force (who are not supplied with the regulation pattern boots and who supply their own boots) in many instances wore pointed-toed boots, the result being that their marching powers were much impaired by sore feet and blisters.

Field Ambulances.

The Second Division, which mobilised at Aldershot up to its full war establishment, was complete with three field ambulances. The *personnel* was brought up to full war strength by calling out the army reservists and special reservists of the Royal Army Medical Corps. Many of these men had originally served in infantry regiments before joining the reserve, and, while their marching powers were good, it was thought that they were wanting in their knowledge of corps work. The non-commissioned officers detailed for the field ambulances might also have been better selected, and their powers of enforcing discipline were not as satisfactory as could be desired when one had to consider the class of men they had under their orders. Another remarkable feature of the medical mobilisation was the fact that while the infantry of the line were all provided with the new web equipment, the Royal Army Medical Corps were still wearing the obsolete forms of equipment whereby the greatcoat is carried behind strapped on the belt, causing severe abdominal strain and fatigue. The men felt themselves very much handicapped by this, and it is hoped that the medical authorities at the War Office will adopt the new web equipment which has proved so satisfactory, from a physical efficiency point of view, amongst the infantry. It seems peculiar that the medical branch of the army should recommend this new equipment for all other infantry units and omit its adoption in its own branch. The field ambulances worked well on their trial as far as their equipment went, but there was a marked tendency for the equipment of the different sections to get mixed up in camp.

Reservists.

Two classes of reservists were mobilised with the Second Aldershot Division, army reservists and special reservists. It was noted that many of the former were men of more or less advanced life and unfit for the arduous daily marching; many more suffered from advanced dental caries. Amongst the special reservists the opposite extreme was notable; many of these were mere boys and quite physically unfit to march the distances covered by the troops. In one column alone some 250 reservists were reported as having been so incapacitated by the marching that it was found necessary to transfer them to the Base Hospital at Aldershot. Such an occurrence as this becomes all the more grave when it is considered that the climatic and other conditions under which the army manœuvres occurred were so favourable. The weather was all that could be desired and the marches were not excessively long, the rations were generous, and tents were used almost every night. What would have been the experience under adverse conditions?

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Health of Birmingham.

THE report of the medical officer of health for the third quarter of the year shows that there were 3667 births registered during that period, as compared with 3814 in the previous quarter and 3724 in the third quarter of 1909. The births were equal to a rate of 25·8 per 1000, which was considerably below that of the third quarter in any previous year. The mean birth-rate for the third quarter in the ten preceding years was 30·3 per 1000. There were 1763 deaths, equal to a rate of 11·2 per 1000, which was considerably lower than in any quarter in any previous year. The mean death-rate for this quarter in the preceding ten years was 16·4 per 1000. The low mortality was largely due to the diminished number of deaths from summer diarrhœa. All the other infectious diseases, as well as phthisis and bronchitis and pneumonia, also showed a reduced mortality. The infant mortality was at the rate of 107 per 1000 births, as compared with 145 at the same time last year and an average of 203 in the third quarter of the ten preceding years. This infant mortality rate was quite the lowest ever recorded for this quarter.

Orthopædic and Spinal Hospital.

The annual report gives the following record of work during the year: Attendances, 15,019; new cases, 1478; operations, 665; in-patients, 382; country patients, 637. The number of operations had increased by 230 in 12 months—that is an increase of 50 per cent. The medical committee again emphasises the hygienic deficiencies of the present building. The hospital, although one of the oldest established in Birmingham and although requiring the most modern and up-to-date means for the surgical treatment of patients, remains housed in a building which can recommend itself to no one for the purpose for which it exists. This hospital, and no other in the city, devotes a large amount of its income to the supply of instruments and apparatus for the relief of lameness and general deformities. The financial statement showed: Subscriptions, £1124; donations, £147; supernumerary tickets, £228; hospital collections, £388; dividends and interest, £137. The expenditure, including

£653 for instruments supplied to patients, was £3124, being £1032 in excess of the income.

Stratford-on-Avon Hospital.

The annual report presented at the eighty-eighth annual meeting on Oct. 10th showed that the year closed with a credit balance of £77, the expenditure being £1844 as compared with £1808 last year. During the year 276 in-patients were treated, of whom 73 were medical, with a mortality of 8; 188 surgical, with a mortality of 6; and 15 ophthalmic. There were 153 operations under anæsthetics. A discussion arose on a proposal to appropriate a sum of £500 from the capital fund for building, alterations, and extensions. Several members objected to the capital being interfered with. The total cost of the alterations was given as £1600, and Mr. W. B. Gibbins generously promised £1000 if the work was started at once.

Birmingham Hospital Saturday Fund.

The total amount of this year's collections is £20,167 17*s.* 11*d.*, an increase of £478 10*s.* 7*d.* over last year. The President, Alderman Sir Hallewell Rogers, at a recent meeting made the interesting announcement that the Fund was shortly to embark on the management and maintenance of a consumptive sanatorium. Plans were being considered for a building to contain 50 patients to be erected on Romsley Hill, about eight miles from Birmingham. The site is an ideal one, well wooded, and 800 feet above sea level.

St. Luke's Guild.

At the invitation of the Dean of Worcester (Dr. Moore Ede) the members of the Birmingham and Midland Ward of the Guild of St. Luke held their festival on Oct. 18th at Worcester for the first time, previous visits having been paid to Birmingham, Coventry, Warwick, and Leamington. Dr. H. Cameron Kidd, of Bromsgrove, the master of the ward, presided at the annual meeting at the Deanery. Subsequently the members in their academical robes attended service at the Cathedral, the sermon being preached by the Dean.

Nov. 1st.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Presentation Portraits to Sir James and Lady Barr; Complimentary Banquet.

Sir James Barr and Lady Barr were presented with their portraits painted in oils by Mr. Hall Neale at a banquet given in their honour by the subscribers to the Portraits Fund at the Adelphi Hotel on Oct. 25th. The committee was comprised entirely of members of the medical profession, Mr. F. T. Paul being the chairman, Mr. T. H. Bickerton honorary treasurer, and Dr. W. Blair Bell and Dr. R. J. M. Buchanan honorary secretaries. The function was a conspicuous success and was attended by 155 ladies and gentlemen. Mr. Paul, in an eloquent speech, bore personal testimony to the many striking qualities of Sir James Barr. He described him not only as a most scientific and resourceful physician and a valuable colleague, but also as a staunch friend and charming companion. He referred to various undertakings, civic and professional, that he had carried to a successful issue; especially emphasising the enormous amount of work he had done in connexion with the British Medical Association. In a sketch of his career, Mr. Paul alluded to Sir James Barr's numerous publications, and called special attention to his treatment of typhoid fever, and to his researches into the pathology of the circulatory system. He paid a tribute to Sir James Barr's generosity to the younger members of his profession, and to the encouragement he had given by his sympathy and support to scientific research. The chairman, in a happy vein, referred to the devoted help Sir James Barr had received from Lady Barr, who was deservedly beloved by all who knew her. He had the greatest pleasure in proposing the toast of "Sir James and Lady Barr." The toast was seconded by Sir Rubert Boyce, who expressed his admiration of Sir James Barr's courage and strength of mind in advocating many righteous causes and not fearing to hit out, even to his own detriment. Sir James Barr responded to the toast with much feeling, giving a brief account of his career which was full of interesting episodes. He spoke of the great kindness he had always received from members of the medical profession, and of the share Lady Barr had had in any success he might have attained. The toast of "The Ladies," proposed by Dr. William Permewan in a speech very happily phrased, was responded to by Mrs. F. T. Paul. The toasts of "The Artist" and "The Chairman" were also heartily received. Sir James and Lady Barr subsequently held an informal reception, which was attended by all who had been present at the banquet.

St. Luke's Day Medical Service.

The annual medical service (St. Luke's Day) was held at St. Luke's Church on Sunday, Oct. 23rd. The preacher was Dr. Paget, the Bishop of Oxford. There was a large attendance of members of the profession residing in Liverpool and environs. Academic costume was generally worn. The service was also attended by a goodly muster of the Royal Army Medical Corps (Territorials). The gallery was well filled by nurses from the various city hospitals. Several lady members of the profession were also present in academic costume. The collection will, as usual, be devoted to the British Medical Benevolent Fund.

Health Notes.

Dr. E. W. Hope, medical officer of health, speaking on Oct. 20th at the annual dinner of the Liverpool Cowkeepers' Association, said that of the thousands of samples of milk taken in the city last year not one was found to be affected with tuberculosis.—Alderman Menlove, the chairman of the health committee, stated on Oct. 20th that, judged by the statistics of the months which had already passed, the present year promised to return the lowest death-rate on record for Liverpool.

Death of the Medical Officer of Health of Birkdale.

Mr. Albert Victor Wheeler, of Scarisbrick New-road, Southport, for many years the medical officer of health of Birkdale, died at his residence on Oct. 21st. Mr. Wheeler, who was appointed medical officer of health in 1887, was 61 years of age.

Nov. 1st.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Society of Medical Officers of Health.

AT a meeting of the South Wales and West of England branch of the Society of Medical Officers of Health held at Cardiff on Oct. 28th, Dr. D. J. Morgan (Swansea), in his presidential address, dealt with the subject of popular education on matters of hygiene. He maintained that the duty of a medical officer of health should consist not merely in carrying out the requirements of the law, but should have for one of its main objects the real education of the general public in all matters relating to health. The process of education should apply first of all to the Board of Education itself, secondly to the various examining bodies of the country, thirdly to the school teachers, fourthly to the school children, fifthly to the children's parents, and lastly to the general public. Referring to the medical inspection of school children, he deplored that many teachers had failed to realise the importance of a sound, healthy body in a young child. Such teachers must be taught that the first essential in life is a healthy body, and that children who are unhealthy are not merely a source of danger to other children but are in such a condition that they are unable to absorb knowledge to the best advantage. The children should be taught what health really meant in order that they might be able to bear the strain of later life.—The action of the Radnor county council in seeking to appoint a county medical officer of health and school medical officer at a combined salary, to include travelling expenses, of £350 per annum was adversely criticised, and a resolution was unanimously passed disapproving of the inadequacy of the salary offered.

Swansea and Merthyr Joint Asylum.

After negotiations which have been spread over a long period an agreement has at length been arrived at to provide an asylum for the boroughs of Swansea and Merthyr Tydvil. It is to be situated in or near to Swansea, and the initial cost of the land, buildings, and furnishing is to be defrayed

as to two-thirds by the corporation of Swansea and as to one-third by the corporation of Merthyr Tydvil. The management of the institution is to be in the hands of a committee of 25 persons, of whom 13 will represent Swansea and 12 Merthyr Tydvil. The population of Swansea at the last census was 94,514 and of Merthyr Tydvil 69,227.

Security of Tenure of Medical Officers of Health.

The medical officer of health of Newport (Mon.), Dr. J. Howard-Jones, has hitherto held office for a limited period, but at a recent meeting of the local authority he was elected without reference to time and can now only be called upon to resign his office with the consent of the Local Government Board. The medical officers of health of Cardiff city, the Rhondda and Aberdare urban districts, and the Llandaff and Dinas Powis rural district hold office on the same terms.

Abergavenny Workhouse.

The architect of the Local Government Board has given an estimate for the cost of providing a new workhouse at Abergavenny for about 200 inmates and cottage homes for 20 children, but the guardians take no steps in the matter. The Local Government Board has now sent an ultimatum to the guardians that if no action is taken the only alternative appears to be to dissolve the board of guardians.

Chalets for Consumptives at Swansea.

Joint action has been taken by the Swansea corporation and board of guardians for the treatment of consumptive patients. It is proposed to erect on land in the vicinity of the workhouse twelve chalets at a cost of £250. The cost of these buildings and of administering the institution will be divided equally between the corporation and the guardians. The patients admitted for treatment will not necessarily be paupers.

Swansea Slaughter-house.

It is so constantly asserted by the opponents of public slaughter-houses that the latter can only be carried on with the assistance of the rates that it is of interest to learn from the annual report of the Swansea public auditors that the net profit on the slaughter-house in that borough for the year ending March 31st, 1910, after providing one year's interest on stock and sinking fund, amounted to £564, an increase of £317 upon the profits of the previous year.

NOV. 1st.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh University: Rectorial Address.

THE Right Hon. George Wyndham, M.P., Lord Rector of Edinburgh University, delivered his rectorial address to the students on Friday, Oct. 28th, in the McEwan Hall. The chair was occupied by the Lord Chancellor of the University, the Right Hon. A. J. Balfour, M.P., and he was accompanied to the platform by an unusually large and representative gathering, while the hall was well filled. The Lord Rector took as the theme of his address "Romance: What it Meant and When it First Came into the Literature of Europe." The address was erudite, scholarly, and closely reasoned, and was listened to with much attention and interest by the bulk of the audience, but some of the finest passages were marred, if not lost, by recurring noisy demonstrations from the top gallery. After the address Mr. Wyndham inspected the Officers' Training Corps in the quadrangle of the University.

Edinburgh Students' Union.

The Edinburgh Students' Union has attained its majority, having been in existence for 21 years. This interesting fact was honoured by the presence of the Lord Chancellor of the University, the Lord Rector of the University, Sir William Turner, the Principal, Sir R. Finlay, and others at a luncheon in the Union after the Lord Rector had delivered his address. The toast of "The Union" was proposed by the Lord Chancellor, who spoke of the position the Union had attained and of its value in the life of the student. In the evening there was a torchlight procession.

St. Andrew's Ambulance Association.

The Earl of Dalkeith, President, occupied the chair last week at the annual general meeting of the St. Andrew's Ambulance Association, which was held in the Merchants' House, Glasgow. The annual report showed that during the year 7947 calls were made on the wagons of the association, and the total number of patients conveyed since the formation of the association is now 107,897. In Glasgow alone the calls numbered 5077, which, leaving Sundays out of the calculation, gives an average of 16·22 turns-out daily. Of these calls 2428 were to accidents and 2649 to cases of illness. The association during the year conducted and examined 572 classes in "first-aid to the injured," and 55 in "home nursing and hygiene." Certificates of proficiency were issued as follows: First-aid, 5936; nursing, 793; re-examination vouchers, 429; junior first-aid, 444; total, 7602; making a grand total since the formation of the society of 95,524. At the meeting, Sir George T. Beatson moved that a Provisional Order be applied for by the association to enable it to transfer the Red Cross Fund held by it to the Scottish branch, British Red Cross Society, with the exception of a sum of £3500, part of the said fund, which is to be retained by the association to enable it to carry out obligations already undertaken, including those under the sanction of the War Office.

Aberdeen City Hospital: Inauguration of Extensions.

The extensions recently completed in connexion with the Aberdeen City Hospital were formally opened on Oct. 26th by Lord Provost Wilson in the presence of a large number of medical men and others from the city and district. Councillor Kendall Burnett, convener of the public health committee, presided, and in his introductory remarks stated it was now 33 years since the original hospital erected on the same site was opened. Previous to that time accommodation had been found for small-pox in a disused match factory at Mounthooly, which the town council had been forced to secure, owing to the Royal Infirmary refusing to take the small-pox cases. The site for the present hospital was acquired in 1873 at a cost of £2500 from the University of Aberdeen. The hospital as originally erected cost, exclusive of site, about £12,000. It had accommodation for 50 patients. In 1887, owing to a threatened epidemic of small-pox, a wooden pavilion was hastily run up at a cost of about £800. This pavilion was still in good condition. In 1893 large extensions were undertaken. Two of the four original pavilions were doubled in size; the accommodation for nurses and the kitchen accommodation were also enlarged. These additions were completed in 1900, and cost about £28,000. They raised the accommodation for patients to 126, with an allowance of 2000 cubic feet for each bed. Owing to the rapid growth of the city, necessity rose of making accommodation for a large number of cases formerly treated in the Royal Infirmary; and owing to a more extensive use of the city hospital for the isolation of zymotic cases it was felt two years ago that a further extension should be made. It was this extension, the cost of which was expected to amount to nearly £16,000, which was being opened. The total number of beds for patients would now be 184. This would provide about one bed for every 1000 of the population. Edinburgh, with a population about twice that of Aberdeen, had a fever hospital with 652 beds, while Glasgow, with a population of 850,000, had fever hospital accommodation for 1100 patients, exclusive of a proposed new small-pox hospital intended to accommodate from 200 to 300 patients. It could not, therefore, be said that Aberdeen was even now extravagantly provided with fever hospital accommodation. During the ten years preceding the year 1908 the average number of cases treated in the hospital was 733. In 1908 it had risen to 1346, and in 1909 it was 1213. The mortality among scarlet fever cases in the Aberdeen City Hospital had been for many years one of the lowest of any large hospital in the kingdom. It was only about 1 per cent. for the last two years. Provision had been made for the suitable treatment of a few phthisical cases. This provision for open-air treatment would be serviceable in the treatment of other zymotics, for example, typhus fever. The annual expenditure at the city hospital amounted in the last financial year to slightly over £8000, exclusive of salaries. In Glasgow the total expenditure on their fever hospitals was over £95,000, and in Edinburgh it was fully £45,000. In proportion to population, the expenditure on fever hospitals in Glasgow and Edinburgh was last year about twice that of Aberdeen. The Lord Provost, in declaring the buildings open, referred to the good done by the preventive work carried on by the public health committee. The party afterwards inspected the various buildings, and expressed

admiration at the thoroughly complete manner in which they were equipped.

Dundee Town Council and Fever Hospital Enlargement.

A meeting of the Dundee town council was held on Oct. 27th to consider the state of affairs as regards infectious disease, and particularly scarlet fever and diphtheria, in the city as disclosed by Dr. C. Templeman, the medical officer, in his report. The erection of a temporary building to cost £2100 was recommended by the public health committee, and the council in committee first discussed the matter and subsequently made it a town council decision. In the course of discussion it transpired that the number of cases treated at King's Cross had grown from 171 three years ago to 657 this year. Questioned as to the council's liability if they refused to take in scarlet fever cases, the town clerk stated that the law was not clearly defined in the matter. There were no decided cases, but the Local Government Board was advised by Crown counsel that local authorities were bound to provide hospital accommodation for infectious cases, or at least for all infectious cases where proper isolation could not be got at home. In reply to other questions, the medical officer stated that he did not think he would be justified in refusing a case recommended by a medical man, and that it would be impracticable for the corporation to treat cases in their own homes. It was ultimately resolved to erect a temporary building at a cost of £2100, and that power should be given to the committee to proceed with the work.

The Premier in Aberdeen: Rectorial Address.

The Right Hon. H. H. Asquith, as Rector of Aberdeen University, visited Aberdeen on Oct. 24th and 25th. On the 24th he was entertained by the Senatus to dinner, and thereafter viewed the torchlight procession from the windows of the hotel. On the 25th he delivered his rectorial address in the Mitchell Hall of Marischal College, referring in the course of it to the growing tendency to specialism, which had become a marked feature of university work, both in Scotland and in England, during the past 50 or 60 years. This was to the good in so far as it tended to promote erudition and accuracy, at the expense of that which was merely superficial and smart; but the advantage was purchased at an excessive price if it were gained by the sacrifice of width of range and catholicity of interest. A university which was content to perform the office of a factory of specialists was losing sight of some of its highest functions. The man whom the university ought to turn out as its finished product at the end of his university course ought to be in Bacon's own phrase "a full man." Riotous proceedings on the part of the students took place afterwards, in the course of which the carriage intended to convey Mr. Asquith from the University to the residence of the Principal was completely wrecked.

Royal Aberdeen Hospital for Sick Children: New Building Scheme.

As already stated, it has been decided to erect a memorial hospital to His late Majesty King Edward VII., and a special appeal has been issued on this behalf. The Royal Aberdeen Hospital for Sick Children has now been working for 34 years. From a small beginning in the autumn of 1877, with 14 beds, the hospital has so grown in usefulness as now to be regarded as a district institution for the North-east of Scotland. Year by year the number of children has risen steadily until, with a limited accommodation of 80 cots, the hospital is unable, through lack of space, apart from the inconveniences and difficulties of the present buildings, to cope with the demands upon its accommodation, many ailing children having unfortunately to be turned away. The hospital has always secured the deepest interest and the general support of the most prominent citizens, but this cannot make up for the notable defects of the present building. Never designed for a hospital—a makeshift from the start—it is now hopelessly out of date, and the time has come when the increasing demands of an ever-growing city and wide surrounding district indicate that a larger and more efficient building must speedily be provided wherein to carry on the work. To be at all adequate the new buildings will require to contain at the very least 100 beds, and it is estimated that the erection of such a building, capable of ready extension for future requirements on a suitable site, will cost from £30,000 to £35,000.

Nov. 1st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The School of the Royal College of Surgeons in Ireland.

THE School of the Royal College of Surgeons has recently had cause to fear the rivalry of the various new State-endowed schools, being itself the only self-dependent school of medicine in Ireland. Attempts were made to enlist the sympathy of the Government with the view of obtaining relief as a direct grant. These attempts failed and a somewhat dismal outlook faced the school. A method has been found, however, by which help has been obtained from Government sources. The Department of Agriculture and Technical Instruction has agreed to recognise a certain number of courses in the school as courses in technical instruction, and to pay a small capitation grant. It is expected that the contribution this session will come to about £1000, and in future it may be more. This grant is, of course, not very great, but it will give considerable relief to the finances of the school.

Pasteurised Milk in the South Dublin Union.

Some weeks ago a report was presented to the South Dublin guardians which reflected on the use of pasteurised milk in the nursery.[1] The guardians thereupon directed the medical officer in charge of the nursery, Dr. F. J. Dunne, upon whose advice pasteurised milk had been introduced, to report upon the condition of the nursery. At their last meeting, without waiting for Dr. Dunne's report, the guardians decided forthwith to give up the use of pasteurised milk and to return to the use of fresh cow's milk. It was pointed out by certain guardians that the question of diet was in the main a medical question, and that it would be wise to wait for Dr. Dunne's report, but a majority of the guardians thought otherwise. This decision is unfortunate, as it looks as if for some reason inquiry is being avoided, and this on a subject which has much exercised the public.

Conferring of Degrees at the National University.

The first public conferring of degrees in connexion with University College, Dublin, took place last Saturday, the Vice-Chancellor of the University, Sir Christopher Nixon, presiding. In his address the Vice-Chancellor drew attention to the insufficient provision made for building in connexion with the National University. It is stated that only a sum of £40,000 is available at present, and Sir Christopher Nixon claims that at least £200,000 is required. It was an unpleasant feature of the ceremony that both the Vice-Chancellor's address and the actual conferring of degrees were interrupted by the rowdyism of a certain number of the students.

Corporation Grants to the City Hospitals.

For some time back the question of the contributions of the Dublin corporation to the city hospitals has been under consideration, as it has been suggested that the poor of the city are not obtaining the corresponding benefits to which they are entitled. At the meeting of the finance committee Councillor Quaid, with the object of effecting, if possible, a reduction in union infirmary expenditure, "which had increased enormously owing to the exclusion of large numbers of Dublin people from the city hospitals," said it would be desirable to have a conference between the finance committee and the boards of the North Dublin and South Dublin unions with a view of formulating a scheme for the revision of the grants or for a more efficient application thereof by a system of capitation fees. This conference has since been held, but the results have not been made public. No representation has been made to the Dublin hospitals, but the charge that the hospitals exclude city for the sake of country patients seems to have no proof in fact.

Election of a Direct Representative to the General Medical Council.

The election of a Direct Representative for Ireland to the General Medical Council is to take place in January next. Dr. Leonard Kidd of Enniskillen is the present representative, having defeated the late Sir William Thomson in 1906, and he has announced his intention of again seeking election. Up to the present there is no suggestion of any other candidate being put forward.

[1] THE LANCET, Oct. 8th, p. 1106.

Irish District Councils and the Medical Profession.

In reference to the appointment of an inspector under the Dairies and Cowsheds Order, the Cookstown rural council had a motion some time ago before it to appoint a veterinary surgeon for the whole union at £50 per annum, but an amendment was carried to offer the positions to the dispensary medical officers at £7 10*s.* each, while the previous salary had been £15. At the weekly meeting on Oct. 22nd replies were read from the dispensary medical officers all refusing the offer, their reason being the inadequacy of the salary, which, it was stated, would not pay posting expenses. Two notices of motion were then handed in, one to appoint a veterinary surgeon for the whole district at a salary of £30 for a year, the other to the effect that the medical officers be reappointed at the old payment of £15 each for the year. The whole discussion and extraordinary action of the Cookstown rural council indicate the need of a reformed State Medical Service.

County Antrim Infirmary.

At a meeting of the Ballymena board of guardians held on Oct. 29th the replies from the various dispensary medical officers of the district regarding whether they approved of sending patients for special treatment to the Co. Antrim Infirmary, Lisburn, were considered. Of these nine replies, one, not having sent any patients, could not form an opinion of the usefulness of the infirmary, and one saw no objection to sending patients to the Lisburn Infirmary provided the necessary specialists were on the staff and always available in cases of sudden emergency. The remainder were against sending patients to the Lisburn Infirmary, either because of its distance or because they preferred sending special cases to special hospitals in Belfast. It was agreed by the guardians to send a patient requiring special treatment to the Lisburn County Infirmary, as they had to consider how to get some return for the £117 they subscribed towards upkeep.

Annual Dinner of the Cork Medical and Surgical Society.

The annual dinner of the Cork Medical and Surgical Society, recently held at the Imperial Hotel, Cork, was a distinct success. Dr. John Booth, the President, occupied the chair. After the toast of "The King" had been duly honoured, the Recorder of Cork proposed the toast of "The Cork Medical School." Professor H. Corby and Dr. P. T. O'Sullivan having replied, the President proposed the toast of "The Army and Navy," to which Colonel Dodd replied, and the toast of "The Guests," coupling the toast with the names of Dr. P. J. Macnamara of Kilmallock, and Mr. Barry Galvin, legal adviser to the Cork Corporation. Mr. Philip Lee proposed the health of the President.

Nov. 1st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Disastrous Fire at the Toulouse Faculty of Medicine.

A GREAT part of the buildings of the Toulouse Faculty of Medicine was destroyed by fire on Oct. 27th. In the morning smoke was seen to be coming from under the roof, the whole of which was soon burning furiously and fell in, the conflagration being aided by a high wind which was blowing at the time. The great library was entirely destroyed, but the laboratory escaped. Of the first floor and the superstructure nothing now remains; the ground floor and the principal front have also suffered greatly. The physiological amphitheatre, the large room used by the professors, the dean's office, the secretary's office, and other portions of the administrative department have quite disappeared, but the great amphitheatre and some outlying portions of the main edifice have not suffered at all. Buildings which have cost 880,000 francs are for the most part reduced to ruins. The structural damage amounts to about 450,000 francs, and, including the value of the library, the total loss will be nearly 1,000,000 francs. The fire is believed to have been caused by an electrical short-circuit.

The Mental Aberration of King Charles VI. of France.

At a meeting of the Academy of Medicine held on Oct. 25th M. Dupré made a communication on the subject of the mental condition of King Charles VI. of France. He said that this monarch, who suffered from inherited psychical defects, was of only moderate intelligence and low mental stability, and that for 30 years he had from time to time attacks of insanity alternating with lucid intervals; during these intervals, however, he was able to resume his position and duties as head of the State. His mind began to fail at the age of 24 years, some months after an illness which was probably typhoid fever, the first symptom of mental disorder being the celebrated attack which he had in the forest of Le Mans. An examination of the clinical features of this attack showed the association of maniacal excitement with confusional delirium.

Citrate of Soda in the Vomiting of Suckling Infants.

At a meeting of the Academy of Medicine held on Oct. 18th M. Variot described his investigations and his numerous observations on the beneficial action of citrate of soda in the vomiting of suckling infants. He said that this remedy, which was already in general use, ought to be given in doses of 1 or 2 grammes daily. Whether the vomiting be due to insufficient nourishment or to over-feeding, the administration of citrate of soda was in either case beneficial.

Oysters.

Speaking at a meeting of the Academy of Sciences on Oct. 24th M. Henneguy gave an account of some experiments which had been made with oysters kept in contaminated water. It was found that oysters which had lived in such water from the earliest stage of their existence became wholesome when transferred to filtered sea-water for a week or two. The sea-water used in connexion with the laboratory at Concarneau was filtered through thick layers of sand, and the oysters kept in this water did not deteriorate in either quality or flavour.

A New Symptom in the Diagnosis of Pulmonary Lesions.

At a meeting of the Academy of Medicine held on Oct. 18th M. Hirtz described a very important sign which will be of considerable assistance in the diagnosis of certain thoracic lesions. After having percussed the chest while the patient was breathing in the normal manner, he percussed it again whilst the patient was distending the thorax by a prolonged inspiration. If an area of dulness observed in the first percussion disappeared in the second one the inference was that the dulness was due to a pulmonary lesion and not to pleural effusion.

Sleeping Sickness.

M. Roux, director of the Pasteur Institute, presented to the Academy of Sciences on Oct. 24th a report on the researches of M. Roubaud, who has found that the trypanosoma, which was the cause of sleeping sickness, perished in seasons of drought, even in the proboscis of the tsetse fly by whose bites the disease was propagated.

Oct. 31st.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of the Syphilitic in Rome.

Professor Ciarrocchi, the well-known dermatologist and medical director of the Hospital of San Gallicano, has furnished me with the following particulars regarding the institutions existing in Rome for the treatment of persons suffering from syphilis. These institutions are of two kinds—namely, hospitals for the reception of the severer cases, and dispensaries or "ambulatorii" for those who are able to be up and about and do not require rest in bed. The Hospital of San Gallicano, founded in 1724, is that which receives the great majority of the former class of patients. It is an interesting old building in the Trastevere district of Rome, within a short distance of the Tiber, and in its large, lofty, well-ventilated wards affords accommodation for 250 beds, of which 150 are devoted to the reception and treatment of venereal cases, the remaining 100 beds being chiefly reserved for the victims of ringworm, a disease very prevalent amongst the peasantry in the Roman Campagna. This hospital forms part of the "Opera Pia degli Ospedali Riuniti di Roma," an independent and autonomous organisation with its own endowment. In the case of syphilitic patients, however, the organisation receives a subvention from the State, amounting to about 3 lire (2*s.* 5*d.*) per diem for each venereal patient treated at San Gallicano, in consideration of

the latter's utility in restricting the spread of syphilis. From 1500 to 2000 of such patients are received and treated in its wards every year. A limited number of syphilitic cases is received into the dermo-syphilopathic department of the Policlinico, which has about 50 beds at its disposal for this object, but these patients are taken in only for teaching purposes, and are small in number, funds not permitting of more than a few of the beds being so occupied. Persons suffering from syphilis affecting special organs are also received into many other hospitals in the city—those, e.g., with uterine forms into the Obstetrico-Gynæcological Clinics, those with ocular forms into the Opthalmological Clinics, and so on. In San Gallicano, as well as in the other Roman hospitals, patients with venereal complaints are placed in the ordinary wards more or less together with those suffering from ordinary diseases, the strictest precautions being at the same time observed to obviate any possibility of contagion, whether moral or physical, being conveyed to the latter. The absolute segregation and isolation of the syphilitic insisted upon in the past are no longer practised, having yielded unsatisfactory results. But the greater number of syphilitics, those, namely, that do not require to remain in bed, are treated at the Syphilitic Dispensaries ("Dispensarii Celtici"). Of these, there is one at San Gallicano itself, one at the Hospital of St. Antonio, a third at the dermo-syphilopathic department of the Policlinico, and six others in the various centres of the city. Each dispensary has its own medical director and one or two medical assistants whose duty it is to give consultations every day for two hours, in some dispensaries to men and women on alternate days, in others to both sexes indiscriminately on the same day, according to the accommodation available. Medicines are supplied gratuitously to the very poor, semi-gratuitously to others. Those dispensaries which are attached to the hospitals receive subsidies from the State, but the others are entirely supported by the State. The average daily number of patients treated at each dispensary is about 100. Following ancient tradition, some of the pharmacies put a room at the disposal of medical men for the treatment of dispensary patients, but there are no means of estimating the numbers of these. The routine treatment of the disease consists in the hypodermic injection of preparations of mercury, either in soluble or insoluble forms. Finally, for the army there is a special hospital for venereal diseases, that of Santa Croce in Gerusalemme. For the supervision of brothels and of prostitutes in Rome the law provides a special sanitary service under the control of the Government.

Early Recognition in Italy of the Infectiousness of Phthisis.

It is well known that the infectious nature of pulmonary phthisis has long been recognised in most of the Latin countries. This was more particularly the case in Italy, where, indeed, stringent laws have from time to time been enacted prescribing rigorous measures against its spread. For example, in 1754 the magistrate of public health of Florence decreed that each physician of the Grand Duchy of Tuscany should be obliged to denounce to the Tribunal of Public Health in Florence, and to the government commissioners and judges in the other provinces, any case of confirmed consumption under a penalty of 100 scudi; and later Ferdinand of Naples issued a decree ordering the destruction by fire of the clothing and effects of all persons dying from consumption. That a law was in force under the Papal government in Rome early in the last century would appear from the account given by Joseph Severn, the devoted friend of John Keats, in letters written before and about the time of the latter's death and now preserved in the Keats-Shelley Memorial House in the Piazza di Spagna in that city. Here is an extract from one of these dated Jan. 11th, 1821, addressed to Mrs. Bawne: "..... but the inhumanity, the barbarism of these Italians! So far I have kept everything from poor Keats, but if he did know but part what I suffer from them and their cursed laws, it would kill him. Just to instance one thing among many. News was brought me the other day that our gentle landlady had reported to the police that my friend was dying of consumption. Now their law is that every individual thing, even to the paper on the walls of each room the patient has been in, shall without reserve be destroyed by fire, the loss to be made better than good by his friends." Again, after Keats had died, and poor Severn was suffering from the effects of his unremitting devotion to his friend whom he had nursed single-handed during the last short weeks of his life, comes another outburst of wrath in a letter written on March 3rd, 1821: "These brutal Italians have nearly done their monstrous business—they have burned the furniture—they have done their meetings—and I believe, at least hope, no more of these cursed cruelties will take place"; and, again, "On the head of my partial collapse came an unlooked-for annoyance. The vile indiscriminating Roman law required that all the furniture should be burned and the rooms refurnished and every way restored. In this new disaster Dr. Clark [the eminent physician, afterwards Sir James Clark] was a true friend in need, and managed to reduce the charges to one-half the amount demanded from me. The whole affair was most distressing and shameful." And finally he writes: "The burning of the furniture took place in the Piazza di Spagna. Then the walls were all done up afresh." I may add in connexion with this burning of Keats's furniture that the caretaker of the Keats-Shelley Memorial House has heard the story of it from his mother, who was an eye-witness of the occurrence, which took place in the public square in the presence of a crowd of onlookers. The unfortunate victims of consumption and their friends must have suffered great hardships in these times, and Severn's strong language will, under the circumstances, be excused even by the objects of his anger. But at the same time the Italians have some reason to pride themselves on the early application in their country of these really enlightened if Spartan measures which later knowledge of the etiology of phthisis has shown to be largely warranted, and which are being adopted to-day by every civilised country, although no doubt in a milder and less oppressive form than they we apt to assume in that ruder epoch.

Oct. 29th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Scopolamine-Pantopon Narcosis.

Dr. G. Brüstlein, assistant surgeon at the Inselspital in Bern, has just published a paper on the use of pantopon and scopolamine to replace general chloroform or ether narcosis. Pantopon is a purified solution of opium. In a good many cases, especially strumectomies, the patients were walked in a semi-conscious condition into the operating-room and operated on without ether, though in some cases a small quantity of ether was still necessary. There was total absence of the feeling of suffocation, which is often distressing in ether narcosis. One and a quarter to one and a half hours before the operation one gramme of a 2 per cent. solution of pantopon was injected hypodermically; half an hour later the dose was repeated with the addition of 1/100 grain of scopolamine. Women only received one injection of pantopon, 2/3 grain, and 1/200 grain scopolamine. In over 100 cases this narcosis was followed neither by vomiting nor constipation. The solution must always be prepared just before use.

Centenary Celebration of the Medical Society of the Canton of Zürich.

On Oct. 19th the centenary celebration of the Medical Society of the Canton of Zürich took place. There was a meeting at the town-hall in Zürich, at which Dr. Hauser, the present chairman, who has just been appointed chief medical officer of the Swiss army, and also M. Lutz, member of the Government, made speeches. The banquet, attended by upwards of 300 medical men and their wives, took place at the town-hall, and many medical societies were represented. The leading medical journal of Switzerland, the *Korrespondenzblatt für Schweizer Aerzte*, whose editors are Professor Jaquet and Dr. von der Mühl of Basel, celebrated the occasion by issuing a double number containing a dozen valuable contributions by well-known medical men. Of these contributions I may mention the following: Professor Cloetta, on the Nature of the Diastole; Professor Eichhorst, on Infantile Alcoholic Neuritis; Professor Haub, on the Causal Treatment of Eye Diseases; Dr. Wilhelm Schulthess, on Scolioses and the School; Professor Silberschmid, on the Signification of Pathological Microbes; and Professor Wyder, on Early Rising after Childbirth.

Oct. 29th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Sunstroke and Insurance against Accidents.

A MAN recently sued a Hungarian accident insurance company under his policy on the ground that an attack of sunstroke from which he suffered was of the nature of an accident. The company, however, resisted the claim, pleading that sunstroke was not an accident but a disease, and that their policy holders were insured only against injury from unforeseen external violence. The word "accident" in the policy, from the company's point of view, was to be taken as employed in its ordinary sense—that is to say, as an occurrence not according to the usual course of things. It might certainly be by accident that a person became exposed to conditions leading to sunstroke, but the circumstances under which a person might be affected thereby ought to be classed, in the opinion of the company, among natural causes and natural phenomena, and these could not be correctly called accidents. The court decided in favour of the plaintiff, but the medical journals are not quite satisfied as to the justice of the decision. They say that if it is allowed to stand, then frost-bite, chilblains, and even "catching cold" would have to be placed in the category of accidents, and might be made the subject of claims.

The Treatment of Acne Rosacea by Tonogen.

In a recent article in the *Orvosok Lapja* Dr. Pór writes that the administration of digestive tonics and intestinal antiseptics is usually indicated in acne rosacea. In order to bring about the disappearance of the chronically dilated blood-vessels he has employed tonogen (an extract of the suprarenal gland) both as a topical and also as an internal remedy. The application of the extract to the affected area of skin for the first time determines slight transient hyperæmia, which is succeeded by pallor due to the contraction of vessels, but this hyperæmia is not usually observed after subsequent applications. Permanent improvement was observed by Dr. Pór within six weeks of the commencement of the treatment. The effects of the external applications were markedly enhanced by the simultaneous internal administration of the extract in doses commencing with one five-grain tablet thrice daily, gradually raised to six, the dose being reduced in the event of any unpleasant symptoms, such as giddiness or nausea. In cases of moderate severity the combined treatment proved very satisfactory, but it was sometimes found necessary to eradicate the enlarged vessels by the electro-cautery.

Variations in the Susceptibility of Guinea-pigs to Diphtheria Toxin.

At a recent meeting of the Medical Society Dr. Schiff, in speaking of the routine testing of the strength of diphtheria antitoxin, called attention to the usefulness of the antitoxin unit furnished by the Institute for Experimental Therapy under the direction of Professor Ehrlich. The one uncertain element was, he said, the relative resistance of the guinea-pigs to diphtheria toxin. It was found that different dealers furnished guinea-pigs of slightly different susceptibility, and on investigating the matter he discovered that the different degrees of resistance belonged to certain families or litters and were constant for those families. For instance, one mother gave birth to young which did not react to what was the usual fatal dose, and four successive litters possessed the same resistance. As each guinea-pig could be tested but once the precise degree of resistance could not be measured, but it appeared probable that this family could tolerate 40 per cent. more toxin when mixed with the antitoxic unit than those of average susceptibility. Other mothers were traced whose offspring possessed less resistance than the ones described, but could still neutralise 20 per cent. more toxin, when mixed with the antitoxin unit, than the average. Dr. Schiff said that experiments were now being made for the purpose of determining the part played by the male in the transmission of toxin resistance. In the case of the most resistant family, the four litters were the offspring of two males.

Paroxysmal Tachycardia.

Dr. Neress has reported an obscure case of heart disease which terminated fatally. The patient had had his attention called to his heart in boyhood by his medical attendant, and had always troubled himself about it. Attacks of fluttering, with changes in disposition, which varied with the character of the pulse, were the prominent features of the case. The physical signs were variable, signs of myocarditis with congestion of the liver and œdema of the feet gradually developing. There was no pain, but attacks of apparent angina occurred with fair frequency. At the necropsy fibrous myocarditis, sclerosis of the coronary arteries, and a thrombosis of the left ventricle were found. Many diagnoses had been made on this case, and it illustrated the great difficulty of recognising myocarditis in the early stage. Dr. Neress emphasised the importance of causing patients to make muscular efforts during the examination of the heart; a murmur which developed under such exercise was suspicious.

Oct. 29th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The Epidemic of Cholera.

SINCE I wrote last cholera has made its appearance in the Ottoman metropolis. This was, of course, anticipated, considering the near proximity of Russia and the enormous difficulties which the medical authorities at Constantinope have to contend with in order to take the necessary measures of prevention. Then again, it is well-nigh impossible to prevent an epidemic spreading to Constantinople, a city of great commercial importance and of imperfect sanitary conditions Happily, however, the weather is cool at present. Up to now the disease has made little progress, one or two deaths occurring daily, seldom more. According to the official reports, since Sept. 13th, when the epidemic seems to have made its first appearance, to Oct. 12th, there were registered 84 cases, of which 46 died. One of the great difficulties which the medical and municipal authorities of the metropolis, as well as of the provinces, encounter in combating the spread of the epidemic is, as in Russia, the incredulity and ignorance of the lower classes of the population. A great many of them do not believe that there is any cholera in Constantinople, and refuse to take the prescribed measures of precaution, spreading at the same time the absurd news that medical men "invent" cases of cholera in order to be able to draw money from the Budget assigned to combat the epidemic. In the provinces the behaviour of the people is still worse. In Trebizond, for instance, a medical man was mobbed for trying to bring help to the cholera-stricken. As in Russia, so also in some parts of Turkey, the populace firmly believe that medical men poison the wells of drinking-water, thereby causing disease and death for selfish personal interests. The Sanitary Commission continues to take rigorous measures. All suspicious quarters are visited and sanitary improvements are introduced so far as is possible in Constantinople, with its dirty and narrow streets, and a drainage system so antiquated. All the vendors whose stands are unclean are being fined or otherwise punished. This is done, for instance, in quarters like Tatavla, a valley beyond, and to the left of, Pera, where the sanitary conditions are exceptionally bad. It has also been decided to increase the number of the municipal medical men so as to enable them to visit the houses of the poorer quarters. I understand, too, that it has been thought necessary to issue a proclamation warning the population against throwing any refuse from doors and windows—a deplorable practice which is very much resorted to at Constantinople. A local paper announces that the *tchoptchis* (refuse gatherers) will henceforward call twice daily, instead of once, at each house, and that the number of street sweepers will be considerably increased. In Bagdad and its neighbourhood cholera is spreading, and a case of the disease is reported from Belgrade. The administration of the Oriental Railway Company states that the Bulgarian Sanitary Council has decided that all passengers, infected or non-infected, travelling beyond Zaribrod may pass Bulgaria without quarantine, provided that they are kept in a special carriage and do not come in contact with any person in Bulgaria.

A New Hospital.

I understand that the municipality of Constantinople intends to erect a new hospital in the quarter of Shehir Emin, beyond Ak Serai, in Stamboul. The *Osmanischer Lloyd* says that the plans are ready, and that the construction will begin in the month of March. The expense of construction will amount to £T50,000, and will be drawn

from the city budget. After the completion of the institution the hospital of "Gureba-i-Musselmin" of Yeni Baghtche Tchair will be transferred to it. The new hospital will contain rooms for private patients who are able to pay. The "Gureba-i-Musselmin," a Moslem hospital, which was much neglected during the *régime* of Abdul Hamid, is receiving at present adequate attention under the chief medical officer, Dr. Hussein Ihsan Pasha. The wards, the barracks, the operation room, and the laboratory are being completely renewed. It can now accommodate 300 patients.

The Sale of Poisonous Drugs.

The attention of the medical and other authorities is again drawn to the fact that the public in Turkey have every facility for obtaining poisonous drugs without any medical prescription. In Constantinople, for instance, it is very easy to procure corrosive sublimate without prescription at the different *actars* (druggist shops) and at the *Missir Tcharshi* (the so-called Egyptian bazaar). In the provinces it is, of course, still worse, as the lack of control and supervision there is very great indeed. Often the most poisonous medicines are taken by ignorant people in incredibly large doses, with results that can easily be imagined. The other day a young woman was taken, in a state of complete collapse, into the Jewish hospital at Balat, on the right shore of the Golden Horn, and soon afterwards died there. Investigation revealed that she had obtained, in the Egyptian bazaar, a large dose of corrosive sublimate and had drunk it in order to procure abortion. She already had seven children, and dreaded a further increase of her family. It is necessary, therefore, that the authorities should take all possible measures and precautions against the indiscriminate sale of poisonous drugs.

Earthquakes in the Provinces.

In Salour, *vilayet* Diarbekir, a violent earthquake has caused much damage, numerous buildings being injured and a number completely destroyed. Happily, however, there was no loss of human lives. Also in the *vilayets* in the neighbourhood of Diarbekir, as well as in the province of Erzeroum, violent earthquakes occurred, but details of these are wanting as yet.

Miscellanea.

The Children's Hospital at Shishli, beyond Pera and Taxim, will receive the services of a special medical attendant with a salary of £T10 monthly, whose duty will be to apply the Roentgen-ray treatment.—The Ministry of War is sending this year 20 military medical officers to Germany to complete their medical studies there.—Under the presidency of Madame Rifaat Pasha, the wife of the Minister for Foreign Affairs, a Red Cross Society has been formed, which has now issued its statutes.—The Turks have formed an Ottoman Anti-Alcoholic Union with the purpose of combating the increasing consumption of alcohol among Moslems.

Oct. 13th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Ethnology in West Australia.

Two ethnological expeditions have begun operations in West Australia. One is organised from Cambridge, under the direction of Mr. Alfred Brown, and the other is a Swedish undertaking in the charge of Dr. Eric Mjoberg. This latter expedition will cost £1100, the funds being provided by the Stockholm Academy of Sciences. It will proceed to the north-west and operate from Derby up the Fitzroy River. The Cambridge expedition has a double object in a study of aboriginal features and the collection of botanical specimens.

Radium for the Poor.

In response to the appeal by the *Sydney Daily Telegraph* for public subscriptions to a radium fund the sum of £2021 has been received, including £1400 as the result of a special *matinée* performance and collection by Miss Nellie Stewart.

Remarkable Record.

Mr. Justice Chomley of Victoria has been granted a year's leave of absence. The judge has been in the public service for 57 years, and during the whole of that period has not had a single day's sick leave.

Private Hospitals.

A new Bill has been introduced in Victoria to regulate the conduct of private hospitals. The definition is, "Any house, building, tent, or place (other than those excluded) in which medical, surgical, or lying-in cases are received or lodged, or in which it is intended that they shall be received or lodged for treatment, attendance, and cure, for which a charge is made." All private hospitals are to be registered annually. The licence is issued by the Minister for Public Health on the advice of the Board, but the former has absolute power. Every private hospital must at all times have a resident manager, and this person must be subject to the approval of the Board. Registration books must be kept and official inspection is provided for. The managers are required to give information respecting certain diseases and in the case of illegitimate births to notify the neglected children's department.

Bush Nursing Scheme.

The scheme for extension of district nursing to country areas, which was formulated by Lady Dudley, has practically been abandoned. Meetings were held in Sydney and Melbourne, but it was apparent that financial support would not be forthcoming from the general public and that the feeling amongst medical men and nurses was that the proposed new order of nursing was not required.

Melbourne Hospital.

Dr. W. Moore, the senior surgeon at this institution, has resigned his position on the staff after a tenure of 25 years. Under the new regulations Dr. Moore might have continued to hold the position for many years so far as age limit is concerned, but he has stated that his object in retiring is to give the younger surgeons an opportunity of advancement. Dr. Moore has been one of the leading figures in the surgical world in Australia for the past 15 or 20 years. His training is entirely Australian and he has not visited any of the old world centres. Dr. Moore will continue to hold his seat on the committee and take an interest in the affairs of the hospital.

Health of Sydney.

The annual report issued by Dr. W. G. Armstrong, the health officer, sets forth that the population of Sydney is now 592,000. The birth-rate was 26·11 per 1000 of estimated mean population, and illegitimate births formed 10 per cent. of total births. The recorded death-rate was 9·83 per 1000, the fully corrected rate, however, being 11·09. Scarlet fever figures were low, but diphtheria was higher than any year since notification became compulsory. 22 persons were known to be attacked by plague, of whom 7 died. Some of these belonged to the crew of a visiting steamer. About 68,000 rats and 8000 mice were examined, and 136 rats and 11 mice were plague infected. The death-rate from tuberculosis was 0·83 per 1000 living. Infantile mortality rate was 81 per 1000 births, which was the lowest yet recorded. The Pure Foods Act came into force on July 1st, 1909, and has so far been administered by the Board of Health, no administrative power having been granted to any local authorities. Generally the amount of food adulteration disclosed was not significant.

Melbourne Fever Hospital.

The Infectious Diseases Hospital at Fairfield, a Melbourne suburb, has been a fruitful source of complaint and dissatisfaction. The Government called for a report from the Board of Health, and under this it is probable reforms will be undertaken. The building is quite inadequate, leading to constant overcrowding. The charges for maintenance are excessive and it is recommended that they be abolished altogether and the hospital supported by Government grants and direct municipal aid. These reforms will meet the chief objections, which have related mainly to such gross overcrowding as placing two children in one bed and to the injustice of compelling comparatively poor parents to pay 7*s.* 6*d.* per diem for each child treated.

Parkinson Memorial.

To perpetuate the memory of the late Dr. T. C. Parkinson, who died from plague accidentally contracted while engaged in research work for the Indian Plague Commission at Elstree, Herts, the Sydney University has decided to establish a Parkinson memorial prize. The prize will be awarded annually, and the subject of examination will be pathology.

Oct. 1st.

Obituary.

SYDNEY RINGER, M.D. LOND., F.R.C.P. LOND., F.R.S.,

CONSULTING PHYSICIAN, UNIVERSITY COLLEGE HOSPITAL.

IN our issue of Oct. 22nd we announced briefly the death of Dr. Sydney Ringer, which took place at his country residence at Lastingham, Yorkshire, on Oct. 14th, in the seventy-sixth year of his age.

Dr. Sydney Ringer, in virtue of one of his books, possessed a name that is familiar to many generations of medical students, for the famous "Handbook of Therapeutics" ran through many editions, increasing in value and popularity to the end. His professional career was closely associated with University College Hospital, at which institution he held every post, and where he was at the time of his death emeritus professor of medicine. Like so many distinguished members of the medical profession Sydney Ringer was a Norwich man. Entering University College as a medical student, he took his earliest qualification in 1859 as Member of the Royal College of Surgeons of England and Licentiate of the Society of Apothecaries, the usual double qualification of that day. He was at this time 25 years old, and therefore a little senior to men of his class, which makes the fact that in the very year of his qualification he contributed a paper on Sound to the Transactions of the Royal Society more easily understood. In 1860 he matriculated in the University of London as M.B., proceeding three years later to the M.D. degree, in which year he took also the Membership of the Royal College of Physicians of London. He had at this time established quite a position as a medical writer, having contributed articles on Diabetes, Ague, and Scarlet Fever to the Transactions of the Medico-Chirurgical Society and also two articles upon Cardiac Murmurs to the *Edinburgh Monthly Journal*. In 1863 he was elected an assistant physician at University College Hospital, being also assistant physician at Great Ormond-street Children's Hospital, where he had filled the post of medical registrar, while he had worked also in Paris and at the Brompton Hospital for Consumption and Diseases of the Chest.

His election to University College Hospital gave him an opportunity of showing that he was an admirable clinical teacher. He would discuss any case that came before him in a systematic manner, contrasting the various symptoms in comparison with the maladies with which they might be associated, doing this, moreover, in a systematic and lucid manner and without any special preparation, which could hardly fail to be valuable to the students when the range of practical medicine with which he would deal came to be considered. His magnificent work in the out-patient department of the hospital gave him this close grasp of clinical medicine in all its phases. In addition to his learning and acuteness he had the great gifts of order and industry. Punctuality itself, he never was sparing of his time or of his energies, and was relentless in tracing to their first causes the meanings of any symptoms that presented themselves. This gave him a wonderful familiarity with any medical phenomena in whatever stage they presented themselves to his attention, and while allowing him to realise the difficulties which the students were feeling, enabled him also to meet those difficulties, both comprehensively and in detail, in the order in which he had taught himself to surmount them. University College Hospital was at that time a home of great clinicians. Walshe, Jenner, Parkes, and Reynolds, to mention four, in their several capacities were achieving high reputation by their interpretations of pathology and by the practical nature of the lessons they were able to base upon the solid foundation of their scientific equipment. Ringer, though his reputation as a clinician was largely overshadowed by the fame which he acquired as a pharmacologist, belonged essentially to their group, and generations of students are able to testify that they learned from his lips lessons of incomparable practical value while working in his wards.

Ringer was house physician to Dr. Parkes and his bent towards clinical medicine was greatly stimulated by the work of Walshe and Jenner. The fact that Ringer devoted himself at first to the pursuit of clinical medicine may perhaps be attributed to the influence of these teachers. All students of University College know what an exceptional clinician he was, how quick and accurate in observing and shrewd in the interpretation of symptoms, and how painstaking he was in comparing the findings of the post-mortem room with the observations and deductions made during life. He was also almost always engaged in investigating some point in clinical medicine or instigating others to do so. Thus some 25 years ago he caused one of his house physicians to make an extended series of observations on leucocytosis in various diseased conditions from the point of view of diagnosis, and later on was much interested in, and made many observations on, the significance of pulsation of the jugular veins. Clinical work absorbed a large portion of his time and energies, although the work that he did in the physiological laboratory of University College in pharmacology and physiology is that by which he will be remembered, more especially by those who did not come under his personal influence as a teacher of medicine. Ringer carried out numerous researches on the action of drugs and poisons on the functions of the body and was one of the first in this country to put pharmacology on a definite scientific basis, but important as this work was it does not compare with his really classical observations on the action of the inorganic bases such as calcium, potassium, sodium, &c., on the functions of living protoplasm. Ringer's observations on this subject were carried out by systematic experiments conducted during a long series of years with a marvellous degree of completeness and accuracy so that subsequent workers have found but little to add. He showed how the presence of these salts in small quantity was an essential of most forms of protoplasmic activity, and also how the members of one group tended to produce antagonistic effects to those of another group, and he illustrated this more especially in the case of potassium on the one hand and calcium on the other. These researches attracted the notice of physiologists at once, and from the time of their publication to the present their fundamental importance has been recognised more and more, and many of his results have now become the commonplaces of physiology. Ringer was a freely scientific physician with a very broad outlook so far as concerned the problems of living matter and possessed a fertile imagination which he controlled in all his work by the most rigid experimental tests.

We have endeavoured in this brief sketch to display Ringer in his double position as clinician and pharmacologist because, as has happened to other great men before him and as must inevitably happen again, his success in two somewhat different fields militated against his receiving, save from those who had intimate opportunities of estimating his worth, quite that high position in medicine to which his qualities entitled him. Had he not devoted a vast amount of time to the scientific work with which his name will ever be associated he might have attained to that high place in professional medicine which Sir William Jenner and others of his colleagues reached. Had he deserted clinical fields and consolidated his attention upon the work of the physiological laboratory his fame as a chemist would have been wider and his contributions to the advancement of chemistry more frequent. We may quote here a passage from *Nature* which puts the view very clearly which we have tried to express. "The solution of salts introduced by him (Ringer), and universally known by his name, is to-day to be found in every biological laboratory, and its use has led to developments in many fields of research. The work on which its composition is based has often received too little attention. This may be accounted for by the time at which it appeared: Ringer's work was done before the modern views of diffusion and dissociation of salts in solution found their way into biology. And the investigators who approached the study of the biological relations of the salts from the side of the new physico-chemistry appear to have overlooked the work of those who had investigated the subject without the aid of the newer methods. Quite recently, however, some amends have been made in this respect, and it is now recognised that the pioneer in this work had reached in essentials the same position nearly twenty years ago as has now been attained generally."

The factor which played the main part in somewhat preventing Ringer from obtaining the public recognition which he deserved was his unobtrusiveness. He was a very quiet reserved man in private life, taking no part in social affairs whatever, and no one, save those collaborating with him, ever heard from him much about his work, its objects and

developments. He made valuable and not infrequent communications to scientific journals, but, save in this way, he effaced himself as far as possible. In 1869 appeared his well-known "Handbook of Therapeutics," which in many directions, as we said ourselves at the time, revolutionised the sciences of which it treated. This manual ran through 14 editions, and at different times during its successful progress from issue to issue we noted the additions, subtractions, and modifications almost always with approval.

Dr. Sydney Ringer was in good health until two or three years ago, but recently a slight cerebral seizure caused his friends anxiety, taken in connexion with his advanced years. The symptoms, however, were passing off when on Oct. 13th a fresh seizure occurred from which he never rallied.

WILLIAM HALL, M.D. BRUX., F.R.C.S. EDIN., L.R.C.P. EDIN., J.P.

BY the death of Dr. William Hall, which occurred on Oct. 25th, Lancaster has lost a highly respected medical practitioner. Born in 1850, he was educated at the Lancaster Royal Grammar School, afterwards proceeding to Edinburgh, where he obtained the Licentiateship of the Royal College of Surgeons in 1871. In the following year he became a Licentiate of the Royal College of Physicians, and in 1886 obtained the surgical Fellowship and the degree of Doctor of Medicine at the University of Brussels. Upon qualifying he joined his father, with whom he continued in practice in Lancaster till 1883. After the retirement of Dr. Hall senior, the practice was continued jointly with Mr. J. H. Irvin, and was subsequently amalgamated with another practice. Dr. Hall was at one time district surgeon to the London and North-Western Railway and honorary local secretary for the Lancashire and Cheshire branch of the British Medical Association, of which branch he has filled the office of president. For 37 years Dr. Hall was connected with the Royal Lancashire Infirmary. In 1873 he was elected an honorary surgeon, and in 1880 he was appointed a trustee of the institution, subsequently becoming its president, an office which he held for two years. In the erection of the present infirmary he took an active part and was among those presented to the King when, as Duke of York, he opened the building in 1896. He took a great interest in public matters, and besides having filled the office of town councillor was one of the Charity Trustees. For 28 years he was connected with the 5th Royal Lancashire Artillery, from which company he retired with the rank of surgeon-major in 1899.

Dr Hall leaves a widow, the daughter of Colonel Cotton, whom he married in 1874, and five daughters. To the poor Dr. Hall was always a friend, and he will be greatly missed by them as well as by his many friends and the public generally. As a mark of respect the flags on the town-hall, the Royal Infirmary, and other public buildings in Lancaster were flown at half-mast when his death became known.

CHARLES EDWARD ADAMS, M.B., B.SC. LOND., M.R.C.S. ENG.

Dr. C. E. Adams, whose untimely death occurred at Buckhurst Hill after a long and painful illness, was only 49 years of age. He settled in Buckhurst Hill in 1885, the same year in which he qualified. He never spared himself in the interests of his numerous patients. Of a retiring nature, he never busied himself with public affairs, but, keenly imbued as he was with the high responsibilities of his profession, he created a reputation for himself as an able diagnostician and a sound clinician amongst his *confrères* in the district. In recent years he had taken a very leading part in the movement to provide a new and efficient hospital for the neighbourhood. Unhappily, he has not been spared to see the completion of this scheme. Apart from medicine he had educated himself to be an accomplished musician, and, what is unusual in an amateur, his talent lay in composition. For many years he was the conductor of the local musical society, and the president of the choral society. During his 25 years of active life in Buckhurst Hill he endeared himself to all classes and denominations by his sweet gentleness and never-failing courtesy. He was an ideal practitioner, combining the courtliness of the older generation with the keener scientific ideals of the later school.

M. KRÖNLEIN.

THE town of Zürich, and especially the medical faculty of the University, deplore the death of Dr. M. Krönlein, who for 29 years occupied the position of teacher of clinical surgery at the University of Zürich. Born at Schaffhausen in Switzerland in 1846, he studied in Zürich, took his medical degree in 1870, and immediately took charge of three surgical wards in the Franco-Prussian war. For three years he was Professor Rose's surgical assistant, from 1873 to 1881 he acted as first assistant to Professor von Langenbeck in Berlin, taking a similar charge in Zürich in 1881. He was well known in the medical world as the author of no less than 84 publications. We may here mention his contribution on luxations in the Encyclopædia of Billroth and Luecke, and his smaller works on the surgery of the brain and kidneys. He was the first in Switzerland to perform the operation for appendicitis and the first to extirpate with success a sarcoma of the lung. He was very active in university affairs, and, as dean and rector, took the greatest interest in the development of the surgical department. Appreciated alike for his conscientiousness, industry, and the thoroughness of his knowledge, hundreds of young medical men owe much to his teaching, and a goodly number of his assistants have to thank him for their advancement in life.

Dr. Krönlein died after several months of severe suffering from attacks of angina pectoris, succumbing on Oct. 25th; his remains were cremated on the 28th.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Joseph Forster, professor of hygiene in the University of Strasburg, who was an LL.D. of the University of Edinburgh, and a member of numerous medical and scientific societies and academies, and editor of the *Archiv für Hygiene*. He was born in 1844, and studied in Leipsic and Munich under Pettenkofer and Voit. His first professorship was that of hygiene at the Munich Veterinary School, but a year later he was appointed to the chair of hygiene in the University of Amsterdam, where he remained until he was invited to Strasburg to undertake the direction of the recently erected Institute of Hygiene and Bacteriology in 1896. He made many important researches on food sanitation and in bacteriology. Amongst other things he showed that a number of microbes not only retain their vitality at 0° C. but multiply and develop at that temperature so as to produce decomposition of tissues; also that the phosphorescent appearances often noticed in the sea are really due to micro-organisms.—Dr. William G. Daggett, lecturer on medicine in Yale.—Dr. G. Baumgarten, professor of medicine in Washington University, St. Louis.—Dr. Herbart, formerly physician to the Dunkirk Hospital.—Dr. Moritz Hofmann, formerly extraordinary professor of forensic medicine in the University of Munich.—Dr. J. V. Shoemaker, professor of materia medica and therapeutics in the Medico-Chirurgical College, Philadelphia.—Dr. Carey Kennedy Fleming, professor of abdominal surgery in the Denver and Gross College of Medicine.—Dr. J. P. Rottot, formerly professor of clinical medicine in the Montreal School of Medicine and Surgery.—Dr. A. Angelby, whose name is known as an enthusiastic worker in the field of the administration and management of French mineral springs.—Dr. Obdulio Hernandez, professor of external pathology in the University of Buenos Aires.—Dr. Rafael Herrera Vegas, a distinguished practitioner in Buenos Aires, who had been an honorary member of the Commission appointed to study and report upon the question of Yellow Fever.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next general meeting of this association will be held at 3 o'clock on Tuesday, Nov. 15th, at 11, Chandos-street, Cavendish-square, London, W., under the presidency of Dr. John Macpherson. There will be a meeting of the Educational Committee at 10 A.M., of the Parliamentary Committee at 11.30 A.M., and of the council at 12.30 P.M. In the evening the members will dine together at the Café Monico at 7 o'clock, the price of the dinner being 7*s.* 6*d.*, exclusive of wine. Evening dress will be optional. All communications should be made to Dr. C. Hubert Bond, honorary general secretary, 11, Chandos-street, Cavendish-square, London, W.

Medical News.

THE QUEEN'S UNIVERSITY OF BELFAST.—The following candidates have passed the D.P.H. examination:—

R. G. M. Clements, M.D., Charles Dickson, M.B., G. W. M'Comb, M.B., and *J. A. Sinton, M.B., D.P.H. Cantab.

* Passed with distinction and awarded special prize.

FOREIGN UNIVERSITY INTELLIGENCE.—*Altanta (College of Physicians and Surgeons):* Dr. Harry S. Bachmann of Philadelphia has been appointed Professor of Physiology.—*Berlin:* Dr. Lesser, Extraordinary Professor of Dermatology, has been promoted to an Honorary Professorship. Dr. Fritz Frankenhäuser (*privat-docent* of Medicine), Dr. Ulrich Friedemann (*privat-docent* of Hygiene), and Dr. Egon Thomasczewski (*privat-docent* of Dermatology) have been granted the title of Professor. Also, in connexion with the termination of the tenth of the study journeys, Dr. Oliven, Dr. Bassenge, and Dr. Kaminer have been granted the title of Professor.—*Bologna:* Dr. F. Caldesi has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Budapest:* Dr. Franz Gebhardt and Dr. S. Ritook have been recognised as *privat-docenten* of Medicine, Dr. R. Bálint as *privat-docent* of Neurology, and Dr. E. Scipiades as *privat-docent* of Midwifery and Gynæcology.—*Cincinnati (Ohio-Miami Medical College):* Dr. McElderry Knower, Adjunct Professor in Toronto University, has been appointed Professor of Anatomy in succession to Dr. Lewis.—*Cordova (National University):* Dr. Aquiles Villalba has been appointed to the chair of Bacteriology; Dr. Antonio Nores to that of Operative Medicine; and Dr. Alejandro Centeno to that of Clinical Medicine.—*Cracow:* Dr. Thadée Kozniewski has been recognised as *privat-docent* of Pharmacology.—*Heidelberg:* Dr. Zade of Jena has been recognised as *privat-docent* of Ophthalmology.—*Leipsic:* Dr. Hans Steinert, First Assistant in the University Medical Clinic, has been appointed Extraordinary Professor of Medicine.—*Munich:* Dr. Karl Kopp, *privat-docent* of Dermatology, and Dr. Wilhelm Herzog, *privat-docent* of Surgery, have been promoted to Extraordinary Professorships.—*Palermo:* Dr. Giacinto Viola of Messina has been appointed Professor of Internal Pathology.—*Parma:* Dr. Franco Carini has been recognised as *privat-docent* of External Pathology.—*Pavia:* Dr. Luigi Frigerio of Sienna has been recognised as *privat-docent* of Psychiatry.—*Philadelphia (University of Pennsylvania):* Dr. A. N. Richards, Professor in the Northwestern Medical School, Chicago, has been appointed Professor of Therapeutics and Pharmacology in succession to Dr. Edsall.—*Rome:* Dr. Augusto Giannelli has been recognised as *privat-docent* of Neurology.—*Sienna:* Dr. Teodoro Zoras has been recognised as *privat-docent* of Bacteriology.—*Toronto:* Dr. John A. Amyot has been appointed Professor of Hygiene in succession to Dr. Oldright, resigned.—*Tübingen:* Dr. G. Perthes, Extraordinary Professor in Leipsic, has been appointed to the chair of Surgery in succession to Dr. P. von Bruns, resigned.—*Vienna:* Dr. Vikkov Widakowich has been recognised as *privat-docent* of Embryology.

THE ANTIVIVISECTION HOSPITAL: A CASE IN THE CORONER'S COURT.—On Wednesday, Nov. 1st, a case was investigated at the Battersea coroner's court by Mr. John Troutbeck, who held an inquiry with respect to the death of an infant aged 9 months. Evidence was given to show that on Thursday, Oct. 27th, the child while at the house of an aunt was placed on the floor and seen to put a piece of coal to his mouth, when he "turned blue" almost at once. Concluding that he had swallowed some coal the child's uncle snatched him up and ran off with him to the nearest practitioner's. Here an examination failed to discover the presence of coal, but the medical man advised that the child should be taken to the Bolingbroke Hospital. This advice was not followed because there was no conveyance immediately available, but the baby was taken by a neighbour, who started with the intention of going to St. Thomas's Hospital, to the Antivivisection Hospital (the Battersea General Hospital), the symptoms having grown so alarming that the change of plan seemed necessary. In her evidence the child's aunt said that at the Antivivisection Hospital a nurse told her she must go to the relieving officer and get a paper because they were going to send the child to the infirmary. They had done what they could, the nurse said, and had used the stomach-pump, but could not find any coal. The nurse also said there must be an immediate operation. The coroner asked why the child should be removed, seeing it was already at a hospital. This question the witness confessed her inability to answer. Mr. Cartwright Sharp, who appeared on behalf of the hospital authorities, asked the witness if she was sure the nurse said anything about the stomach-pump. She replied that she was; and her husband said the medical man at the hospital told him the child had been ill two or three days and was suffering from scarlet fever and pneumonia in the right lung, and, moreover, was in a dying condition. "I'm certain of this," the witness said, when questioned by the coroner. He stated further that the doctor at the hospital said: "I can do nothing for the child here. You had better take him away." When the witness said he could not take him away, the doctor said, "Shall I telephone to the infirmary?"—The Coroner: Did the doctor give no reason for removing the child?—Witness: Yes; he said I haven't got a bed. We don't keep beds for children here.—The Coroner: Had you told him the child had swallowed coal?—Witness: I told him I thought he had. Mr. Sharp questioned the witness, who in the main adhered to his statements. The neighbour who had brought the child gave a slightly different version. She said the doctor at the hospital said the child had a rash coming out which might prove to be scarlet fever, and asked, "Will you take him home and have a private doctor or shall we send him to the infirmary, as we have no bed?" Dr. W. L. Maccormac, the assistant medical superintendent of the infirmary, said that he received a telephonic message from the sister at the Antivivisection Hospital. So far as he remembered, the message was that she was speaking on behalf of the resident medical man, as they had a baby at the hospital who required tracheotomy. Asked if it was diphtheria she replied "I don't think the doctor quite knows." Nothing was said about coal. When admitted the child was practically dead. Witness immediately put a tube in the windpipe, operating in the kitchen of the receiving ward. The child revived but afterwards developed pneumonia and died on Saturday night. On making a post-mortem examination he found a piece of coal jammed in the "voice-box." It would have been difficult to locate it, and to remove it would have required a rather heroic operation. The pneumonia was caused by the presence of the coal. Mr. Cartwright Sharp suggested that tracheotomy was an operation which required the administration of chloroform or the presence of a skilled assistant. "I had to do it single-handed," said Dr. Maccormac. The resident medical officer at the Antivivisection Hospital, said he examined the throat thoroughly but could find no foreign body. Although very ill, he did not think the child was *in extremis*. He ordered a hot bath and a mustard poultice, as he thought he discovered a patch of pneumonia. In view of the history of the coal, and having no bed, he thought it best to get the patient into some other public institution. The sister suggested the infirmary. He did not know she said "instant tracheotomy" or "tracheotomy" was necessary. The sister was a little enthusiastic and sometimes she exceeded her instructions. The Coroner observed that on this occasion her enthusiasm seemed to be well directed. "Tracheotomy has been done and the child died," said the witness. The Coroner asked what he meant. He replied that when he saw the child he did not see any indication for tracheotomy, which a juryman observed was "rather a feeble answer."—The Coroner: Why was this child not kept in?—Witness: We had not a bed.—The Coroner: Do you mean to say you could not make shift to put up a bed for a child of 9 months?—Witness: I daresay we might if we had thought of it. I thought the child would be better in an institution where there was a bed.—The Coroner: That's putting the hospital on a lower level than the infirmary.—Witness: I recognised the possible necessity of tracheotomy; that is why I sent it.—The Coroner: Why did you not do the tracheotomy yourself?—Witness: I thought it was not safe to do so without the assistance of someone at that stage.—The Coroner: Could you not have got assistance?—Witness: Not in the same time as in an institution where they have more capacity than we have. The father of the child heatedly asked for a further explanation. He was told by the witness that he thought the child could be best treated in a public institution where there were

more available appliances. He thought it quicker to send to another institution than to telephone for another medical man to assist him. They would probably not have come—they would have come, but they might not have come quickly. It was quite a matter of chance, while it was a certainty that the infirmary would take the case in, and that it would be properly attended to there. The Coroner, addressing the jury, remarked that it was difficult to understand the story of the child's reception and treatment at, and removal from, this general hospital. "I take no notice," he continued, "of the answer given me that the child had tracheotomy performed and it died. It is an unfortunate answer. I think it is better ignored." The jury returned a verdict in accordance with the medical evidence, and added this rider: "The jury do not appreciate the action of the Antivivisection Hospital authorities."

HUNTERIAN SOCIETY.—This society awards a silver medal annually for the best essay by a general practitioner embodying the results of his own observations. Intending candidates are reminded that the last day for sending in essays for the present competition is Dec. 31st, 1910. Any further particulars may be obtained from the honorary secretaries, 60, Welbeck-street, London, W.

SOUTH LONDON INSTITUTE FOR THE BLIND.—Lord Southwark, the president and chairman of the South London Institute for the Blind, has sent us an appeal on behalf of this institution, which is doing good work by educating and providing work for the blind and by supplying a home for young unmarried blind women. A sum of £2000 is required to meet existing liabilities. Contributions may be sent to the Rev. St. Clare Hill, 83, Borough-road, London, S.E. The bankers are the London and South-Western Bank, St. George's Circus, London, S.E.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—A meeting of this society was held on Oct. 21st. The accounts presented showed that the business of the society during the summer months had been as usual very satisfactory. The list of members permanently incapacitated continues to grow, but the ordinary sickness claims are fewer in number and of less duration than was expected, and, on the whole, there is a good margin in favour of the society. At each valuation of the society's business a special reserve is made in respect of the chronic sickness cases. Prospectuses and all further particulars may be obtained on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

ASSOCIATION OF MEDICAL OFFICERS OF HEALTH.—A council meeting of the association was held at the Holborn Restaurant on Oct. 19th, Dr. F. G. Crookshank being in the chair. The treasurer, Mr. E. G. Gibbs-Smith, reported a balance in hand. In accordance with the decision of the general meeting held in London, the terms of a letter to be sent to a number of societies and associations which represent the various interests of practitioners who hold public appointments under local and central authorities were discussed, and it was decided to ask for a preliminary meeting in which the interested societies could discuss the methods by which a mutual coöperation could be rendered possible. All communications should be made to Mr. D. A. Belilios, honorary secretary, at 109, Queen's-road, Wimbledon.

THE MEDICAL AND DENTAL DEFENCE UNION OF SCOTLAND, LIMITED.—The eighth annual general meeting of this union was held at Glasgow on Oct. 13th. Sir Hector C. Cameron occupied the chair, and there was a large attendance of members. The chairman, in submitting the annual report of the council, referred to the prosperous condition in which the finances of the union now stood. He stated that over one-fifth of the invested funds were derived from the excess of income over expenditure during the past year and that the fund now stood at £1849, which was equivalent to £1 10*s.* 2*d.* per member. He also referred to the insurance scheme under which, for a small premium, members are indemnified against claims of damages in the event of an action being unsuccessfully defended. In view of the fact that claims against members of the medical and dental professions are on the increase, the chairman emphasised the advice given by the council that every member of the professions in Scotland should not only be a member of the union but should be protected by an indemnity policy. The report was unanimously agreed to, and thereafter the election of office-bearers took place.

ARMY MEDICAL SERVICE.—An examination of candidates for not less than 15 commissions in the Royal Army Medical Corps will be held on Jan. 25th, 1911, and following days. The presence of candidates will be required in London from Jan. 23rd.

THE LONDON HOSPITAL MEDICAL COLLEGE.—We are desired to state that all members of the profession are cordially invited to the two lectures to be delivered by Mr. Hurry Fenwick in the clinical theatre of this hospital at 1 P.M. on Tuesdays, Nov. 8th and 15th.

THE M'CUNN SCHOLARSHIP.—Dr. A. Philp Mitchell, resident surgical officer at the Chalmers Hospital, Edinburgh, has been awarded the M'Cunn Scholarship in Surgery (value £100) open to all graduates of medicine of the Universities of Edinburgh, Glasgow, Aberdeen, and St. Andrews of not more than three years' standing.

THE ILLUMINATING ENGINEERING SOCIETY.—A meeting will be held at the house of the Royal Society of Arts (John-street, Adelphi, London) on Nov. 8th, at 8 P.M., when a paper on Recent Advances in, and the Present Status of Gas Lighting, will be read by Mr. F. W. Goodenough. The chair will be taken by the President, Professor S. P. Thompson, D.Sc., F.R.S.

THE TYNDALL SCHOLARSHIP.—This scholarship, which was founded by Mrs. Tyndall, widow of the celebrated scientist, for research in connexion with the welfare of miners, has been awarded by the Royal Society to Mr. T. L. Llewellyn, M.D. Lond. The subject of Dr. Llewellyn's research work for which the award has been made is Nystagmus.

GLASGOW UNIVERSITY CLUB, LONDON.—The members of this club will dine at the Gaiety Restaurant, Strand, W.C., on Nov. 25th, at 7.30 P.M. The Right Hon. Lord Curzon of Kedleston, Lord Rector of the University, will occupy the chair. Members who intend to be present, or to introduce guests, are requested to give notice as early as possible to the honorary secretaries, 4, Bryanston-street, Portman-square, W.

ROYAL INSTITUTE OF PUBLIC HEALTH.—Two lectures will be given by Dr. C. Levaditi of the Pasteur Institute, Paris, on Monday and Tuesday next, the 7th and 8th instants, at 5 P.M., in the lecture room of the institute. The first lecture will deal with Phagocytosis and its Importance in Immunity; the second with Recent Epidemiological and Experimental Researches on Infantile Paralysis.

LITERARY INTELLIGENCE.—A new edition of "A Text-book of Pharmacology and Therapeutics, or the Action of Drugs in Health and Disease," by Arthur R. Cushny, M.D. Aberd., F.R.S., is announced for publication by Messrs. J. and A. Churchill.—Mr. H. K. Lewis announces for early publication an entirely new work on "Medical Diagnosis" by Dr. W. Mitchell Stevens of Cardiff. Mr. Lewis also announces the immediate issue of a new booklet by Dr. Mildred Burgess on "The Care of Infants and Young Children in Health."

BOOKS, ETC., RECEIVED.

APPLETON, D., AND CO., New York and London.
Gynæcological Diagnosis. By Walter L. Burrage, A.M., M.D. Harv. Price 25*s.* net.

ARNOLD, EDWARD, London.
Hereditary Characters and Their Modes of Transmission. By Charles Edward Walker, M.Sc., M.R.C.S., L.R.C.P. Price 8*s.* 6*d.* net.

BAILLIÈRE, TINDALL, AND COX, London.
Gynæcological Therapeutics. By S. Jervois Aarons, M.D. Edin., M.R.C.P. Lond. With Foreword by Sir Halliday Croom, M.D., F.R.C.P., F.R.C.S. Price 5*s.* net.
A Study of the After-Results of Abdominal Operations on the Pelvic Organs, based on a Series of 1000 Consecutive Cases. By Arthur E. Giles, M.D., B.Sc. Lond., F.R.C.S. Edin. Price 10*s.* 6*d.* net.

BAILLIERE, TINDALL, AND COX., London. BUTTERWORTH AND CO., London.
Accidents in their Medico-Legal Aspect. By leading Medical and Surgical Authorities. Edited by Douglas Knocker, Barrister-at-Law. Price 30*s.* net.

BLACK, ADAM AND CHARLES, London.

Black's Medical Dictionary. Edited by John D. Comrie, M.A., B.Sc., M.B., F.R.C.P. Edin. Fourth edition. Price 7*s.* 6*d.* net.

CHURCHILL, J. AND A., London.

The Microscopical Examination of Foods and Drugs. By Henry George Greenish, F.I.C., F.L.S. Second edition. Price 12*s.* 6*d.* net.

Serum and Vaccine Therapy. Bacterial Therapeutics and Prophylaxis. Bacterial Diagnostic Agents. By R. Tanner Hewlett, M.D., F.R.C.P., D.P.H. Second edition. Price 7*s.* 6*d.* net.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. Puerperal Infection. By Arnold W. W. Lea, M.D., B.S. Lond., B.Sc. Manch., F.R.C.S. Eng. Price 25*s.* net.

Oxford Medical Publications. Clinical Pathology in Practice, with a Short Account of Vaccine-Therapy. By Thomas J. Horder, B.Sc., M.D., F.R.C.P. Price 7*s.* 6*d.* net.

Oxford Medical Publications. A Manual of Practical Inorganic Chemistry, including Preparations and Qualitative and Quantitative Analysis with the Rudiments of Gas Analysis. By A. M. Kellas, B.Sc. Lond., Ph.D. Heidelberg. Price 5*s.* net.

GRIFFIN, CHARLES, AND CO., LIMITED, London.

Technical Mycology: The Utilization of Micro-Organisms in the Arts and Manufactures. By Dr. Franz Lafar. Translated by Charles T. C. Salter. Vol. II.—Eumycetic Fermentation. Part II. Price 18*s.* net.

Transactions of the Medico-Legal Society for the Year 1909-1910. Edited by Digby Cotes-Preedy, M.A., LL.M., L.S.A., and William A. Brend, M.A., M.B., B.Sc. Vol. VII.

HODDER AND STOUGHTON, London.

The Round of the Clock. "The Story of Our Lives from Year to Year." By W. Robertson Nicoll. Illustrated by George Morrow. Price 6*s.*

LAURIE, T. WERNER, London.

A Natural Method of Physical Training, Making Muscle and Reducing Flesh without Dieting or Apparatus. By Edwin Checkley. Price 1*s.* net.

Nooks and Corners of Old London. By Charles and Marie Hemstreet. Price 3*s.* 6*d.* net.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

International Clinics. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, U.S.A., with Collaboration. Volume III. Twentieth Series, 1910.

LONDON PUBLICITY COMPANY, LIMITED, 379, Strand, London, W.C.

Diet and the Maximum Duration of Life. By Charles Reinhardt, M.D. Price 1*s.* net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

A History of the Cavendish Laboratory, 1871-1910. Price 7*s.* 6*d.* net.

Dental Surgery and Pathology. By J. F. Colyer, L.R.C.P., M.R.C.S., L.D.S. Being the third edition of Diseases and Injuries of the Teeth. By Morton Smale and J. F. Colyer. Price 25*s.* net.

Urinary Surgery. A Review. By Frank Kidd, M.B., B.C. Cantab., F.R.C.S. Price 7*s.* 6*d.* net.

METHUEN AND CO., LIMITED, London.

Man's Supreme Inheritance. By F. Matthias Alexander. Price 5*s.* net.

Preliminary Physiology. By William Narramore, F.L.S., M.R. San. Inst. Price 3*s.* 6*d.*

REBMAN, LIMITED, London.

Subconscious Phenomena. By Hugo Münsterberg, Theodore Ribot, Pierre Janet, Joseph Jastrow, Bernard Hart, and Morton Prince. Price 5*s.* net.

SAUNDERS (W. B.) COMPANY, Philadelphia and London.

Modern Surgery, General and Operative. By John Chalmers Da Costa, M.D. Sixth edition, thoroughly revised and enlarged. Price 24*s.* net.

Treatise on Diseases of the Skin. For the Use of Advanced Students and Practitioners. By Henry W. Stelwagon, M.D., Ph.D. Sixth edition, thoroughly revised. Price 25*s.* net.

Physical Examination and Diagnostic Anatomy. By Charles B. Slade, M.D. Price 6*s.* net.

A Text-book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D. Ninth edition, thoroughly revised. Price 24*s.* net.

SEELEY AND CO., LIMITED, 38, Great Russell-street, London.

Human Anatomy for Art Students. By Sir Alfred D. Fripp, K.C.V.O., C.B., M.B., M.S. Lond., F.R.C.S. Eng., Surgeon-in-Ordinary to H.M. the King, and Ralph Thompson, M.B., Ch.M., F.R.C.S. Eng., Senior Demonstrator of Anatomy, Guy's Hospital. With Drawings by Innes Fripp, A.R.C.A. Lond., Life-Master, South London Technical Art School, City Guilds; and an Appendix on Comparative Anatomy, by Harry Dixon, M.S.B.S. Price 7*s.* 6*d.* net.

SMITH, ELDER, AND CO., London.

Stocks and Shares. By Hartley Withers. Price 7*s.* 6*d.* net.

The Flint Heart. A Fairy Story. By Eden Phillpotts. With Sixteen Illustrations by Charles J. Folkard. Price 6*s.*

TAYLOR AND FRANCIS, Red Lion-court, Fleet-street, London.

Calendar of the Royal College of Surgeons of England. August 1st, 1910. Price 1*s.*

UNIVERSITY CORRESPONDENCE COLLEGE, Burlington House, Cambridge, and 32, Red Lion-square, Holborn, London, W.C.

University Correspondence College. The Calendar, 1910-1911. September, 1910.

UNIVERSITY PRESS, Cambridge.

The Coming of Evolution. The Story of a Great Revolution in Science. By John W. Judd, C.B., LL.D., F.R.S. Price 1*s.* net.

Heredity in the Light of Recent Research. By L. Doncaster, M.A., Fellow of King's College. Price 1*s.* net.

UNIVERSITY PRESS, Manchester.

The Evolution of Surgery. By William Thorburn, F.R.C.S. An Address delivered on October 3rd, 1910, at the Opening of the Medical Session, 1910-11. Price 6*d.* net.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London. ST. JOHN AMBULANCE ASSOCIATION, St. John's Gate, London, E.C.

Pye's Elementary Bandaging and Surgical Dressing. For the Use of Dressers and Nurses. Revised and partly rewritten by W. H. Clayton-Greene, B.A., M.B., B.C. Cantab., F.R.C.S. Eng., assisted by V. Zachary Cope, B.A., M.D., M.S. Lond., F.R.C.S. Eng. Twelfth edition. Price 2*s.*

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

CHARLES, H., M.R.C.S., L.R.C.P. Lond., has been appointed Anæsthetist to the Middlesex Hospital.

COOMBES, P. C., M.R.C.S., L.R.C.P. Lond., has been appointed Senior Assistant Medical Officer of the Surrey County Asylum, Brookwood.

EMSLIE, BELL, M.B., Ch.B., has been appointed Third Assistant Medical Officer at the Stirling District Asylum, Larbert.

GREEN, T. A., M.D., F.R.C.S. Edin., has been appointed School Medical Officer to the Bristol Education Authority.

HAWKSLEY, W. L., M.B., Ch.B., D.P.H. Liverp., has been appointed Assistant to the Medical Officer of Health for the City of Liverpool.

HEATH, H. LLEWELLYN, L.S.A., D.P.H. Cantab., has been appointed Temporary County Medical Officer to the Public Health Committee of the East Suffolk County Council in connexion with the Prevention of Plague.

LEGG, T. P., M.B., M.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to King's College Hospital.

MACASKILL, D. C., M.B., Ch.B. Edin., has been appointed Second Assistant Medical Officer at the Stirling District Asylum, Larbert.

MILNE, R., F.R.C.S. Eng., has been appointed Extra Assistant Surgeon to the London Hospital.

REES, W. T., M.R.C.S., L.S.A., has been appointed Medical Officer of Health for the Llanwrtyd Wells and Llandulas portion of Builth Union.

SUTHERLAND, H. G., M.D., Ch.B. Edin., has been appointed Medical Officer to the St. Marylebone Anti-Tuberculosis Dispensary.

SWAN, R. H. J., F.R.C.S. Eng., M.B., M.S. Lond., has been appointed Surgeon to the Cancer Hospital.

WALTON, A. J., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Dreadnought Hospital, Greenwich.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ARMY MEDICAL SERVICE.—Fifteen Commissions in the Royal Army Medical Corps.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road, Birkenhead.—Honorary Ophthalmic and Aural Surgeon. Also House Surgeon. Salary £100, with board, residence, and laundry.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £200 per annum, with rooms, fire, light, and attendance.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant for three months. Salary at rate of 52 guineas per annum.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House Surgeon. Salary £80 per annum with board, residence, washing, &c.

BOOTLE, COUNTY BOROUGH OF.—School Medical Officer. Salary £250 per annum.

BOURNEMOUTH, ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—Honorary Medical Officer.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with apartments, board, and laundry.

BRISTOL ROYAL INFIRMARY.—Honorary Dental Anæsthetist.

CANCER HOSPITAL, Fulham-road.—Surgeon.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £70 per annum, with board, lodging, and washing.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £80 per annum, with board, apartments, and laundry.

CRICHTON ROYAL INSTITUTION.—Two Crichton Fellowships in Pathology and Bacteriology. Salary £250 per annum each, with board, quarters, attendance, and laundry.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, &c.

EASTERN DISPENSARY, Leman-street, E.—Resident Medical Officer. Salary £120 per annum, with residence and attendance.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board, lodging, and washing.

FOLKESTONE, ROYAL VICTORIA HOSPITAL.—Resident House Surgeon. Salary £100 per annum, with apartments, board, and laundry.
FRENCH HOSPITAL, 172, Shaftesbury-avenue, W.C.—Second Resident Medical Officer, unmarried. Salary £50 per annum, with board and laundry.
GLASGOW, UNIVERSITY OF.—Examiner in Physiology, Examiner in Surgery (Systematic and Clinical), and an Examiner in Medicine (Systematic and Clinical).
GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.
HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with rooms, board, and washing.
INFANTS HOSPITAL, Vincent-square, Westminster.—Physicians' Assistant. Salary £80 per annum.
ITALIAN HOSPITAL, Queen-square, W.C.—House Surgeon for six months. Salary £60 per annum, with board and residence.
KING'S COLLEGE HOSPITAL, London, W.C.—Senior Surgical Registrar and Tutor.
LEICESTER INFIRMARY. – Assistant House Surgeon. Salary at rate of £60 per annum, with board, apartments, and washing.
LIVERPOOL, CITY EDUCATION COMMITTEE.—School Medical Officer. Salary £250 per annum.
LIVERPOOL INFIRMARY FOR CHILDREN, CLINICAL SCHOOL.—Resident House Physician. Salary at rate of £60 a year, with board and lodging.
LONDON HOSPITAL, E.—Medical Officer in charge of Department of Electrical and Physical Treatment.
MAIDSTONE, KENT COUNTY OPHTHALMIC HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.
MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80 per annum, with board, residence, and washing.
MANCHESTER ROYAL INFIRMARY CONVALESCENT HOSPITAL, Cheadle.—Assistant Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, with board and residence.
MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—House Physician. Salary £75 per annum, with board, residence, and washing. Also Honorary Dental Surgeon.
ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Second Junior Obstetric Assistant (female) for Maternity Department for three or six months.
ROYAL HOSPITAL OF BETHLEM, Lambeth-road, S.E.—Resident Physician and Medical Superintendent. Salary £750 per annum.
ST. PANCRAS INFIRMARY AND WORKHOUSE.—Assistant Medical Superintendent and Assistant Medical Officer. Salary at rate of £135 per annum.
STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.
STOBHILL GENERAL HOSPITAL, Springburn.—Resident Senior Assistant Medical Officer. Salary £150 per annum, with board and apartments.
STROUD GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.
SURREY COUNTY LUNATIC ASYLUM, Netherne, Merstham.—Second Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, and laundry.
TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon. Salary £80 per annum, with board, lodging, and laundry.
TORQUAY, TORBAY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, washing, &c.
UNIVERSITY OF LONDON.—Examiners.
VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £40, with board, lodging, and laundry.
WEST LONDON HOSPITAL, Hammersmith-road, W.—Physician for Diseases of Women. Also House Physician for six months. Board, lodging, and laundry allowance provided. Also Anæsthetist.
WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.
WIGAN, COUNTY BOROUGH OF.—Medical Officer of Health. Salary £500 per annum.
WREXHAM INFIRMARY.—Resident Medical Officer. Salary £100 per annum, with board, lodging, and washing.

Births, Marriages, and Deaths.

MARRIAGES.

BRYAN—SMYRK.—On Oct. 27th, at the Parish Church, Henley-on-Thames, Frederick Bryan, M.B., to Ellen Smyrk, youngest daughter of the late Frederick Smyrk, of Waltham Cross.
TOVEY—PRIESTLEY.—On Sept. 10th, at St. Peter's, Wellington, New Zealand, Arthur Hamilton Tovey, M.R.C.S. Eng., L.R.C.P. Lond., to Florence, daughter of the late William Hudson Priestley, of Liverpool.

DEATHS.

BUCK.—On Oct. 27th, at Springfield, Upper Clapton, N.E., Henry John Buck, L.R.C.P. Edin., aged 74 years.
HALL.—On Oct. 25th, after a brief illness, at Elmsfield, Lancaster, William Hall, M.D., F.R.C.S., J.P., aged 60 years.
PENNY.—On Oct. 24th, at Worthing, Charles Burnage Penny, M.B., M.R.C.S., L.R.C.P. Lond., aged 34 years.
WELCH.—On Oct. 25th, at Carrsleigh Cottage, Southborough, Surgeon-Colonel Francis H. Welch, F.R.C.S., Medical Staff (retired), aged 71 years.
WRIGHT.—On Oct. 25th, at Castle-place, Nottingham, Thomas Wright, M.D., M.R.C.S. Eng., aged 88 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A QUESTION OF FEES.

"A Canadian Physician" writes to us on this subject in reference to the letter signed "M.B., F.R.C.S.," in our issue of Oct. 15th. He contrasts the gratuitous treatment which he himself received at the hands of an American consultant physician with the payment of fees to an English aural surgeon whose services he had sought for his child. It is quite clear that general rules of professional conduct cannot be founded on one or two special incidents, and, as a matter of fact, "A Canadian Physician's" experiences are contradicted by other communications which we have received on the same subject. Most English practitioners, general or consultant, in all ordinary circumstances give advice to brother practitioners gratuitously, devotedly, and without stint. All operating surgeons, especially those who acquire a great reputation in some particular line, and all specialists cannot in all circumstances attend all the children of all the medical men of all the nationalities in the world gratuitously. It follows that to a certain extent every case must be judged on its own merits.

THE PROGRESS OF INTELLIGENCE.

To the Editor of THE LANCET.

SIR,—The clear conclusion anyone must draw on reading the extensive and costly advertisements of irregular practitioners and quack medicine vendors is that intelligence among the educated classes is at a very low ebb. For the dupes and credulous believers, who indirectly pay the enormous cost of these advertisements, are not the poor and uneducated, but the well-to-do and educated. I have at the present time under my care a clergyman, two University men, and a well-to-do City man, all of whom have been duped. One, with atheromatous arteries and high blood pressure, underwent a course of physical culture cure at an enormous expense! I cannot get from them any answer to this simple question, Why do you believe these poorly educated persons know more about disease than professional men whose education is special to the subject?

I am, Sir, yours faithfully,
New Cavendish-street, W., Oct. 29th, 1910. THOMAS DUTTON.

AN IMPROVED RAILWAY MILK-CHURN.

Mr. Harold Wickham, of "Caldbec," Station-road East, New Oxted, has submitted to us for inspection a model of his improved railway milk-churn, the chief merit of which is its dirt- and dust-excluding properties. The lid is deep and is removed entirely from the body of the churn in the same way that a lid is taken off a tin canister. There is a bayonet joint fastening it down, and a padlock is provided to prevent any tampering with the milk on its journey. The arrangement obviously provides against the contamination of milk which it sustains too easily during its transit either by rail or cart in the ordinary churn. The top of the ordinary milk churn is often a veritable trap for dirt, which finds its way into the milk. In Mr. Wickham's churn provision for ventilation is made and the churn appears to us to be as easily handled and moved as the ordinary railway churn.

DOUBTFUL PROGRESS.

To the Editor of THE LANCET.

SIR,—My attention has been drawn to a pretentious volume, profusely illustrated, entitled "..... in the XX. Century, Contemporary Biographies," the name omitted being that of a southern county. I trust that this work is the first and may remain the last of the kind, for it contains names of 150 medical men, nearly all accompanied with portraits and notices, generally much in excess of that allowed in the Medical Directory, some indeed running to between 30 and 40 lines of self-commendation and genealogy. The volume ends appropriately with similar notices and portraits of veterinary surgeons and breeders of sheep.

It has been said that progress is to be sought in the north, but truly in the south our profession would seem to be moving on. Whither?

I am, Sir, yours faithfully,
Oct. 31st, 1910. SLOW COACH.

MARTIN'S INHALER.

THIS inhaler, which was sent to us for an opinion by Mr. H. H. Sharland, optician, of 7 and 8, Thavies Inn, Holborn-circus, E.C., is of the ordinary wash-bottle type. It consists of a square bottle made of blue glass, provided with a cork through which two tubes are fitted, one (the shorter tube) serving as a mouthpiece, and the other a tube which dips into the medicament. The mouthpiece tube is provided with a valve which allows of the passage of the medicated air only in one direction, so that at no time can there be pressure in the bottle which would discharge the fluid through the dip-tube. We can see no special novelty about the inhaler; it is certainly simple, but doubt may be expressed as to whether it is as effective as other forms.

WANTED, A SUGGESTION FOR TREATMENT.

To the Editor of THE LANCET.

SIR,—Can any of your readers offer me any suggestions as to the treatment of my case? I am 70 years of age and in good health, no gouty or rheumatic history, no deposits or contractions of the tendons, abstainer, and eat moderately of animal food. For the last three months I have had some rheumatic arthritis in my knee-joints, with slight effusion. If I go out for a day's shooting I am stiff in my knee-joints for several days and there is always some tenderness and stiffness remaining. I have tried pot. iod., sod. sal., guiacol carb., and the Tallerman heat; the latter does me good, but I do not like to think that this common condition has "come to stay," and should be thankful for any help. I am, Sir, yours faithfully,

Nov. 1st, 1910. M.D.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1910:—

Nov. 4th–12th (London).—Ninth International Motor Exhibition.
,, 7th–12th (Cape Town).—Twelfth South African Medical Congress (1910).
,, 11th–19th (London).—Stanley Exhibition.

In 1911:—

May–October (Dresden).—International Hygiene Exhibition.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Birmingham).—British Medical Association.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September (Brussels).—Exhibition of Fractures.
Sept. 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
,, 18th–23rd (Sydney).—Australasian Medical Congress.
,, 24th–30th (Rome).—International Congress on Tuberculosis.
,, 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.
October (Cologne).—International Congress of Criminal Anthropology.

In 1912:—

September (Prague).—International Congress of Radiology and Medical Electrology.
September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
September (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

In 1913:—

(London).—Seventeenth International Congress of Medicine.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

TUESDAY.

SURGICAL SECTION (Hon. Secretaries—Jonathan Hutchinson, L. A. Dunn): at 5.30 P.M.

Debate:

On the Treatment of Fractures in the Neighbourhood of Joints (opened by Mr. Robert Jones (Liverpool) and continued by Mr. Warren, Mr. Lett, Mr. Whitelocke, Mr. H. J. Paterson, and others).

FRIDAY.

CLINICAL SECTION (Hon. Secretaries: Albert Carless, James Galloway): at 8 P.M.

Cases:

Dr. A. H. Miller: (1) Adiposis Diffusa; (2) Multiple Lipomatosis.
Dr. Eric Pritchard: Adiposis Diffusa.
Dr. E. Farquhar Buzzard: Tabes with Lumbo-sacral Arthropathy.
Dr. Arthur Latham: Infective Endocarditis, Blood becoming Sterile after Fifteen Months' Vaccine Therapy.
Dr. James Galloway: Painful Necrosis of Extremities.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury-square, W.C.

TUESDAY.—8 P.M., Mr. E. H. Farr and Mr. R. Wright: A Critical Note on Several Processes for the Determination of the Alkaloids in Colchicum Seeds.—Mr. H. Finnemore: Chemical Examination of a Series of Prunus.—Prof. H. D. Greenish and Miss D. Braithwaite: The Drug Room Beetle (Sitodrepa Panicla) (illustrated by lantern slides).

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Grosvenor-road, S.W.

WEDNESDAY.—5.30 P.M., Major C. E. Pollock, R.A.M.C.: Malingering.—Major S. L Cummins, R.A.M.C.: Guinea-worm in Egypt.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Clinical Meeting.

SOCIETY OF MEDICAL OFFICERS OF HEALTH, 1, Upper Montague-street, Russell-square, W.C.

FRIDAY.—5 P.M., Mr. W. A. Gant (Cambridge): The Foundation of School Dentistry.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY—5 P.M., Sir T. C. Allbutt, K.C.B.: Greek Medicine in Rome. (Fitz Patrick Lecture.)
THURSDAY.—5 P.M., Dr. W. Bulloch: The Problem of Pulmonary Tuberculosis considered from the Standpoint of Infection. (Horace Dobell Lecture.)

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY.—5 P.M., Mr. Shattock: Specimens illustrating Injuries and Diseases of Arteries. (Museum Demonstration.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. G. Little: Clinique (Skin). 5.15 P.M., Lecture:—Dr. D. Ferrier: Traumatic Neuroses.
TUESDAY.—4 P.M., Dr. P. Parkinson: Clinique (Medical). 5.15 P.M., Lecture:—Mr. F. C. Wallis: Cancer of the Rectum.
WEDNESDAY.—4 P.M, Mr. J. Cantlie: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. F. C. Wallis: Cancer of the Rectum.
THURSDAY.—4 P.M., Dr. W. Carr: Clinique (Medical). 5.15 P.M., Lecture:—Mr. F. C. Wallis: Cancer of the Rectum.
FRIDAY.—4 P.M., Mr. E. Clarke: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. R. Lloyd: Anæsthetics.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Pritchard: Medicine.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.
THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Abraham: Cases of Skin Disease.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 4.30 P.M., Special Lecture:—Dr. C. Hughes: Anæsthetics.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 3.30 P.M., Special Lecture:—Mr. Cargill: Ulceration of the Cornea.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4 30 P.M., Special Lecture:—Dr. C. O. Hawthorne: Infantile Scurvy.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).
TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. H. Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting). 4.30 P.M., Lecture: Mr. Carson: Acute Abdominal Conditions.
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Dr. A. E. Giles: Vicarious Menstruation.
FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. Howell Evans). 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

MONDAY.—5 P.M., General Meeting.

LONDON HOSPITAL MEDICAL COLLEGE, Clinical Theatre, London Hospital, Mile End-road, E.

TUESDAY.—1 P.M., Clinical Surgery Lecture:—Mr. E. H. Fenwick: The Diagnostic Aspect of the Pain in Kidney Disease.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. H. Howell: Specimens illustrating the Pathology of Paraplegia.

FRIDAY.—3.30 P.M., Clinical Lecture:—Mr. P. Sargent: Cervical Ribs.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Dr. Atkinson: Nose.

FRIDAY.—3.45 P.M., Dr. D. McKenzie: Labyrinth.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Dr. Inman: Laboratory Diagnostic Methods.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Syphilis (continued): Papular (I., Miliary; II., Lenticular; III., Squamous; IV., Moist). Pustular and Tuberculous.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. Bythell and Dr. C. Moore: The X Ray Examination of the Stomach by means of Bismuth Meals. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (7th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.),

TUESDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (9th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (10th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (12th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
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THE LANCET Office, Nov. 2nd, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct. 27	29·94	E.	...	63	57	53	52	54	Overcast
,, 28	29·69	S.E.	0·29	92	61	50	50	51	Raining
,, 29	29·84	E.	0·04	62	55	49	50	50	Overcast
,, 30	29·90	N.	...	60	52	46	47	49	Overcast
,, 31	29·92	N.	...	63	56	45	45	47	Overcast
Nov. 1	29·10	S.W.	0·43	77	53	47	48	49	Raining
,, 2	29·23	N.W.	0·03	69	48	41	39	42	Cloudy

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REGIUS PROFESSOR OF PHYSIC IN THE UNIVERSITY OF CAMBRIDGE.

LECTURE II. *

PRESIDENT AND FELLOWS,—My last lecture ended with an allusion to the poison lore of the ancients, a literature in itself; with an allusion therefore I had to be content for time presses, and we must turn to other and less sinister subjects. And none in this period is of greater historical interest than the pulse doctrines.

Pulse doctrine.—Broadbent, in the introductory chapter of his treatise on the pulse, set forth the Galenic doctrines sufficiently for his own purpose; but on this occasion we may fitly endeavour to trace more fully and particularly the researches on the circulation of the blood from more ancient times, from Praxagoras of Cos, in the succession of Diocles, through Athenaeus down to Galen, to whom we are chiefly indebted for what we know of the subject. That to feel the pulse was a common practice we note incidentally in such comparatively early passages as:

> "Tange, miser, venas,
> ..... nil calet hic."
> (PERS. Sat. IV.)

and "*Et peragit soliti vena tenoris iter*" (Ovid in Letter X. to Flaccus, speaking of cold and languor without fever). Galen wrote many essays on the pulse, and from his fourth, fifth, eighth, ninth, and nineteenth books, in which he gives a summary and a criticism of the various pulse doctrines from Herophilus to Archigenes, especially in the Περὶ τῶν σφυγμῶν and the Περὶ διαφορᾶς τῶν σφυγμῶν (IVth Book); and from some other sources, as in a certain pseudo-Galenic pneumatist treatise, from a pseudo-Soranic tract published by Rose (Anecdota Gr. II.), and especially from the treatise on the pulse usually attributed to Rufus of Ephesus, a fairly definite reconstruction of the pulse-lore of the ancients has been attained. Galen's main source was a lost treatise—Περὶ σφυγμῶν—of Archigenes,[47] some fragments of which he quotes; though the first treatise on the pulse (Περὶ παλμῶν) was written by Aegimius of Elis, of the period of Hippocrates. But I may take Praxagoras as the first physician to give the pulse its due place in diagnosis and therapeutics. Unluckily Praxagoras taught that the arteries were air channels only, a dogma which provoked grievous dissensions, errors, and abuses through later ages. It would seem that Chrysippus also had emphasised the value of the pulse as a criterion of fever.

In the next place we come to Erasistratus, who described the valves of the heart, the chordæ tendineæ, and the several regions of the arteries and veins in heart and liver more accurately than Herophilus, whose attention was directed rather to the anatomy of the brain. Erasistratus showed by experiments that the arteries contained blood, and he recognised the function of the heart as the prime mover of the circulation. This great master got very near the truth of the circulation, to a point of view too soon to be perverted by pneumatist and other notions, for which he himself was not altogether without responsibility, or, indeed, to be lost sight of in that empirical indifference to anatomy to which I have referred. This insight of Erasistratus (c. 340–324 B.C.) is of much historical importance; for, as we have seen in respect of Praxagoras, before his time the arteries during life were supposed to contain air only—thin air, breath, vapour, spirit, pneuma. It is well, therefore, to quote the very words attributed by Galen (V. 552) to Erasistratus, which are as follows: ἅμα μὲν ἀρχὴν καὶ ἀρτηριῶν καὶ φλεβῶν εἶναι τὴν καρδιάν, ἅμα δὲ τοὺς ἔξωθεν ἔσω νεύοντας ὑμένας ἐπὶ τοὺς εἰσάγουσι τὰς ὕλας ἀγγείας ἐπιπεφυκέναι, φάσκοντος. This Galen repudiated, for how, said he, could the veins originate in the heart when the blood for them is made in the liver? The remarkable hypothesis by which Erasistratus endeavoured to reconcile the new and the old notions of the arterial contents was, that at certain undefined places in the circulatory tree there were communications—anastomoses—between the veins and the arteries; channels which under ordinary circumstances he seems to have assumed to be closed or but sparingly permeable, but in case of lesion or disease opened, so that the blood streamed into the arteries (παρέμπτωσις) and became one of the causes of fever. To this hypothesis in respect to hæmorrhage we shall return, for certain therapeutical means were founded upon it.

Yet strangely enough, both as regards the physiology of the circulation, and in medicine, the Erasistrateans paid less attention to the pulse than did the Herophileans, perhaps because of their reluctance to bleed. In their clinical appreciations Herophilus and his immediate disciples seem to have been properly content with four excellent indications of the pulse—namely, size, strength, rate, and rhythm; but the later disciples of his school too sedulously and fancifully overargued its signs, splitting them into a multitude of unreal categories. Archigenes, of whose elaborate treatise, under the title of Περὶ σφυγμῶν, Rufus gives some account, and of which some excerpts have survived, in his recognition of eight categories only "as generally known," was economical. However, his modest eight, it would seem, we must make into ten; for on turning to Daremberg's Rufus we find that "hard and soft," as qualities of "systasis and dialysis," are to be distinguished from "strong and weak," as qualities of tone. These eight, or ten, categories (λόγοι) Galen appears, from his two works on the pulse and a certain pseudo-Galenic chapter, to have adopted (Wellmann). These and other minutiæ, such as pulses hot or cold, dry or moist, &c., if in themselves idle or absurd, are nevertheless serviceable as clews to traditions and authenticities.

When from such records as remain we endeavour to reconstruct the pulse and respiration doctrine of the Pneumatists in the time of Athenaeus—say in the reign of Claudius—they seem to have been after this form. The pneuma, divine energy, or world-soul, permeated the body as πνεῦμα ζωτικόν: but, as Erasistratus taught, it reached the heart by respiration through the lungs as πνεῦμα ζωτικὸν and πνεῦμα ψυχικόν; whence the πνεῦμα ζωτικὸν "sped like a bird" through the arteries and the body, while the πνεῦμα ψυχικὸν was delivered to the brain (Chrysippus). Now as the pneuma reached the heart it met with the blood, both in the arteries, which had their roots in the heart, and in the ventricles; but in the ventricles crasser blood was in excess, in the arteries pneuma. "The arterial blood was thinner, purer, and redder." It seems at this time to have been generally held, in spite of Erasistratus, that the veins had their roots in the liver.[48] The movements of the circulation, systole and diastole, were kept up by the innate heat, identified by the pneumatists with the pneuma, as a single entity; and the harmonious rhythm of these motions was a sign of health. Thus the Praxagorean notion, that the arteries contained pneuma only, appears for the time to have been definitely set aside; though in comparing these records we are often perplexed by equivocal terms. Aristotle seems to have been unaware of the distinctions of Praxagoras between arteries and veins, except in respect of the aorta and venæ cavæ; and he supposed the heart to consist of but three chambers. Especially in this respect we are perplexed in Aristotle, and elsewhere, by the uncertain meaning of the word φλέβς, or *vena*, although Herophilus and Erasistratus clearly distinguished arteries from veins, and the left from the right heart. Celsus, whose testimony in respect of Alexandria is very important, uses *vena* to signify blood-vessels (including arteries); yet he uses the word "*arteriae*" also, on the whole with a definite meaning, and anatomically in our sense—as, for example, "itemque arteriae quas καρώτιδες vocant" (IV. 2); though we observe that with them he classes that main pneumatic channel the *aspera arteria*, or windpipe. And here I may conveniently anticipate matters so far as to say that Galen must have accepted the truth that the arteries contained a

* Lecture I. was published in THE LANCET of Nov. 5th, 1910, p. 1325.

[47] For these paragraphs I am again indebted to Wellmann in his *Pneumatists* and in Susemihl; to Daremberg's *Rufus*; to Celsus himself; to the relics of Archigenes, &c.; and to various commentators on Aristotle and the later sources.

[48] It is worth notice that the Chinese to this day, I am told, think that the right pulse tells the state of the liver, the left the state of the heart.

redder and more ethereal blood[49]; for, as we all know, he assumed the existence of pores in the ventricular septum. He was also aware that the heart was the centre and source of the pulsations, and showed experimentally that if an artery were ligatured—the femoral, for instance—pulsation continued between the ligature and the heart, but ceased beyond it; an observation however which, if taken alone, would not have satisfied those pneumatists who attributed pulsation to the throbbing of the pneuma only, an idea which may now occupy our closer attention. With Galen the difficulty was to understand how Nature, "which does nothing in vain," came to make two different kinds of vessel for the carriage of the blood.

It seems to me then rather difficult in the obscurity of the traditions to discriminate between the great Alexandrians as concerns their anatomical and physiological views respectively, or, indeed, to compare them with precision, though it is clear that in the clinical observation of the pulse the Herophileans were distinctly in advance; but it is probable that not Herophilus only, but also the contemporary Alexandrian School generally, attributed the energy of the arterial pulsation to the heart as the chief seat of the animal pneuma, or innate heat. Moreover, herein they certainly established the important conception of the heart and blood-vessels as an integer, or functional unity; a conception in later times too often forgotten. The pulsation itself they divided into four periods—a contraction, an expansion, and two pauses. Whether both these motions, or only one of them, used energy seems to have been a point of some disagreement; though, as the distinction between cardiac and arterial systole is often obscure, and is not always made quite clear even by Wellmann, it is not quite easy to be sure of the grounds of this dissent. However, to start with, we ascertain from a passage in the 8th volume of Galen (755) that, although in the Herophilean opinion (Susemihl) the systole only used energy, the diastole being mere recoil, according to the later (Roman) school of Athenaeus energy was expended both in systole and in the diastole. The passage being an important one I quote it in the original: "*οἱ δ' ἀπ Αθηνάιου πάντες, ὥς εἴρηται, τὰς κινήσεις ἀμφοτέρας ἐνεργείας ἡγοῦνται, τήν τε ἐν τῷ διαστέλλεσθαι γινομένην καὶ τὴν ἐν τῷ συντέλλεσθαι.*"

Now in some sentences it appears to me that, contrary to our customary use, by systole was intended the lift of the artery, whereas in others, as where it is disputed whether the systole of the pulse can be felt or not, clearly the arterial fall was intended. Moreover, it has been pointed out, I think already on a suggestion of the late Professor Magnus, that many of these writers, at any rate, supposed the heart and the arteries to swell and collapse together; this I had myself observed and illustrated by the following passage: "*δι' ὀγκωσις καὶ συνίζησις αἰσθητὴ καρδιάς καὶ τῶν ὁμοιοπαθούντων αὐτῇ.*" Dicroty, as we gather from Galen, was regarded as a second weaker beat; an explanation which he accepts, comparing it to the second tap of the hammer on the anvil, the anvil being the *σκληρότης* (inertia) of the arterial wall (*σῶμα*).

The Roman pneumatists, even of the ability of Archigenes, hampered as in part they were by the Methodist abstractions of *strictum* and *laxum*, lost sight of some invaluable clinical inferences from qualities of the pulse, which had been perceived by the Alexandrians, and which Galen restored. For instance, these later pneumatists—as we find in Athenaeus, Agathinus, Herodotus, and Archigenes—got entangled in arguments between blood content and pneuma content; and between tone (*τόνος*) as pneuma, and tone as a quality of the arterial wall (*κατὰ τὸ σῶμα τῆς ἀρτηρίας*). In such fragments of Archigenes as we possess (Wellmann) we find this confusion between blood content, pneuma content, and arterial wall. And I may note here, a little before due time, that, so far as I know, Galen was the first to point out that the arterial wall is liable to sclerotic degeneration. So, if we try to get behind these confusions, we shall apprehend that the Alexandrians, nurtured in a more scientific school, had in respect of the circulation perceived certain most important truths afterwards obscured, and that to these forerunners Galen owed not a little, how much we cannot now tell. I may add further this notable instance, that in respect of plethora the difference was then discerned between a long (or sustained) and a short beat, as definitely contrasted with degrees of frequency of beat; and again between the "broad" (*πλατὺς*) pulse—as of a relaxed artery with large output, and an ill-filled pulse. The high pulse (*celer*) of the former case was also described by them; so that they regarded the big pulse (*μέγας*) in three dimensions.

In systole the pneumatists considered that air (pneuma) was drawn in, and in diastole the fuliginous excrement expelled; thus they forwarded the scientific conception of diseases as perversions of the normal. It was especially true of Erasistratus that he fully grasped this idea, only too soon to be vitiated, that disease is a perversion of health, of the normal processes; not a condition contrary or foreign to biological nature. To take a very interesting example: to those of my hearers who are conversant with music the name of Aristoxenus of Tarentum, a pupil of Aristotle, is not unfamiliar, as of one who conceived, or on behalf of his musical tutor recorded, a masterly contribution to the theory of music. Now Aristoxenus flourished in the fourth century just before Herophilus; and it is interesting to find that in his description of the rhythm and arrhythms of the heart Herophilus used the terms of Aristoxenus. For example, in illustration of the idea of morbid as but deviations from normal processes, Herophilus distinguished certain cardiac rhythms as characteristic of periods of life. The rhythm of infancy, he said, was a pyrrhic (∪∪); of adolescence a trochee (-∪); of middle life a spondee (--); of age an iambus (∪-). I am not now concerned to justify these descriptions precisely, but to present them as patterns of method, and of a sound kind of pathology. After him Archigenes likewise described and compared taxic and ataxic pulses—gallop rhythms, palpitations ("spasms") of the pulse and the like—as various degrees of deflexion from the normal into the abnormal. This fruitful conception of the nature of disease unfortunately became distorted by demonology with its magical cures; and also by the kindred if more spectral hunt of the metaphysicians after "morbid entities," a cry which finds an echo in the words of some eminent physicians even of to-day.

After the pulse lore of these schools, I would make some reference to their doctrines on *sexual generation;* for herein also we revere the memory of our immortal Harvey. And when, in comparing his results in this field with those on the physiology of the circulation, we dare to reflect that, as in the times of which we are speaking, even supreme genius cannot penetrate far beyond the limits of contemporary knowledge and means of research, we cast no shadow on that great memory. The problem of generation, as it presented itself to the ancients, is too difficult to put succinctly without a renunciation of much of its detail and of the history of many tides of opinion. Moreover, to make the argument comprehensible, I cannot quite confine myself to the pneumatists; I must make some more general reflections upon its phases from Hippocrates through Aristotle to Galen, that I may indicate the stage where the pneumatists came in. Our sources in this respect are, however, very scanty, and turn chiefly upon what is recorded in Galen's Περ. *σπέρματος* (IV., 593).

Concerning the respective virtues of male and female in the generation and development of the embryo, the opinion of Hippocrates is clear—that the ovaries corresponded to the testes, and that male and female both contributed seed. The superb anatomy of Vesalius left this physiological notion of the matter unaltered, until the seventeenth century when it was undermined by the labour of Highmore, Stensen, and de Graaf. After Hippocrates we come to the opinions of Aristotle, which are too well known to need a careful description here. Suffice it to say that this great sage firmly and consistently denied that the female contributed seed; the semen, the finest concoction of the male blood, as a dynamic element (*τὸ ἄρρεν ποιητικὸν*) quickened the passive but plastic female element (*τὸ θῆλυ παθητικὸν*),[50] enduing it with "form." He saw no difficulty in the resemblance to the mother; for did not plants vary with the soils in which they might be

[49] We know that Galen wrote an essay entitled Εἰ *κατὰ φύσιν ἐν ἀρτηριάις αἷμα περιεχέται.*

[50] It is usually supposed that Aristotle took the *σπέρμα* to imply the body of the fœtus; he seems to have given too much content to the *σπέρμα*, but "form" is far from signifying structure. As we gather from the Eumenides, concerning the appeal for the acquittal of Orestes, the idea of deposit of the embryo by the male to be nourished by the female, as in a nest, was far older than Aristotle, and contains far more than "form." But we must remember that in early times the differentiation of notions to which we are accustomed had not been accomplished.

planted? He admitted that in the catamenia the female contributed some kind of generative substance (γόνη), but contrasting it with σπέρμα, held that it was but of a rudimentary kind. His objection against the seminal contribution of the female, that she could be impregnated without orgasm, and even unconsciously, was less adequate; and how often are we tempted to think how happily we could have jogged the elbow of a great scientific father and supplied him with just the notion he needed. For Aristotle had a good knowledge of the egg, and how well the ovum would have fulfilled his argument;[51] as Fabricius and Harvey perceived, and von Baer finally proved. Straton, so far as we can tell, seems not to have followed Aristotle's footsteps closely; he dwells more, as did some other authors, on prepotency, and assumes that in particular cases the prepotency might have lain with the male or the female. Next we come to Alexandria, and to Herophilus who described the ovaries (διδυμοι), and the tubes (σπερματοκδι πόροι); but this more accurate anatomy did not reveal more physiology. So far as it went, indeed, it seemed in favour of seed in both sexes; but the Aristoteleans, magnifying the content of the σπέρμα, fancied that these female parts were but a "structural harmony," after the kind of the male mamma. It is notable that Falloppius, himself a master in this field of anatomy, and pursuing the same positive methods as Herophilus, scrutinised the ovaries and vesicles minutely in search of a seminal element and, finding none, also denied seed to the female. And we may suppose that Harvey, in holding the same opinion and denying that the ovaries, to which he attributed a rather fantastic function, were an equivalent of the testes, followed Falloppius. But to come to the pneumatists: Athenaeus, and Archigenes who followed him, seem to have been the last physicians of the period to rely upon Aristotle; they denied seed to the female, and Athenaeus seems to me to be even more dogmatic about it than Aristotle himself. Galen, however, definitely did attribute dynamic seed to both female and male. The old demur that the progeny were as prone to resemble the mother as the father, for Galen held no difficulty; he assumed that each sex afforded a seed endowed with both virtue and substance (δύναμις and ὕλη); and yet he betrays a curious uneasiness about it, for how is it, he candidly asks himself, that the female never conceives alone. As to the preparation of semen as a perfected product of the blood, in this respect Aristotle seems to have followed Democritus, Hippocrates, and Praxagoras in a speculation which reminds us of Darwin's idea of pangenesis; in the pneumatico-stoic opinion, however, the semen was sublimated from the hegemonic spirit in the heart.

Influence of Pneumatism on Medicine.

Of this kind, then, so far as these limits permit me to unfold it, was the doctrine of the pneuma, a metaphysical idea foreshadowing vital combustion. And pneuma, whether under this name or in refluent waves of aboriginal ideas under such names as the vegetable and animal souls, of the Archaeus, of van Helmont's vital principle, of the animal spirits of Descartes, of the motor nervous fluid of Stensen, of the animism which in the early eighteenth century sprang from chemistry, of the vitalism again which sprang from the doctrine of irritability, or of the transcendent vital quality beyond physico-chemical virtues entertained by some leading physiologists to-day—πολλῶν ὀνομάτων μόρφη μία—must, in so far as it is an imported entity, make a free pathology and an inductive therapeutics almost impossible. And meanwhile the humoral pathology had to be counted with, even by the pneumatists. If the pneuma might become hot and dry as in fever, cold and moist as in dropsy, too dense or too light with many consequences; or again, too quick or too sluggish: if it might be pent up, as in epilepsy and constipation, or, as in hysteria, imprisoned in the womb, so again the humours also might be crossed, or crossing, in one or more of the many possible permutations of dyscrasia. The Hippocratean doctrine was that health and disease depended upon the crases of qualities. That health consisted in a eucrasia was, it is said, an axiom of that spectral sage Alcmaeon of Croton; and the conception of diseases as modes of the many possible dyscrasias survived down to Galen and, by him regenerated, flourished as we know in a crude form through the Middle Ages; and in a sublimated form has yet a great part to play in pathology. These humoral doctrines the pneumatists did not abolish, but made their intricacies still more complicated, coiling them into a mesh which at present we have no leisure to unravel; curious as is the study of an intense mental hunger, with but a scanty harvest of knowledge, feeding upon itself. And not only in the first and second century A.D. in medicine, in Neoplatonism, and in the Christian Fathers, but again in the thirteenth century, and in the ingenious literature of the sixteenth and seventeenth century against which Sydenham led so masterly a revolt, we see history thus in principle repeating herself. It was well therefore that the empirical reaction initiated in the earlier Alexandria by Philinus the Coan and Serapion, narrow and ungenial as they seemed, and, more fruitfully and scientifically, the admirable surgery of the age curbed the extravagance of the pneumatic and other metaphysical opinions; and this protest it was which made the pneumatist sect strictly so-called, although backed by the Stoics, but a transient phase.[52] Indeed, its own greater men almost from the first had begun to hedge by a prudent eclecticism. And it is true that their central doctrine of the pneuma was less prejudicial to surgical progress, which they forwarded upon Alexandrian anatomy, than were their unbridled expatiations, a wasted or even a mischievous energy, in the field of inner medicine. That the pneumatist emphasised the dynamic side of physiology is true also; and that, like the methodist, he recalled attention to the solids of the body; yet, by personifying the pneuma as an indwelling and creative entity, he provoked a reduction of the functions of growth, work and excretion to a passive machinery worked by a demiurgical finger: thus the whole framework of digestion, for example, became for him a mere gizzard, a mill for mechanical contrition of food; and therapeutics became a magical checkmate of the malignant. Now the methodist, or at any rate the Lucretian atomist, before the formalist Themison, while animated no less by the dynamic idea, had regarded energy more truly as one aspect of a quick matter than as the demonic master and manipulator of an engine. And the sceptics of the day, on narrower if surer ground, were teaching, almost with the decision of Locke, that thought can only be built upon the functions of the senses. Even for Diogenes of Apollonia[53] phenomena, the pneuma having condensed into them, were but phenomena, not outside realities; and concepts therefore were fashioned wholly of the products of our senses. The defect of these critical schools, at any rate of the Empirics who did not realise that we see what we are trained to see, was, as I have explained, an intolerance even of the chaster Hippocratean reasoning on causes, and a repudiation of anatomy which reminds us of Sydenham's aversion from pathology. Difficult as it is then to define our distinctions between the later Herophileans and Erasistrateans, or even to contrast the persons and doctrines of the two great leaders, yet it would seem from the course of events, and from Galen's testimony, that on the whole Herophilus had more of the utilitarian bent, while Erasistratus was of a more speculative temper; for Galen accuses him and his followers of scoffing at the clinical school of Hippocrates in a manner which Galen regarded as unmannerly and cavilling. But probably, as I remarked last year, Erasistratus also scoffed not so much at Moses as at the Mosaic dogmatics; while for Herophilus Haeser vindicates some balance of observation and reasoning, some use of theoretical explanations. Celsus in his invaluable preface, while attributing to Erasistratus also some measure of the empirical temper, says again of this point of view that, although basing its practice upon the more manifest of them—

[51] See the eighteenth chapter of the "De Generatione Animalium"; and also the "De Anima." After these lines were written I read in the British Medical Journal (August 13th, 1910) a very able and interesting article, signed "J. W. B.," on Dante's knowledge of Aristotle's "De Generatione," and noted that in Dante's words we might observe a strong infusion of the pneumatic doctrine. I venture, however, with great respect to question if Dante's account of the accretion or supervention of the animal upon the plant soul can be interpreted as a "flash of insight" into our modern idea of the embryo "climbing up its own genealogical tree." His phrases seem to me to contain no more than we meet with not infrequently in ancient and medieval speculation, and we must beware of importing into them concepts of our own.

[52] I venture to repeat that Gomperz has liberally insisted that, whatsoever the inconsistencies within the faculty itself, this service for a more positive method and influence was one for which ancient philosophers were indebted above all to Medicine.

[53] Cf. Krause, loc. cit.

upon the *causas evidentes*—it did not refuse to consider obscure and remote causes: *causis obscuris omnibus, non a cogitatione artificis, sed ab ipsa arte rejectis.* So Jack Wilkes "was never a Wilkite." It would appear notwithstanding that the concentration of Herophilus upon present symptoms—such as the pulse for instance, on immediate or at any rate proximate causes, and, in common with his great contemporary, upon anatomy both normal and morbid, established a pragmatic bent which in the practice of his disciples, if not in his own, led to over busy interference, to much drugging, and to excess of venesection; while the Erasistrateans, as reflected in their disciple Asclepiades, reasoning upon wider and remoter causes also, and becoming sceptical of therapeutical prowess, pursued a more expectant method. That accordingly Herophilus abode in the four humours, while Erasistratus discarded or neglected them, if in part it explains the antagonism of Galen to the Erasistrateans, still carries with it more history than this. For if the humoral doctrine involved its disciples in a mess of pharmacy from which the Erasistrateans won their freedom, yet on the other hand it would seem it was this inclination from the juices towards a dynamic or pneumatist conception which gave countenance to the opinion of Praxagoras, conveyed by Straton, that the arteries contained air rather than blood—an error of momentous consequence. What Galen did afterwards was to force both empirics and methodists back to study anatomy, to scrutinise causation only too meticulously, and to restore and develop the elemento-humoral tradition; while in his physiology, under the guises of the psychical soul and of a divine teleology, he perpetuated some pneumatism. Thus, while phlegm was interpreted as moist, yellow bile as hot, black bile as earthy, upon these were worked in the three entities of the soul; the animal soul having its primary reception in the pulmonary veins. A great part of our difficulty in distributing these sources and phases of opinions lies in what was Galen's own misfortune likewise, that, rich as by tradition may have been his physiological and clinical inheritance, he, like ourselves, was deprived of historical sources; for even in his day the destruction of manuscripts—as, for one instance, in the siege of Alexandria by Cæsar—had been already disastrous. We know that in the time of Galen, and probably of Celsus also, the works of Erasistratus had perished; and still more unhappily certain histories of medicine under the names of Hermippus of Smyrna (Περὶ ἐνδόξων ἰάτρων), Andreas of Karystus, and of Histomachus were lost (Haeser). No insubstantial deliverance of medical tradition was notwithstanding handed down to the third century, if in a more impalpable form than of parchment, through Asclepiades, Themison, Archigenes, and many others over whom oblivion has cast her poppy;[54] and above all things the Hippocratic series of manuscripts had been preserved in other libraries.[55]

The brilliant progress of Alexandrian anatomy would in itself suggest that in morbid anatomy also advance was not wanting; although, in the early destruction of the records, and under the overgrowth of the later metaphysical cobwebs, much of it fell into oblivion. But that necropsies were then made for the investigation of disease is well known. For instance, a statement of Erasistratus has survived that in some cases of dropsy the liver was condensed, and as hard as a stone. In Alexandria pathological dissections were probably obtained without difficulty; in Rome the current prejudice against them was prohibitive, and so persisted even into the fifteenth century, when the Florentine, Antony Benivieni—the friend of Ficino and Poliziano—made it yield to his ardent importunities.

HYGIENE.

The hygienic and therapeutical doctrines of the pneumatists, and of the eclectic or "episynthetic" physicians who assimilated the more effective results of methodist, empirical, and other schools of the period, were of considerable interest and importance. The surgery of the school especially was excellent, and it is a matter of grave regret that of its records but little is extant. If in the light of recent researches our standard histories of the surgery of this period need revision on some points, yet on the whole it has been set forth almost as fully as the materials permit, so that I will not now dwell upon it. I will turn rather to the hygiene of the period, as of peculiar interest to us who at this moment are occupied with the medical aspect of education, to note the close attention this branch of the public service had received from the Greek physicians in Rome. Celsus, from the point of view of a Roman gentleman, gave some excellent hints on this subject; and the following interesting fragment of Athenaeus is preserved in Oribasius (III. 164): "*χρήσιμον δε ἡ μᾶλλον ἀναγκαῖον πᾶσιν ἀνθρώποις ἀπὸ ταύτης τῆς ἡλικίας ἅμα τοῖς ἄλλοις μαθήμασι συμπαραλαμβάνειν καὶ τὴν ἰατρικήν, καὶ κατακούειν τὸν ταύτης λόγον, ἵνα καλοὶ καὶ ἀγαθοὶ σύμβουλοι γενώνται πολλάκις ἑαυτοῖς τῶν εἰς σωτηρίαν χρησιμόν.*" For Athenaeus indeed medicine was even more than this, it was an integral part of a liberal education.

On airs—as of day and night, of hills and valleys, lunar and solar seasons, and of various climates—the pneumatists, as we should anticipate, laid great stress. Accordingly we find such airs described as moist or dry, hot or cold, dense or thin. Night air was cold and thick, and consequently apt to cause rheumatism, fever, and inflammation. I need not stay to interpret the warning that, of seasons, the air of autumn was the most dangerous; and that during these months one should never sleep out of doors. The air of towns was warm and thick, so that natives of towns were fat, and were sluggish in their secretions. The air of enclosed valleys was bad; and likewise the air of river flats and of marshy places. Inland air was said to be more wholesome than that of the seaside, an opinion derived perhaps from the malarious infection of estuaries, and of harbours, such as Ostia. Drinking water was to be filtered through porous stone or earth, but particularly to remove dirt and leeches.

Diels draws attention also to their careful adaptation of hygienic rules to the periods of the individual life. Still depending chiefly upon the reports of Oribasius and Aetius, which as regards Athenaeus, Agathinus, and Herodotus,[56] are fortunately copious, we find that the pneumatists regarded its course as of four stages—of infancy, of adolescence, of middle-age, and of old age. We shall note with particular interest that they discouraged all serious school work before the age of six or seven; then the child was to be taken in hand by a mild and kindly master, who would discipline the child by changes of work and play, carefully avoiding prolonged stress of either but encouraging him by emulation, finding for him a delight in learning, and remembering that severity or satiety engenders an aversion which in after life may never be overcome. From the age of 12, however, the work was made tougher, and the pupil led to feel his powers, and to put them forth in such studies as grammar. The master was to be well versed not only in intellectual matters but also in dietetics, in the wide range of exercises known as gymnastic, in the use of the bath, and particularly in the apportionment of the hours of sleep. Thus, as the boy grew up, bodily and mental development went hand in hand; and in adolescence, in order that every man should understand the conditions and promotions of a normal life, medicine and philosophy were introduced into the curriculum. Concupiscence was subdued in youth by gymnastics, and by the general discipline of mind and body. In maturity the generative function was to be approached with due sense of responsibility; and directions were given for the *παρασκευὴ πρὸς τὸ παιδοποιᾶν*. The sage council was given not to forget even in youth the prospect of old age and, as years wore on, to economise the efforts of body and mind, and to cut down the quantities of food; indeed, at all ages the food was to be reduced in warm weather. And with the exquisite greek sense of balance, even in physiology, and of the unity of bodily and spiritual function, they reminded us—for are not these lessons for all time?—that in a healthy old age we should seek to be wholesome not in body only, but gentle of soul also, high-minded,

[54] The reader will remember that the treatise of Celsus was either little known to the physicians of Rome in later generations, or was disregarded by them as the compilation of a Roman layman.

[55] As on Aristotle and Plato in philosophy, so in medicine transcripts and commentaries on "Hippocrates" formed the backbone of the tradition. Cicero refers to the writings of Hippocrates as well known. Galen, besides his other reverential services to the father of medicine, wrote, or proposed to write, a critical essay on the genuine and false treatises of the collection. If it was ever completed it is lost; but Mewaldt in an essay in Hermes (1909) studies some relics of it. The greater Empirics, such as Xeuxis and Heracleides of Tarentum, were loyally devoted to the great master.

[56] As, for instance, Orib. III., 107, "*ἐκ τοῦ Ἀθηναίου.*" For the ready reference to these passages and comments upon them I am indebted again to Wellmann (loc. cit.).

never tiresome, in sympathy and fellowship lifting up the young with the fulness of sweet lessons from the past. In the education of women, while a wholesome interest in political affairs was not denied to them, they were advised to concentrate themselves upon the arts of the home and family. Such, when divested of their necessarily crude biological hypotheses, was the ripe wisdom and sagacity of these great physicians, so near us and yet so far away.

THERAPEUTICS.

The remedial therapeutics of the Roman physicians between Celsus and Galen have not, in their fuller details at any rate, the same practical interest for us as their hygienic teaching. We may glance somewhat cursorily at a few of the means. In their eclectic and expectant methods, in the development of physical means of cure, and in some use of wine, we note that influence of Erasistratus and of Asclepiades upon the pneumatico-eclectic schools to which I have repeatedly invited your attention; but it is with less satisfaction that we turn to note the influence of the Herophileans in that increasing use of drugs, and of violent means such as emetics, clysters, purgatives, and venesection, which gave a certain grossness to the therapeutics even of Galen himself, and under his influence degraded medicine more and more till the days of Molière. Herophilus and his followers revered Hippocrates in lip-service, and, indeed, did much to preserve and elucidate his writings; but they never obeyed the spirit of his therapeutics, which were founded upon prognosis and upon respect for the functions of nature.

Asclepiades had, as we remember, carried physical therapeutics to lengths almost, or quite, absurd; as in his swings, succussions, and jolts. Therapeutical gymnastics had been admirably developed from the Hippocratean schools through Diocles and Praxagoras of Cos; but it is to be observed that not only by Asclepiades and Celsus but also before them, indeed from Hippocratean times, and more especially in the Coan than in the Cnidean School, the intemperate pursuit or profession of gymnastics was deprecated, not only as injurious to the health, but also as illiberal (*κακοτεχνία*, Galen). Thus by the more sagacious physicians there was a continual mistrust of the gymnastic schools.[57]

At present, however, I will speak only of the passive movements, of the massage of the period which seems to have been elaborate and refined. By four or six performers the entire body seems, often at any rate, to have been massaged at once; two performers manipulating the arms, hands, and fingers, two the trunk, two the legs and feet. The first stages were slow and gentle, the later became gradually quicker and severer. We may note with interest that gentle massage was practised in fevers, so long as there was no acute focal lesion; the tolerance of the patient of its degrees and durations being carefully watched. The amelioration which by this means they professed to obtain was attributed in part to refrigeration by the induction of sweat. It seems to me, Sir, that in some measure this practice is not unworthy of the consideration of this College. The fever lore of these ancients was, as we all know, enormous; as Wellmann says, and as W. S. H. Jones has exhaustively proved, it was a literature in itself.

And we are all well aware also that the cult of water springs and the bath literature of early times, before as well as after Epidaurus, was no less prodigious.[58] The ancient magic of wells, which developed into the Epidaurian combination of theurgic and therapeutic ritual, had in the times of which we are speaking become a separate resource. The Roman physicians seem to have ignored the Tiber Island. But we read of pure water baths, of saline baths ("which warmed the body"), of oil baths for cramps, pains, and retention of urine, of sand baths, and of sun baths.[59] Asclepiades, and after him the pneumatists, argued against the abuse of warm baths which, however appropriate in their degrees for debilitated persons, were not bracing enough in fevers, or even for use in health. Here we call to mind Musa's reputed cold-water cure of his august patient. Nurses were lectured for "boiling their children"; and bathers were warned against letting water into the ears, "which damages them." Mineral waters, of course, had their many natural virtues. Archigenes gives us the first rational classification of mineral waters which is extant: he divided them into the alkaline (soda), saline, aluminous, sulphurous, ferrous, cuprous, and bituminous; and elaborately explains their effects on the humoral hypothesis.

Wine.—The place of wine as a remedy is a curious story; in my Harveian Oration (1900) I touched upon it, but there especially as regards its outward application, even from the days of the Good Samaritan. Asclepiades wrote an essay *Περὶ οἴνου δόσεως*, an epochmaking work in its way, the contents of which may be gathered from Pliny[60] and Dioscorides,[61] amid paragraphs deriving from such recipe compilations as that of Sextius Niger. As I stated in my lectures of last year, Asclepiades, who was nicknamed "*οἰνοδότης*," taught the therapeutical value of wine, and discussed the virtues of its various kinds—the greek, the roman, and so on; but the advocacy of Athenaeus seems, from negative evidence, as from the lack of certain details in Pliny and Dioscorides, to have been inspired not directly by or from Asclepiades but to have been influenced by the tradition of Diocles, Praxagoras, and Mnesitheos; authors to whom those compilers do not allude. Athenaeus says that wine, when carefully used—used with attention to proper rules of symptoms, of doses, of dilutions, of hours—arouses the pneuma from its torpor, and, as Archigenes repeated afterwards, is especially useful in syncope. Now syncope was then said to consist in a loss of tone (*τόνος*), a vital quality to which the pneumatists attached much importance, and the state of which for the whole body they were wont to infer from the tone of the pulse. From a persistent acceleration of the pulse in fever, for instance, they inferred correctly that the remedy should be withdrawn.

Venesection.—But I need not say that of all the therapeutical means practised and discussed in those days the most ascendant was venesection; and concerning it the controversies of the schools were the most stubborn and acrimonious. In my lectures last year I noted the reserve of Asclepiades in respect of venesection; a means which, for good reasons, he did not withhold, but kept in hand for critical moments. Now the close attention of Athenaeus and the pneumatist school to the pulse gave no little importance to their teaching concerning this remedy. But the protest against the practice of venesection as a potent and a vulgar ally against disease in general carries us back into a much dimmer past. Not to detain you by a long retrospect on the sacredness of the blood—no unfamiliar subject in the Old Testament for instance—I may curtly remind you of this superstition in the semi-Oriental mysticism of Pythagoras; and so onward in medicine it influenced Empedocles and the Sicilian School, Philistion of Locroi, the Cnidians, and Chrysippus. If we may rely upon certain passages in the eleventh book of Galen (150, 197, and 252), Chrysippus stood prominently forth as an opponent of bleeding, and his deprecation was heeded more especially, so it was said, by one Medius, an uncle of Erasistratus, and by Erasistratus himself and his disciples. This forbearance was a little more remarkable in that the Erasistrateans, and indeed Chrysippus himself, clearly perceived the perils of plethora, but these they combated by diet. The objection to bleeding was formulated as an opening for the escape of the animal spirit (*πνεῦμα ζωτικόν*). Apollonius, a pneumatist of whom we know little, although indisposed to bleeding as a routine, contributed the interesting demur, that in plethora the permeation of the periphery by the *πνεῦμα φυσικὸν* was retarded. As reasonable persons, therefore, they accepted no formula but, before using the remedy, estimated the general conditions of the malady, the state of the patient as to strength and nutrition and so forth, and especially as to age and sex. Archigenes, however, advised that bleeding in some form was not inappropriate in plethora; and many of the school believed at least that by this means foul humours could be evacuated.[62] In fevers, however, they had

[57] On this subject the reader is referred to the admirable study by Juthner of Philostratos Ueber Gymnastik, Leipzig, 1909. (Philostratus lived soon after Galen.)

[58] The Alexandrian Greeks owed but little to the Pharaonic Egyptians, who were, however, as we gather from Herodotus (I. 193, 198, and II 35–37), at least hygienists. They had a State health service, and practised many ablutions of person and clothing, as did the Babylonians also. The honour of filth in person and clothing was left for medieval times. The Egyptians also vigilantly and ceremoniously protected their water courses.

[59] The reader who desires to know more of this history may be referred to the Second Book of Oribasius, chiefly compiled from the works of the distinguished pneumatist physician Herodotus, pupil of Agathinus.

[60] N. H., xxiii., 31.

[61] V. 7.

[62] It is interesting to note that in almost all schools of ancient medicine melancholia was attributed to toxic causes.

no doubt that to reduce diet, and at the same time to draw blood, was to exhaust the patient;[63] therefore, to prevent the inflammatory indraught of blood into the arteries in fever the master, after the Alexandrian tradition, bandaged the patient's limbs so as to keep the synastomoses closed, and thus to prevent the conflagration of blood and pneuma in the thorax. For we have seen that Erasistratus, to account for blood in the arteries, assumed certain more or less distal communications between the veins and the arteries, gates normally guarded or closed. On account of this meticulous shunning of venesection, though they limited rather than repudiated it, Galen waxed almost as hot against the pneumatists as against the methodists; but Celsus (52, 3) in his cool and shrewd way had said long before—in reference to Asclepiades, "*Sanguinem incisa vena mitti novum non est, sed nullum paene morbum esse in quo non mittatur, novum est.*" The pneumatists, or Erasistrateans, reasonably argued that in many cases local ought to be preferred to general bleeding, as by cupping, scarification, or leeches; and that in many cases even dry cupping or a cataplasm would suffice to draw off a congestion.[64]

EMINENT PNEUMATIST PHYSICIANS.

After this discussion of pneumatic doctrines, modified or masked, generation after generation from Alexandrian times onwards, by empirical, sceptical, stoical, and eclectic tendencies, and even by changes of name, and at length formulated for Medicine by Athenaeus in Rome, I propose to return, so far as the fragments will permit me, to the personal story. Of Agathus, and after him of Agathinus the Spartan, who lived in Rome under the Flavian Caesars, and were important links in the chain between Athenaeus and Archigenes, we know little; but it would appear that both of these physicians played a considerable part in the fusion of doctrines to which I have often referred, a fusion which made the name rather than the essential doctrine of the pneumatist short-lived. Greenhill regarded Agathinus as taking the lead in these eclectic or "episynthetic"[65] modifications: "Εκλεξάμενος τὰ αρέσαντα ἐξ ἑκάστης τῶν αιρέσεων." Archigenes, who a pupil of Agathinus, said of his master that he was accurate in all things, and ripe in experience. Still guided by three main clews of pneumatist doctrine—namely, the pulse lore, the fever lore, and the hygienic, pædagogic, and dietetic forms of therapeutics—we perceive at this period more explicitly the fusion of Pneumatism, Methodism, and Empiricism, with a younger and more liberal Hippocratic, or clinical, medicine.[66] This blend of old and new suggests to us progress, an orderly development of medicine; and we shall see presently that a solid, sagacious, clinical school, variegated indeed by some sectional dissent, survived, and superseded the arrogant domination and the sterile maxims of the later methodists, such as Thessalus. And yet we must admit that on the dogmatic or clinical side this evidence of sound development was accompanied not merely with a respectful appreciation of older doctrine, but with a mechanical tradition of form and letter such as seems to us to be contrary to the spontaneity of life. For although we are wont to suppose that the medicine of summists, of copyists, of large and literal transcripts, belonged to Byzantinism, and signified then the routine, if not of decrepitude at least of an unintelligent conservatism, yet we have seen that the era of scribes and summists must be carried back much farther than we had supposed, to a period not only far before Oribasius and Aetius but before Varro. And plagiarism was not confined to the scribes; even men of natural genius, such as Soranus and Galen, excerpted largely, literally, and anonymously; so did that imposing surgical phantom, Antyllus; and so, says Wellmann, did that no less considerable surgeon Heliodorus whom, on the slender relics that remain, I am disposed to regard as of still richer genius. In discussing, then, all these romano-hellenist medical writings, we must bear in mind the custom among them of lifting both terms and volumes of the literature one from another; and this without acknowledgment, unless when, happily for us—as often in Galen—controversial animosity goaded to personal attacks. That Celsus named his sources so generously may in the enemy's mouth be one more point of evidence that he was a layman! In the fragmentary and disconnected state of the records of the period then we cannot be sure whither, and how, many of these embedded remains are in their origin and order to be distributed. Any such distribution which, with the aid of far greater scholars than myself, I may now attempt, in order to distinguish individual authors, must therefore partake of much uncertainty, and be in its nature provisional; but in justice to the memory of Archigenes it must be attempted.

Archigenes and Aretaeus.—To appreciate Archigenes, one of the greatest of the physicians of this period, we must first discuss the place of Aretaeus, who, by name at least, is familiar to us all. And probably not a few of us, attracted by the story of the past, have perused, or at any rate dipped into, his treatise, so admirably rendered for English readers by Adams, and have been deeply impressed by his gallery of diseases—portraits select, succinct, deft in their handling, and speaking of character and experience. Galen, more diffused in generalities, never painted such telling pictures of morbid species. From it we have formed, and justly formed, a high opinion of the medicine of the age. This impression I say was just; but that Aretaeus in person justly deserved the honour is another matter. The ancients gave him no such meed. The author, who drops systematic pneumatism in his practice, which is on sound Hippocratic lines and probably moulded in some part upon Asclepiades, and interprets pneuma merely as *φύσις* in the Hippocratean sense of *δύναμις ζωτική*, or generative energy, yet by phrases here and there, such as his emphasis on *τόνος*, betrays his school. He seems to have lived under Domitian or Hadrian, but to have fallen into a long neglect. The first mention we have of him is in the sixth century by Aetius; then by Paul in the seventh; after then he sank once more into oblivion till the middle of the sixteenth, when the Greek MS. of a large part of his work was discovered, and was printed in Paris in 1554. It was now observed that the treatise was written in Ionic Greek; now the Ionic singsong in his day had become a literary fancy, and to use it in medicine was an affectation, even—so competent scholars assure us—an affectation so "grotesque" as to strengthen some suspicions of the writer's originality in other respects. Was the neglect of Aretaeus by the ancients because they knew him to be but a secondhand and archaistic scribe? It does seem probable that in Aretaeus the Cappadocian, who so far as we know never visited Rome, we find a conspicuous example of that prevalence of copying and recopying without acknowledgment which, not unknown among ourselves, then prevailed in the large measures I have indicated.[67] Delicate and complicated as is the task of tracing such stolen property from one obscure author to another, yet as out of it comes to light the figure of Archigenes of Apamea, of the time of Trajan, who, like Asclepiades, seems to have suffered unmerited eclipse, we must try, if on main lines only and by renouncing some of those impressions of form which we call the higher criticism, to make clear in summary[68] certain restorations and redistributions suggested by modern students concerning these records.

Of the confessed compilers Oribasius, who lived during the last three-quarters of the fourth century, was the chief; and of his collection about one-third is extant. The chapters on the poison literature are lost. We know, honest man, from his own references, that he swept into his net Dioscorides, Archigenes, Antyllus, Philumenus, Philagrius, Poseidonius, and Galen. About a hundred years later flourished another such scribe, namely, Aetius, and in his collection lies our main source of the poison literature, after Pliny. But Aetius, luckily, did not copy from quite the same sources,

[63] In more than one passage of Galen's XIth Book. See also Book X. 376.

[64] Which vein to open in a particular case or malady, in the elbow, in the ankle, in the temple, at the nasal angle, in the tongue, in the little or ring finger, and, not least, on which side of the body, was in the times of which we are speaking, and still more in the Middle Ages, often decided on fantastic reasons. Arteriotomy was practised occasionally by the ancients, but under what conditions is not precisely known.

[65] Not, of course, the philosophical school so-called.

[66] We may observe in the Pneumatist succession the continuous use of Methodist technical words, such, e.g., as *ἔνστασις*, a stoppage of the pores.

[67] We do not, of course, estimate these annexations by modern ethical standards. In ancient times written matter when published became the common property of the reading public, "*δεδημοσιώμενα τῶν καταβέβληται.*"

[68] In this summary I rely on Wellmann's Pneumatists, and on his article in Hermes, 1908; also on Daremberg's edition of Oribasius, and of Rufus.

nor quite the same things, as Oribasius; he borrowed from Asclepiades, and, so far as extant MSS. inform us, he made a larger use than did Oribasius of Philumenus. Now, who was *Philumenus*? Well, he too was an eclectic methodist and pneumatist of the generation of Galen (about 180 A.D.), and likewise a compiler after the spacious manner of Oribasius; but only some portions of his work, those contained in Aetius and Paul of Aegina, were known until Wellmann's discovery, in the Vatican, of 37 short chapters of his work, most fortunately with the names of the authors submitted to his scissors.[69] Philumenus again gathered his materials from somewhat different sources; so that these three compilers throw cross lights upon each other and upon their various sources, so that by comparing them certain identifications begin to appear. Philumenus has this particular value for us, that Archigenes seems to have been one of his principal sources. This inference first suggested itself to Wellmann while reading a certain chapter containing an antidote to viper venom, which he recognised as the antidote of Archigenes. Now Aetius, in all the diseases concerned, while similar to Aretaeus, is fuller, and presents also some peculiar differences; for instance, in respect of pleuro-pneumonia and empyema Aretaeus does not extend beyond Soranus. And in respect of headaches and of epilepsy the identification can be carried farther; for herein Soranus, and even Galen, and much later Alexander of Tralles, as well as Aretaeus, followed Archigenes. Not to detain you on points of cumulative evidence, I may say that in the divisions of matter, in the way in which certain drugs are selected and used, and so on, there are further coincidences which are very significant. The conclusion seems to be then, that Aretaeus was a copyist, as was Aetius; that they copied from some source common to both, and that this source was Archigenes, whom indeed Aetius happens to name. Wellmann, comparing them in parallel passages, declares that Aretaeus is just a servile copy of Archigenes, if not directly, then by the intermediacy of Philumenus; and this may be. But I would remind you that there is much verbal identity with other authors in Galen also; and if I may venture to demur to a judgment of this distinguished scholar it would be that the agreement in many such passages is substantial rather than literal; and in a broader sense I would urge that similarity of terms, and even of phrases—"literary universalities"—does not necessarily convict an author of plagiary. Phrases which become current in one period fall out of another. In the medical journals of to-day we may readily note the professional dialect and shibboleths of our own time, especially in the writings of the less literary of our brethren. And thus, under the Roman Empire, although, for instance, Aetius did not copy Oribasius, yet in many places there is much similarity between them and no little verbal identity. Nevertheless, it seems more than probable that, whether through Philumenus or not, Archigenes was the main source of Aretaeus; and that Philumenus, who reproduced Archigenes, was in his turn the main source of Aetius and no inconsiderable source of Oribasius.

However, there is yet one more of these compilers to whom, if you will forgive me, I must refer—namely, one *Alexander*, of whom I, at any rate, know nothing except the remarkable treatise, easy to lay hands upon, which stands first in Ideler's Collection. It consists of two sections, one on Problems and one on Fevers; and with this it is that we are now more particularly concerned. For this fever chapter is in close conformity, often in verbal identity, with Galen's writings on fever, the pathology of which, with some qualifications of his own, he drew from pneumatist sources. Now in both Galen and in Alexander we find fever divided into two categories, thus: (1) as to severity, the πυρετοὶ μέγαλοι καὶ μικροί; (2) as related to the three kinds of bodily substance respectively—the dense, the moist, and the vaporous[70]—that is to say, quotidian, septic, and hectic. But on turning to the same passages in Alexander we find a third category—as to "rhythm"; namely, slow, quick, intermittent, and continuous; though it is added that as the motions of heat are infinite so these rhythms glide the one into the other. And, in respect to those kinds of bodily substance, he goes on to say that the harder its constitutional substance the less is the body swayed by the fever, and the less the sympathetic propagation of its motions through the system: thus a quotidian is brief because it vibrates only in the rarest substance of the body. Now this additional matter Alexander must have got from the large work of Archigenes, mentioned by Galen, Περὶ τῆς τῶν πυρετῶν σημειώσεως, from which he had made a somewhat larger excerpt than had the others from the common source to which they all betook themselves. Now fortunately, Galen (VIII. 203) gives the title of an important pathological work of Archigenes; and Oribasius (II. 146) that of his work on therapeutics—namely, Τῶν ὀξέων καὶ χρονίων παθογνωμικά; and Θεραπεία τῶν ὀξέων καὶ χρονίων παθῶν, respectively; both apparently in four books; and these titles, as we shall remember, correspond to the four books of Aretaeus On the Symptoms and On Treatment of Acute Diseases, and On the Symptoms and On the Treatment of Chronic Diseases.

Now we have the titles of two others of the more celebrated treatises by Archigenes—namely, the Περὶ τῶν κατὰ γένος φαρμάκων and the Περὶ τοπων πεπονθοτών, (in three books) to which Galen gives high praise. The work on the seats of disease would have been an invaluable document for the historian. We are told that in it Archigenes, with a genuine clinical instinct, inquires if from a comparison of the varieties of functional perturbation, or symptom groups, seats of disease could be inferred; if there be, that is, a signal group for each seat? For example, if we observe this series—orthopnœa, rusty or dark and livid or frothy sputum, fever, pain in the side, and a rapid pulse—we infer a peripneumony. Dyspnœa is common to many maladies, it is true, but we interpret it by its associates; as in this case by fever, the kind of sputum, and so on. Galen (De locis affectis) scoffs at a narrower argument of his, that the seats of disease might be discerned even by several kinds of pain; apparently it did partake too much of the nature of a logical exercise, for Galen complains of its newfangled notions and terms; but nevertheless the method was a sound one. Moreover, upon it Archigenes seems to have built another fruitful clinical idea, that of sympathetic parts, and primary and secondary symptoms. Thus he pointed out how disease in a certain part might betray itself by pain or disorder in a distant part, not itself diseased. He instances, and very appropriately, confusion of vision caused by a disorder seated in the stomach. These views, and the seat of the hegemonic pneuma in the heart, Galen contested; though on the whole treating his great predecessor with respect, and paying him the dubious compliment of copying from him extensively, often without acknowledgment. For example, Galen's description of that notorious disorder the πνῖξ ὑστερική—the hysterical suffocation, is identical with that of Aetius, as are both with that of Philumenus the plagiarist or copyist of Archigenes.[71] This description was that the restless uterus attacked the heart through the arteries, the liver through the veins, and the brain through the nerves: the simulation of death was described; and the cause was attributed to a chill to the pneuma, a pathology opposed to the more rational notion, of Soranus, of an inflammation of the womb, which engendered in the cavity a cold and moist phlegm; in quantity no doubt small, but, as he urges, how minute may be the venom of a snake or of a mad dog. Now, in commenting upon this account in Aetius, Valentine Rose proved, by facts with which I will not trouble you, that Aetius did not copy from Galen, but, as we have seen already, from Archigenes, the common source of both writers.

On other subjects, as concerning the cynanches, for instance,[72] and certain drugs and their uses, a like correspondence is notable, but I will touch on two more coincidences only—namely concerning elephantiasis and concerning the hellebores used in the treatment of it.

[69] This discovery was one of the many fruits of the formation of the preliminary catalogue for the Corpus by the associated academies. Unfortunately, a vast pile of MSS. thus revised and catalogued has brought in little so far; such matter as 150 indifferent MSS. of the Aphorisms; 100 of the Prognostics, and so on, with quantities of Arabian, Syrian, and Hebrew translations. So it may prove that for Galen we shall have little better than the Ed. Pr., or for Paul than the Aldine. And Aetius is complete only in the Latin version of Cornarius. There was a sad loss of MSS. in the fury of early printing. (See VIth vol. of Pauly-Wissowa; art. on Dioscorides).

[70] στερεά, ὑγρά, and ἀερώδης οὐσια.

[71] We may conveniently regard Galen's works as consisting in part of his own original observations and thought; in part of fugitive pieces concerned with the questions of the day; in part of compilations.

[72] Vide, e.g., Die Halskrankheiten bei d. altgriechischen u. römischen Aerzten, von J. Weigel, Leipzig, 1907.

Elephantiasis was so hideous, so alarming, and so conspicuous a disease that, if prevalent, it could not escape observation. We may recognise this horror in its various names, such as leontiasis and satyriasis. On the evidence of silence then we may assume that elephantiasis did not appear in Italy until about the time of Themison and Celsus. The first description of the disease, so far as we know, was written in the third century B.C. by Straton, a description handed down to Themison through his master Asclepiades. Of this disease and of its treatment Aretaeus gives a full report;[73] and Wellmann, comparing it passage by passage with that of Archigenes as preserved in Aetius, points out that in this chapter again Aretaeus was a plagiarist of Archigenes. The treatment of the disease was also identical in both—namely, venesection at the elbow, hiera, hellebore, whey, viper preparations; and—externally for the tubercles, the unguent was similar.

The hellebores were in occasional use by physicians in more ancient times. Herophilus, on whose bent for pharmacy I have already insisted, seems to have pushed this use of the drugs in some opposition to Erasistratus; and under Themison, Archigenes, Rufus, and others they came into the common use which is familiar to all classical scholars. Anticyra, Sicily, and Galatia produced the best kinds. Hellebore was used chiefly perhaps for melancholia (which, as I have said, was generally, or always, regarded by the ancients as a toxic disorder), for other insanities, and for pains in the head. Now Aretaeus further appropriates from Archigenes full directions for the use of the herbs; the white hellebore to act especially upon the upper bowel, the black on the lower; and if a prompter action were required the herbs were to be cut very fine. They were used also as urgent emetics. In spite of the prudence of Asclepiades in therapeutics—a prudence and reserve I dwelt upon last year—and the large development of the physical methods of treatment, yet under methodists and pneumatists alike reckless attacks upon disease by powerful drugs prevailed more and more; and unhappily the influence of Galen did little to discountenance them. Emetics were used by the Hippocrateans more rationally, and in moderation by Asclepiades and Celsus also, who advised them in bilious constitutions, and for certain chronic diseases. Asclepiades indeed gave warning that abuse of emetics led to loss of appetite, atony of the stomach, indigestion, and emaciation. Nevertheless, vomitives obtained their vogue under the Empire, and as an instrument of gluttony, became almost habitual. These agents were many in number, ranging from a feather in the pharynx to a pound or a pound and a half of radishes in a horrible mixture with honey, salt, and vinegar; the oxymel of squills being another mawkish alternative.

While referring to the use of hellebore in insanity I may mention not inappropriately that on the treatment of this class of disorders Archigenes seems to have held opinions of remarkable enlightenment. Seeing the priests of Cybele scampering, and flagellating, and cutting themselves after their manner, he said "they are insane, do not leave them to these bloody gods of the East, send them to me." And his therapeutics was no less enlightened, for he fed up the maniac and soothed him with music. What would Bedlam have thought of this eccentricity!

Archigenes, as reproduced by Aretaeus, had a considerable knowledge of the veins and ducts of the liver, and wrote well on phthisis, and on diabetes which was regarded as a melting down of the flesh into urine—a sort of runaway dropsy. And of the anatomy and diseases of the nervous system his knowledge was considerable; for instance, he seems to have been the first to show that hemiplegia falls upon the side opposite to that of the cerebral lesion; and moreover to attach the aura to epilepsy. In his description of tetanus Haeser thinks a note of cerebro-spinal meningitis is to be detected. He recognised also the glandular nature of the kidneys, of the testicles, and of the mammæ. One remark of Archigenes might, after the lapse of all the centuries, come as a fresh light to the modern examiner. "What we need is to be fertile in expedients, not to be always paying attention to the writings of other people."[74]

[73] It is a curious feature in Aretaeus (Ed. Adams, p. 123) that he describes at length the elephant from which the disease took its name. Why? As a transcriber? Oppian gives this same description, one copied, it is said, by both writers from Amyntianus' Περὶ ἐλεφάντων; a book I find (in Smith's Dict.) is referred to by a scholiast on Pindar.

[74] "χρὴ δὲ καὶ αὐτόν τινα συνευπορέειν, μὴ πάντα ἀλλοτρίῃ ξυγγραφίῃ προσέχοντα τὸν νόον."

The surgery of Archigenes, whose fame, says Dr. Withington, was no less honourable as a surgeon than as a physician, and that of other Eclectic physicians of this period, presents a very fair story. The ancient Greeks shrank from mutilation; and amputation, mentioned by the Hippocratean physicians only in gangrene, as a subsidiary aid, seems, even in Alexandria, to have made no great progress; for Celsus also regarded it as a last sad resource in gangrene; yet by the time of Trajan, under Archigenes, amputation had become a recognised procedure for ulcers, growths, injuries, and even for deformities. The limb to be removed was bandaged, and a tourniquet was placed above the line of severance; or sometimes the chief blood-vessels were first cut down upon and tied, and the smaller tied, or twisted, during the operation,[75]—"transfixing them with a sharp hook and twisting them round and round and closing them by this twisting"—a proceeding of which there is no trace in Hippocrates, nor apparently in the earlier Alexandria. These good methods were afterwards obliterated by the bad fashion of the searing iron. But we know that Galen used the ligatures, and where the shop was at which he bought them. Moreover, as we noted under Soranus, the whole field of surgery had come under a more intensive cultivation. Still, if it be true that in Alexandria capital operations had not made much way, yet by the traditions of Apollonius of Kition, of Lysimachus of Cos and other Hippocratean commentators, of Apollonius Mys (a Herophilist from Alexandria), of Dioscorides, and especially of Philoxenus, we learn that nevertheless in that anatomical school surgery was carried actively forward; for instance, in cutting for stone and operating for hernia, operations which, before and after the prey of specialists and adventurers, seem then for a while to have been undertaken by the general surgeon; and by Heliodorus resection of the long bones was performed. How much of the more advanced surgery under the Empire was due to Romano-Greek physicians, as, for example, to Heliodorus and to that tantalising shade, without local habitation, Antyllus—a personage who probably owed much to Heliodorus but of whom we have little more than a glimpse in Oribasius—and how much of it flowed derivatively from earlier sources we cannot definitely say; but the progress seems to have been substantial and largely original.

Out of such fragmentary and allusive records as I have tried to stitch together, recent historians of medicine, and Wellmann especially, have endeavoured to reconstruct the figure of the great eclectic pneumatist, of methodist origin, Archigenes of Apamea; a figure not wholly eclipsed in the transit of Galen, for in the sixth century his memory is still revered by Alexander of Tralles as θειότατος εἴπερ ἄλλος. That Juvenal speaks of him as a fashionable practitioner need not derogate from his merits, as we pleaded in the life of his greater predecessor Asclepiades, and as we might have to plead for fashionable physicians of our own day, who, wise men as they are, do not disdain empirical and persuasive remedies when no arm of precision is at hand. Archigenes seems in character to have been a blend not only of several schools of doctrine but also of several complementary qualities: of theorising proclivity, yet rational in methods and technically sound in practice. To his clinical insight the fruitful distinction between primary and secondary disorders, and the indication of localising symptoms, which I have quoted from Aetius, is strong testimony. If, on the one hand, it appears from Galen's respectful criticism, and from other witness, that, after the fashion of the pneumatists, he was in preciosity of language and in sophistical dialectic something of a pedant, yet, on the other hand, he did much to deliver medicine from the cramping influence of the methodist common forms based upon an abstract principle, like the "homœopathic" formula which in our own day became for a while so dear to that most theoretical of creatures the "practical" man. Nay, if besides he seems to have fallen in with the use of amulets and such like, probably it was as a tolerant and humorous observer of the foibles of mankind, and of the magical influences of faith, rather than as a charlatan or a sorcerer.

I have said that to enter upon the poison literature would in this course be impossible, for in its biological and pharmaceutical aspects it would require a lecture for itself alone.

[75] Vide Daremberg and Bussemaker's edition of Oribasius, excerpts from Heliodorus' great Χειρουργούμενα in five books; and notably the passage "περιστρέψαντες πολλάκις καὶ ἀποτυφλώσαντες ἀντὶ διὰ τῆς περιστροφῆς."—Lib. L. c. 4.

Such a chapter may be added to these lectures hereafter; but in conclusion I would indicate the place of Archigenes in this current of medical history. We have seen that Philumenus, in his Περὶ τῶν ἰοβόλων ζώων καὶ τῶν ἐν αὐτοῖς βοηθημάτων, drew largely upon him, as he did upon less eminent men of the school of Athenaeus and Soranus; and this not least in respect of poisons and their antidotes. Our tradition of the poison literature, more or less mingled in its course with that of cosmetics, begins with one Apollodorus of Alexandria (*c.* 300 B.C.); and thence in dark volume it flowed through Nicander, Philinus, Andreas, and that remarkable man, a Herophilean turned empiric—Herakleides of Tarentum. Krateuas, who seems to have worked under the patronage of Mithridates Eupator, is a very important link of this chain [76] It is with Krateuas that we enter upon the Attalid and Mithridatic period of this art and mystery, on which the *locus classicus* is the twenty-fifth chapter of Pliny's Natural History; and so to Dioscorides, to Philumenus, to Aetius who borrowed from Philumenus, and to Galen. Thus at second hand Archigenes became a main source of this sinister lore for the Middle Ages, and for the papal and ducal circles of the Renaissance.

In these lectures, Sir, if I have failed, and with but our present resources we may hardly succeed, to bring the physicians of Rome out of chronological tables and to present them in living portraiture; yet if in any subordinate degree I have made some fair endeavour to illustrate the inner movements, and to read the genius of those variously gifted races of whom Roman Medicine was engendered—the dreamy Sicilian, the positive and sagacious Greek, the subtle and daemonic Oriental which, blended in Alexandria, inspired the motley players who walked the stage of our art and mystery at the feet of the imperious mistress of the world; if in any fair measure I have done this my labour and your long suffering, for which I gratefully thank you, may have been not wholly in vain.

A CASE OF MULTIPLE MYELOMA,

WITH SOME OBSERVATIONS ON THE NATURE OF THE "BENCE JONES" PROTEIN FOUND IN THE URINE.

BY OWEN T. WILLIAMS, M.D., B.Sc. LOND., M.R.C.P. LOND.,

HONORARY ASSISTANT PHYSICIAN, ROYAL INFIRMARY, LIVERPOOL; LECTURER ON PHARMACOLOGY, UNIVERSITY OF LIVERPOOL;

AND

E. R. EVANS, M.R.C.S. ENG., L.R.C.P. LOND.

With a Pathological Report on this and Another Case

BY ERNEST GLYNN, M.A., M.D. CANTAB., M.R.C.P. LOND.,

LECTURER ON MORBID ANATOMY AND CLINICAL PATHOLOGY, UNIVERSITY OF LIVERPOOL; PATHOLOGIST TO THE ROYAL INFIRMARY, LIVERPOOL.

THE rarity of the condition in which multiple myelomata are associated with the peculiar protein in the urine described by Bence Jones [1] merits the publication of any cases which may be observed. A summary of the cases which had been recorded up to 1905 was given by Moffatt [2] in that year. In the case described below, which is a striking example of the disease, an attempt was made to elucidate the nature of the Bence Jones protein; and it was found that the protein in the urine, while giving the characteristic tests from day to day, varied at times in its composition. This would tend to show that the different opinions recorded by various observers may be due to the fact that the bodies found in the urine are derivatives of one common body, which derivatives may be present in varying quantities from time to time, not only in different cases, but even, as in this one, in the same case. The pathological report appended shows also that the different pathological findings of various workers are more apparent than real.

CASE 1.—The patient, a collier, aged 30 years, had always been a healthy man, and had had no illnesses previous to this one. He worked in the mine until Jan. 10th, 1910. When first seen on Jan. 11th he stated that he had not been feeling well all the winter. He had felt weak, having occasionally had pains in his chest and between his shoulders at various times during that period. When first seen he complained of weakness and of a very poor appetite. Mr. Evans, who had known the man for some time, found that he had wasted very considerably. Over the right fifth rib on the inner side of the nipple line there was a prominence, but no thickening of the rib could be felt. The tongue was thickly coated, and there was marked constipation. The urine gave a precipitate on warming which was not dissolved by the addition of acetic acid. During the next 12 days the patient became weaker, there was marked anorexia, and no change was observed in the chest. On Jan. 22nd Mr. Evans and Mr. C. E. Morris of Holywell examined the case together; a careful examination was made, and the whole of the spine was carefully investigated. There was no kyphosis or scoliosis, and nothing could be found to explain the protrusion on the rib. He was still unable to take food, and the tongue was very dirty.

On Feb. 8th some rigidity in the upper dorsal spinal region was observed, and the patient was too weak to get out of bed. On the 9th he was emaciated, sallow, and appeared very ill. The expression was anxious. The skin was loose and inelastic; the muscles were all soft. The mucous membranes were pale. There was no cyanosis, œdema, or jaundice. He was lying on his back with his head thrown back nearly as much as is shown in the photograph which was taken 18 days later. (Fig. 2.) The thorax, apart from the prominence over the fifth rib, was of normal conformation and moved freely. Apart from a few râles at both bases, no abnormal physical signs were detected in the chest. The abdomen was flat and moved normally, but the right rectus was quite rigid from the costal margin to the umbilicus. The heart was normal and the blood pressure was 130 mm. Hg.

There was no pigmentation of the skin or mucous membranes, and no enlarged glands could be felt in the neck, axilla, or groin. The tongue was coated with a thick brown fur. The bowels were constipated and some fæces could be felt in the sigmoid. Examination of the blood showed nothing abnormal. An examination of the motor system showed weakness of all the muscles, equal on the two sides. The small muscles of both hands seemed more wasted than the other muscles, the wasting of the thenar and hypothenar eminences being most marked. As he had been at work as a miner to within a few weeks of this examination this wasting was looked upon as being of special significance. The sensations of touch, temperature, and pain were normal over the whole body. The retinal fields were normal. The knee-jerks on both sides were exaggerated, more particularly the left. The ankle-jerk was obtained on the left side, but not on the right. The left plantar reflex was of the extensor type, though not slow; the right was flexor. Wrist, triceps, and jaw jerks were not obtained. The cranial nerves were normal. Standing up with assistance, he held his neck quite rigidly, the head being thrown slightly backwards. There was no scoliosis. The above signs were explained by the findings in the upper spinal region. The spinous ligaments between the last cervical and first dorsal, and between the latter and second dorsal vertebræ, were far less resistant than in any other part of the spine, and pressure over this region caused pain which was local, and not referred to any other part. Careful examination showed no area of anæsthesia over the area supplied by the lower cervical and upper dorsal segments of the cord. The urine of this day showed the characteristic reactions mentioned later, and a diagnosis of multiple myeloma with Bence Jones protein in the urine was made.

On Feb. 12th, on examining the ribs the first on the right side and the second and third on the left side fractured, and crepitus was afterwards observable. On the 18th the sternum fractured spontaneously just below the manubriogladiolar junction, giving rise to marked deformity as shown in Fig 1. On palpation in the second left intercostal space a well-marked thrill was felt, and a loud murmur could be heard on holding the ear near the chest wall, due presumably to the pressure on the pulmonary artery, neither thrill nor murmur being conducted into the neck. The pulsation of the great vessels could be easily felt through the chest wall. The urine passed on this day was quite milky in appearance. On the 19th the left sternoclavicular joint was disorganised, the ligaments being apparently loosened, and the inner end of the clavicle could be

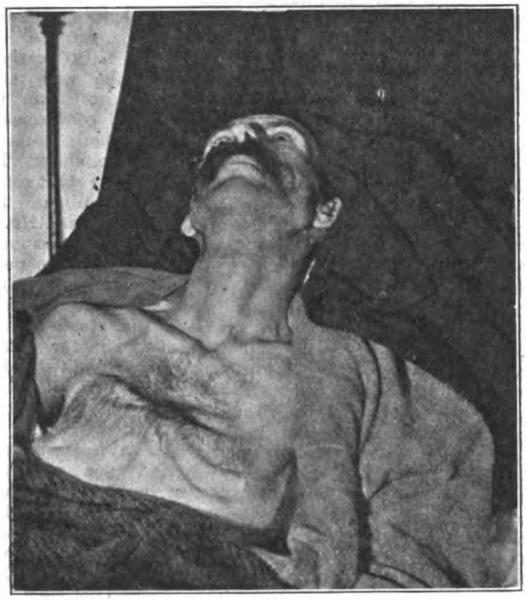
[76] Vide Krateuas, von M. Wellmann, Berlin, 1897.
[1] Philosophical Transactions of the Royal Society, 1848.
[2] THE LANCET, Jan. 28th, 1905.

easily moved in a circle of about an inch radius. On this date Dr. T. R. Bradshaw, who had had the unique experience of seeing five of these cases, saw the case with us, and he stated that clinically it conformed in every detail with the other cases which he had seen.

On Feb. 27th the patient was in much the same general condition, except that the appetite was much improved, but by this time the first, second, and third ribs on both sides were very markedly altered. They were soft and easily gave way before pressure. The photographs illustrating the condition were taken on this date. (Figs. 1 and 2.)

On March 1st the left sterno-clavicular joint was completely disorganised, and the inner end of the clavicle was drawn up into the neck by the sterno-mastoid muscle. On the 5th the patient lost the use of his legs completely, and also all sensation below the level of the loin; by the 7th there was complete loss of control of both micturition and defæcation, and death ensued on March 10th. Unfortunately a post-mortem examination was not permitted, but a piece of rib was allowed for examination.

FIG. 1.



Showing sinking in of sternum with alterations in the ribs.

The Urine.

On Feb. 11th the urine gave the specific reactions of the Bence Jones protein. On warming after the addition of acetic acid there developed at 52° C. a milky, then heavy precipitate, which disappeared almost completely at 95° C. The acetic acid gave no precipitate in the cold. On adding nitric acid a heavy precipitate formed which was soluble on warming and reappeared on cooling. This could be repeated several times. Repeatedly saturated with ammonium sulphate and well washed with the same fluid the precipitate, which dissolved in either dilute sodium chloride or water, gave the biuret test. It gave the test for loosely combined sulphur, and the potassium ferrocyanide and acetic acid test. The hydrochloric acid test (Bradshaw's test) was negative. The dialysed urine gave the same reactions. For the first few days the urine was passed quite clear, but later it became turbid and then milky.

The nature of this protein has given rise to a great deal of controversy. Bradshaw, as the result of examination of the urine of ten cases, states that it is an albumose. Magnus Levy, who isolated the protein and obtained it in a crystalline form, states that it is nearly related to a genuine albumin. Cohnheim considers it a coagulated albumin. Lindeman concludes that, while it cannot without objections be put in any group of proteins, it is nearest the true albumins.

In the various cases recorded the properties of the substance found have differed so much that either they were different bodies or were not tested pure.[3] That the proteins found can differ even from day to day is shown by the fact that the second specimen examined from the case under consideration (on Feb. 13th) gave a well-marked precipitate with cold acetic acid. A specimen of this precipitate was obtained from 500 cubic centimetres of urine, purified, and found to contain a carbohydrate radicle and no phosphorus; it therefore being a mucin. The reactions varied slightly from time to time, though on most days the nitric-acid test, coagulation temperature, loose sulphur, and "salting out" tests were quite typical. On Feb. 19th a dialysed specimen gave the hydrochloric-acid reaction quite typically, and no precipitate with acetic acid in the cold.

I then decided (after finding different reactions on two successive days) that there was probably a mixture of proteins in the urine, or that a common body was being split up differently from day to day. The dialysed specimen which gave the hydrochloric acid reaction was kept in an open vessel for two days, after which the reaction was much less marked. It then gave a precipitate with cold acetic acid (2 per cent.), which it had failed to do before.

FIG. 2.

Showing position in which head was constantly held.

This precipitate was phosphorus-free and contained a carbohydrate radicle. The probability was therefore that in this case there was a conjugated protein present, which under certain conditions resolved into other bodies, one of which was a mucin. Mucin and allied compounds belong to the group of glyco-proteins. These proteins occur in the tissues conjugated with chondroitin-sulphuric acid. An attempt was made to separate chondroitin-sulphuric acid from the protein, but none was obtained.

In the accompanying table there are the results of two days' complete analyses of the urine, which were performed with a view of obtaining some indications on which to work. It will be observed that there was an increased excretion of calcium and diminished chloride excretion.

Analysis of Urine in Case of Multiple Myeloma

	Feb. 17th. 1800 c.c.	Feb. 18th. 2100 c.c.
Total nitrogen	13·5 grammes	15·96 grammes.
Urea	27·0 "	29·61 "
Uric acid	2·07 "	0·504 "
Ammonia (as NH_3)	0·252 "	0·336 "
Phosphates (as P_2O_5)	2·16 "	2·31 "
Chlorides (as Cl)	*1·728* "	*1·65* "
Calcium	*0·594* "	*0·714* "
Sulphates (as $BaSO_4$)—		
Organic	0·025 per cent.	0·002 per cent.
Inorganic	0·28 "	0·28 "
Ratio	*1 : 11*	*1 : 160*
Creatinin, Jaffe's test	Present.	Present.

Feb. 17th.	18th.	22nd.	28th.	Mar. 3rd.
Sulphate ratio 1 : 11	1 : 160	1 : 10	Ethereal 1 : 4	practically nil.

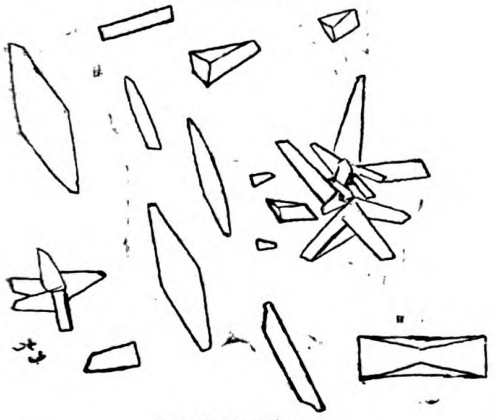
[3] Emerson: Clinical Diagnosis.

The most characteristic feature observed was the marked change in ethereal sulphate excretion, it being normal on the first occasion and markedly diminished on the second. This observation, coupled with the fact that the Bence Jones body contains loosely combined sulphur, suggested that the body might have some relation to the proteins which have recently been isolated from bone containing a high sulphur content. Loebisch, Gies,[4] and others have isolated a substance from tendons which does not differ from true mucins in its properties, and Gies has prepared an identical substance from bones which he calls "osseo-mucoid." It also possesses a high sulphur content and contains likewise a paired sulphuric acid, thus resembling a chondro-mucoid. It is obvious from the history and the photographs that in this case both tendon and bone were being rapidly broken down, and the probability of their derivatives being found in the urine is not unlikely.

The marked variation in the excretion of ethereal sulphates, with a protein in the urine containing loosely combined sulphur, led us to study the relationship between these two conditions, but unfortunately before this could be completed the patient died. On Feb. 18th from 500 cubic centimetres of urine 0·4 gramme of the protein was obtained in a pure condition. It contained 10·5 per cent. of sulphur. On March 2nd 0·3 gramme of protein was obtained, and it contained only 0·55 per cent. of sulphur. The variability in the nature of the protein found is thus obvious. It is of interest to observe that with this change in the nature of the protein there was a variation in the output of ethereal sulphate, on the first occasion there being practically no ethereal sulphates in the urine, and on the second occasion there being an excess. In view of the fact that the case terminated before these observations could be completed, it would be unwise to draw any fixed conclusions, but it is of extreme interest to find that in a disease where the bones and tendons containing chondro-mucoid are being rapidly broken down, proteins of a similar nature—in that they contain a carbohydrate radicle and a high sulphur content—are found in the urine. Two other cases of bone disease which were investigated at the same time revealed the presence of the mucin-like body, but they did not show any of the other reactions.

Another unusual feature in the case was the discovery in the urine of a crystalline form of sodium urate which is

FIG. 3.



Crystals of sodium urate.

shown in Fig. 3. These crystals are of interest in relation to the increased calcium katabolism.

We wish to thank Professor Benjamin Moore for his valuable advice and suggestions; also Miss Tozer for the drawing of the crystals of sodium urate.

Summary.

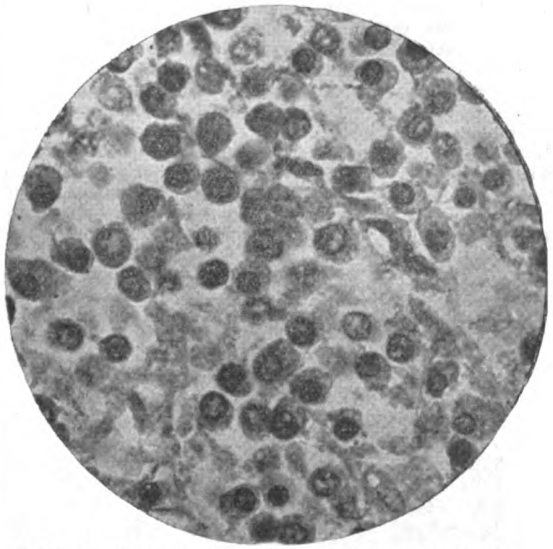
1. The protein found in this case gave on most occasions the characteristic reactions of the Bence Jones protein.
2. The reactions of the protein varied from time to time.
3. On all occasions when a thorough examination was made the protein yielded a phosphorus-free carbohydrate-containing radicle.
4. The percentage of sulphur in the protein was found to be different on two occasions.
5. This variation was found to be synchronous with an alteration in the output of ethereal sulphuric acid.
6. A possible explanation of these findings is that the chondro-mucins of the bones and tendons are broken down in different degree at various stages of the disease.

Report by Dr. Ernest Glynn.

A piece of rib 2 inches long containing a myelomatous tumour was fixed in alcohol, and portions which did not require decalcification were cut in paraffin and stained in hæmatoxylin and eosin, Unna's polychrome methylene blue decolourised with glycerin-ether mixture, and in Pappenheim's pyronin-methyl-green.

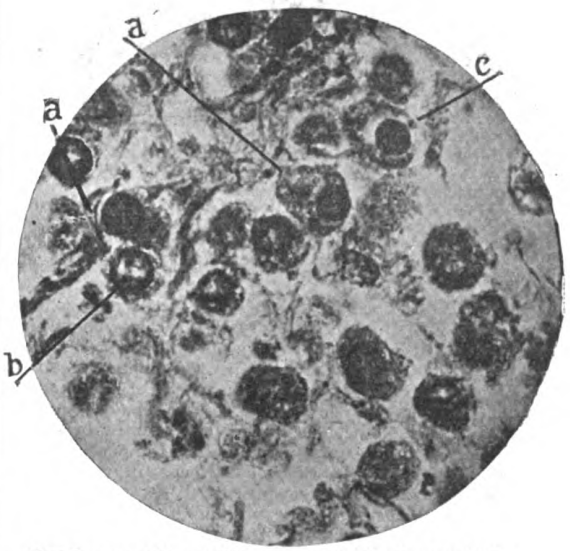
The tumour was composed of masses of cells, some of which were almost round, but the majority oval or even pyriform. (Figs. 4 and 5.) The cells varied in size; the

FIG. 4.



Section of myeloma, Case 1. × 600, showing cells of plasmacytic type—i.e., oval or pyriform cells with eccentric nuclei. Note also delicate stroma.

FIG. 5.



Case 1, same section × 1200. Note in addition to ragged cytoplasm (granuloplasm) and the delicate stroma—*a*, eccentric nuclei; *b*, wheel-shaped nucleus; and *c*, perinuclear halo.

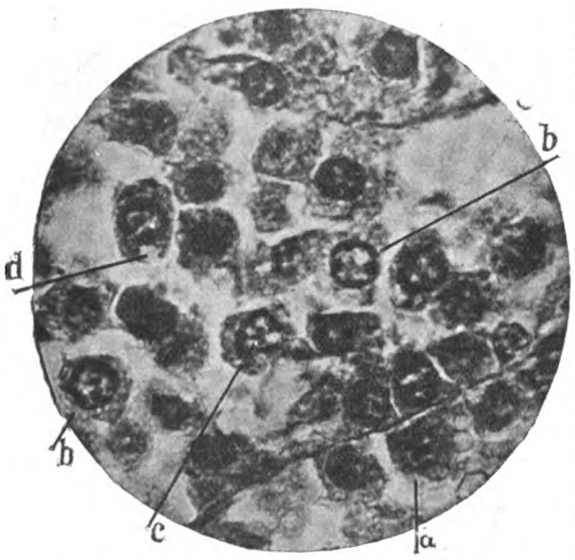
average measurement in the long axis of 12 complete cells was 8μ, the maximum was 11μ, and the minimum 5·5μ. The cytoplasm was basophilic, for it stained characteristically with pyronin and with polychrome methylene blue. In very

[4] Mann: Chemistry of the Proteids, 1906, p. 41.

thin sections it was ragged and almost granular (granuloplasma of Unna), but without real or specific granulations, also definitely vacuolated, and sometimes retracted from the circumference of the nucleus to form an unstained perinuclear halo. The nucleus was usually eccentric. It was round or slightly oval, and varied in size from 4 to 6·5μ, the average being 5μ. The chromatin stained well and tended to collect in masses at the periphery of the nucleus, while near its centre there was often a nucleolus coloured bright red with pyronin. A considerable number of the nuclei were somewhat shrunken and show hyperchromatosis, while in a few there was definite pyknosis; complete karyolysis was occasional. Some cells contained two, rarely three, nuclei, but without mitotic figures. Neutrophil myelocytes were very rare. The tumour cells were embedded in a delicate, scanty, fibrous-like stroma containing an occasional spindle-shaped nucleus. Blood spaces were few.

As pointed out by Kaufman,[5] Christian,[6] Ledingham,[7] and others the tumour cells in multiple myeloma have been classified by various observers into three main types: (*a*) myelocytic, though the granulations are not always so completely developed as in the true myelocyte; (*b*) premyelocytic cells which resemble the non-granular premyelocytes; and (*c*) plasmacytic, on account of their resemblance to plasma cells. Type B appears to be distinguished from C by the failure to stain characteristically with polychrome blue or pyronin-methyl-green, by the appearance of the nucleus, especially the absence of a mural arrangement of the chromatin, and sometimes by the larger size of the cells.[8 9] It is noteworthy that Permin's[10] three

FIG. 6.



Section of myeloma, Case 2, × 1200. Cells also of plasmacytic type. In addition to ragged cytoplasm note—*a*, eccentric nucleus; *b*, wheel-shaped nuclei; *c*, nucleolus; and *d*, vacuole in cytoplasm.

cases are all described by him as being of the premyelocytic type, while Christian described his six cases as being all of the plasmacytic type. This suggests that further research will show that the differences in the type of cell are more apparent than real, and are the result of differences in fixation, staining, and description, or perhaps in degree of anaplasia. The question is further complicated by the fact that the exact microscopical characters of the plasma cell are keenly disputed, while their occurrence in normal bone marrow is not universally recognised.

The unusual nature of the proteins found in the urine, though due in all probability to a more complete investigation in their chemical structure, might suggest that our case was an anomalous one. But the histological examination demonstrates conclusively that it is not only a true myeloma, but is practically identical with the cases classified by Christian, Wright,[11] and Ledingham as the plasmacytic type of growth. It appears to be the eighth example of this form of myelomatous tumour.

Addendum.

Cases of multiple myeloma are so rare that reference may be made to one which occurred in 1903.

CASE 2.—The patient, a male aged 49 years, under the care of Sir James Barr, died after six months' illness with numerous tumours in the vertebræ and ribs, while Bence Jones proteid was constantly present in the urine. The case was published by Moffat[12] in 1905 (who stated that the majority of the cells "were of the lymphocyte type"). Fortunately, one stained section is available, also a piece of growth preserved in Müller's fluid, and originally fixed in formol; from this paraffin sections were cut. The microscopical appearances of the tumour (Fig. 6) were identical with those of the preceding case, except that in the sections prepared from the tissue kept in Müller's fluid the nuclei were on the average 1μ larger, and as the peripheral distribution of the chromatin was more marked so the wheel-shaped appearance of the nucleus was more definite. The vacuolation of the cytoplasm was rather less distinct, though perinuclear halos were found. The other point of difference was the complete failure to stain the cells in a characteristic manner with pyronin and methyl-green even after oxidation with permanganate of potash, a failure which is almost certainly due to the method of fixation and the age of the specimen. The evidence therefore shows that this tumour is also of the plasmacytic type.

A RADICAL OPERATION FOR MALIGNANT DISEASE OF THE TESTIS.

BY RUSSELL HOWARD, M.S. LOND., F.R.C.S. ENG.,
ASSISTANT SURGEON, LONDON HOSPITAL; SURGEON, POPLAR HOSPITAL, ETC.

THE question of a radical operation for malignant disease of the testis has come more and more to the front of recent years. In other parts of the body the operations for malignant disease have been progressively elaborated until it is an axiom that extirpation of the growth, with the lymphatic glands the part drains into and the intervening lymphatics is the only radical form of operation, and that this should be done in all cases. In the case of the testicle, however, the deep situation of the involved lymphatics and the important structures which lie near them have appeared to negative the usual operative procedure, and surgeons on the whole have been content to perform castration and to trust that the lymphatics are not already infiltrated. The very few cases that escape subsequent recurrence in the glands show on what feeble grounds this hope rests, and a radical glandular operation appears to be the more urgent as local recurrence in the scrotum is rare.

Dr. J. B. Roberts of Philadelphia, in a paper published in 1902,[1] pointed this out, and he described a case in which he attempted to remove the glands by a transperitoneal incision. The operation, however, ended in the death of the patient after some months of illness. Dr. W. Osler, in a clinical lecture on Abdominal Tumours Associated with Disease of the Testicle, commented on this case as follows: "It would seem reasonable in all cases to remove them [the glands] as well as the primary tumour."[2] In a paper on the Clinical Aspects of Malignant Disease of the Testis published in 1907,[3] after analysing 57 cases and finding an overwhelming number with metastases in the glands, I discussed the possibility of more radical treatment, and argued that Dr. Roberts's case had shown that this was anatomically possible.

In THE LANCET in 1909[4] Mr. J. Bland-Sutton published a case of an improved method of removing the testicle and

[5] Kaufmann: Spezielle Pathologische Anatomie, p. 732.
[6] Christian: Journal of Experimental Medicine, vol. ix., p. 345.
[7] Weber and Ledingham: Royal Society of Medicine, Pathological Section, March, 1909, p. 196.
[8] Macallum: Journal of Experimental Medicine, vol. vi., No. 1, p. 59.
[9] Menne: Virchow's Archiv, Band clxxxiii., p. 123.
[10] Virchow's Archiv, Band clxxxix., p. 459.
[11] Wright: Johns Hopkins Hospital Reports, vol. ix., p. 359.
[12] Loc. cit.
[1] J. B. Roberts: Annals of Surgery, 1902, vol. xxxvii., p. 539.
[2] W. Osler: THE LANCET, May 25th, 1907, p. 1409.
[3] Russell Howard: Practitioner, 1907, vol. lxxix., p. 794.
[4] Bland-Sutton: THE LANCET, Nov. 13th, 1909, p. 1406.

spermatic cord for malignant disease, in which by an extra-peritoneal operation he had removed malignant glands from the lumbar region in a patient with malignant disease of the right testis. At the same time he removed the diseased organ with the spermatic cord and its lymphatics. Commenting on this case in an admirable paper on the lymphatics of the testicles recently published in THE LANCET (Fig. 1),[5] Dr. J. Kay Jamieson and Mr. J. F. Dobson say: "It cannot be allowed that either the operation of Dr. Roberts or that of Mr. Bland-Sutton warrant the use of the term 'radical'; by neither method is the 'lymphatic area' removed." They point out that "careful search," mentioned by Mr. Bland-Sutton, for the lymphatic glands is not the modern principle of dealing with malignant glands, "but the removal of masses of tissue known to contain glands, without any reference to individual glands," and that "the only effective way of securing them is to extirpate the cellulo-fatty tissue from a given area in which the glands are known to lie."

FIG. 1.

Arrangement of lymphatics of left testicle after Jamieson and Dobson.

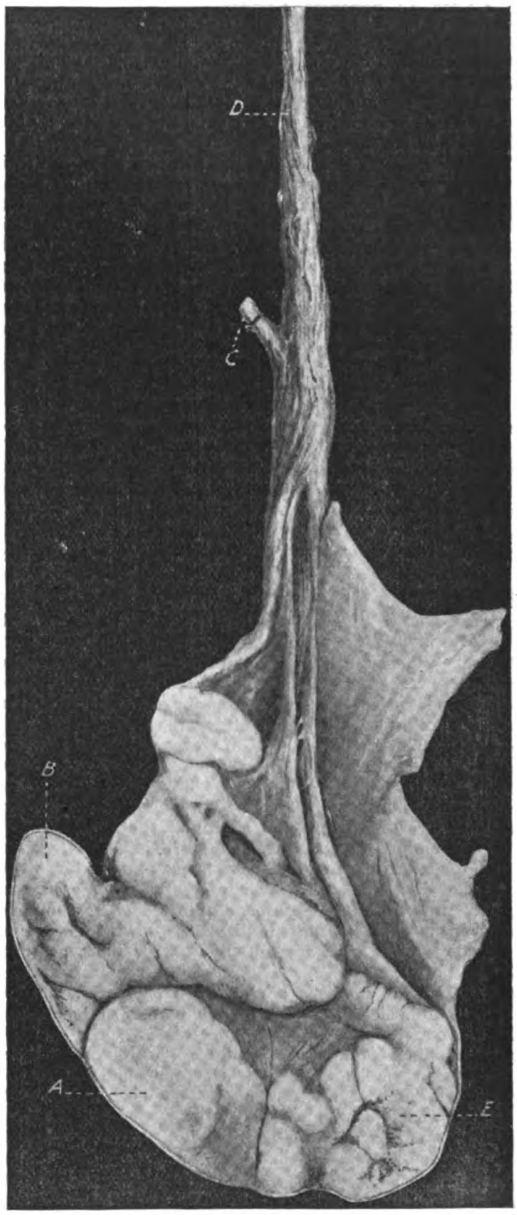
Since writing in 1907 I have been awaiting an opportunity for a radical operation on malignant disease of the testis, and this opportunity arrived in July, 1910, after the publication of Mr. Bland-Sutton's and Dr. Jamieson and Mr. Dobson's papers.

Notes of case.—The patient, a boy, aged 10 years, was admitted into the London Hospital complaining of a painless swelling of the left testis which had been present for ten weeks and which was increasing in size. On examination the left side of the scrotum was occupied by a soft irregular mass in which it was impossible to distinguish the body of the testis from the epididymis. A small hydrocele was present; the vas and cord were not involved. Rectal examination revealed nothing abnormal, and a careful examination of the abdomen revealed no mass in the lumbar region. The case was diagnosed as malignant disease of the testis, and a radical operation was decided upon.

Experiments carried out on the cadaver showed that it was possible to expose the aorta thoroughly by an extra-peritoneal incision, and notwithstanding the opinion of Jamieson and Dobson that "the transperitoneal method appears to be preferable," an extra-peritoneal operation was decided upon, as in Mr. Bland-Sutton's case. The object of the operation was to do a thorough radical operation on the lymphatic area into which the testis drained on the modern principles of the treatment of malignant growth, and that in spite of its being on the left side, and though Jamieson and Dobson say "that the intimate relations of the glands to the inferior mesenteric vessels and the renal vessels, and the fact that many of them lie under the duodenum, appear to forbid even a partial operation." At the same time it was fully recognised, according to Jamieson and Dobson's statement, that "the only effective method of removing the lumbar glands would be to strip the aorta and vena cava, the common iliac vessels, the upper part of the spermatic vessels on either side, and the trunk of the inferior mesenteric artery, of all the cellulo-fatty tissue lying around and between them from the level of the renal arteries downwards."

The operation.—An incision was made into the testis so as to confirm the diagnosis. This was found to be correct, and an incision was then made over the external ring and the spermatic cord was separated and ligatured so as to avoid loss of blood from the incision into the testis. A second incision was then made from the external ring in a curved direction external to the linea semilunaris to about 1½ inches above the umbilicus. All the layers of the abdominal wall were cut through and the peritoneum was exposed. This was dragged away from the retro-peritoneal tissue and was found to strip readily; the stripping was continued until the aorta and the common iliac and external iliac arteries were thoroughly exposed from the renal vessels downwards, the peritoneum being held back with broad retractors. The exposure was very thorough, and the whole length of the vessels was easily seen by the onlookers. The tissue round the aorta, renal arteries, inferior mesenteric, common and external iliacs, and the commencement of the internal iliacs was removed with scissors and Kocher's dissector until the vessels were quite clean as in an ordinary dissecting-room dissection. Numerous glands were removed in the tissue, but none seemed to be enlarged. When the big vessels were quite clean attention was turned to the spermatic vessels, which, with the lymphatics, had been turned back with the peritoneum. The testis with part of the scrotum was detached from everything except the spermatic

FIG. 2.



The parts removed. A, Body of testis. B, Globus major. C, Vas deferens. D, Artery, veins, and lymphatics removed in one piece. E, Globus minor.

cord, and the vas was ligatured as it turned down into the pelvis. The spermatic vessels were then stripped away from the peritoneum as far as the renal vein, a ligature was applied, and the whole growth, artery, veins, and lymphatics were removed. (Fig. 2.) The exposure of the vessels, &c., was so complete that the dissection was easily carried out without

[5] Jamieson and Dobson: THE LANCET, Feb. 19th, 1910, p. 493.

any danger. The duodenum readily turned back off the aorta. After removal of the testis the peritoneum was replaced, the retro-peritoneal area was drained with a tube, and the abdominal wall was sutured. The whole operation took one hour; there was no marked shock, and bleeding was insignificant.

The patient's convalescence was interrupted by a mild attack of pneumonia, but he left the hospital three and a half weeks after the operation with the wound soundly healed.

Dr. H. M. Turnbull, of the London Hospital Pathological Institute, reported as follows: "Small round-celled sarcoma of the epididymis and testicle. The growth consists of closely packed rounded cells with dark nuclei and very little protoplasm. The globus minor shows almost perfectly homogeneous infiltration with sarcoma cells. The left iliac glands and the left lumbar glands are normal, and show no sarcoma cells." The growth is peculiar in that it appears to have primarily affected the epididymis and to have spread to the testis, and not to be a primarily malignant growth of the body, as is usual.

The case was perhaps a fortunate one as a first operation in that it occurred in a thin boy, but that a truly radical operation on the lymphatic area in malignant disease of the testis is possible cannot be disputed. In fact, the operation went a step further than Jamieson and Dobson's ideal operation, in that it cleared the whole of the external iliac artery and vein, instead of the upper third only, and their dictum that the operation "is exceedingly difficult and dangerous, if not impracticable," does not hold good in boys, at any rate.

Devonshire-street, W.

THE TREATMENT OF PULMONARY TUBERCULOSIS BY INTRAVENOUS INJECTIONS OF CHINOSOL WITH FORMALDEHYDE.

BY JOHN McELROY, L.R.C.P. & S. EDIN., L.F.P.S. GLASG.

WHEN so much publicity is being given to the prevention and treatment of tuberculous conditions, the history of what seemingly is a rapid and perhaps permanent cure of a pulmonary tuberculous case may be of interest to readers of THE LANCET. Some of my professional brethren more fortunately situated as regards cases for extended trial of the treatment might see if their results were as pronounced.

Last year, when in Bootle, Liverpool, the intravenous injection of formaldehyde in pulmonary tuberculosis was brought to my notice by Dr. F. W. Baker Young, who used the apparatus as recommended by Dr. Robert Maguire of the Brompton Chest Hospital, but modified the strength of his solutions, and used as a medium sterilised distilled water instead of saline solution. I have heard and read of various germicides being used intravenously, but so far have not heard of anyone using chinosol, a quinine potash compound, and a very powerful germicide. In the following cases I used it in conjunction with formaldehyde with most gratifying results.

CASE 1.—The patient, a man aged 54 years, had been ailing for almost 12 months with a history of hæmoptysis, pleurisy, cough, and profuse expectoration, and of having lost a considerable amount of weight. Acting on the advice of his medical attendants he spent four months at a sanatorium, and, although he put on 21 pounds in weight, when he left he was in a very weak condition, and the cough and expectoration had decreased very little. He tried as well as possible when at home to keep up his sanatorium methods, and for five weeks held his own as far as his weight was concerned, but was not getting any stronger. He then began to lose weight, and for the three weeks before coming under my care lost 1 pound, 1½ pounds, and 2½ pounds respectively. Under the intravenous injection of chinosol and formaldehyde he recovered his weight, rapidly regained strength, and at the end of four weeks' treatment was able to walk—without unduly distressing himself—two or three miles at a time. His chest condition before treatment showed symptoms of a cavity at the apex of the right lung, with signs of involvement of the middle and lower lobes. After treatment all adventitious sounds had disappeared, and the only appreciable deficiency was at the apex, where the expansion was not what it ought to be, this naturally being due to the contraction brought about by the healing process. Dr. J. A. Sinton of the Queen's University, Belfast, examined the sputum for me before, during, and after treatment, and reported as follows:

Before treatment.—Oct. 23rd, 1909: Tubercle bacilli very numerous and averaging about 15 per field.
During treatment.—Nov. 1st: Tubercle bacilli less numerous. 23rd: Tubercle bacilli scanty. Dec. 13th: Tubercle bacilli very scanty and nearly all of the granular type, and averaging about one per field.
Since treatment.—Feb. 21st, 1910: Tubercle bacilli absent. April 18th: Tubercle bacilli absent.

From Dec. 13th, 1909, onwards I was unable to get a specimen of sputum, but on Feb. 21st, 1910, the patient was working all day in the rain and dried his wet clothes on himself. He then took an acute attack of bronchitis, and at this time I had his sputum examined, when Dr. Sinton, after a most exhaustive examination, was unable to detect any tubercle bacilli. I was able to get a small specimen again on April 18th, and Dr. Sinton notified me that he was still unable to detect any bacilli. At the present time (Nov. 5th) the patient is as well as possible and is working as hard as ever he did in all kinds of weather. He cycles to and from his business, distant over two miles, and all uphill the one way. Expectoration is completely absent. The patient is an engineer, commences his work at 6 A.M., and is often working all night.

Since treating the foregoing case I have had two more cases under my care, brief details of which I will now give.

CASE 2.—In this case expectoration has been reduced to less than one-half, the weight has increased to normal, and the patient's strength has improved vastly. The sputum at the present date shows a reduction in tubercle bacilli from 20 to 12 per field, and the granular type is now predominant. This patient at first only got half the number of injections I considered he would require, as he developed a phlebitis in his veins and I had to stop treatment. He is again receiving injections, but unfortunately I have a great deal of difficulty in administering them, as his veins seem to be very easily irritated. He has, however, not lost ground. His chest condition is much better and the negative lung pressure is almost doubled.

CASE 3.—This patient is still under observation, but I have stopped treatment, and he has been working at his trade—that of a ship carpenter—for the last five weeks. The night sweats stopped after about ten injections and his temperature became normal, fluctuating occasionally until Sept. 13th, when it became normal, and has since continued to do so. I administered the first injection upon July 6th, and between that date and Sept. 18th administered 36 injections in all. On Oct. 3rd he resumed work, and at the present date he is working hard from 6 A.M. till 5.30 P.M. in all kinds of weather without experiencing any ill results. He can walk five miles in one and a quarter hours without undue fatigue. All râles and crepitations have disappeared from the chest, medium râles being very pronounced back and front in right lung and fine crepitations in upper portion of left lung before treatment. Expectoration is almost absent, the tubercle bacilli being reduced from 40 to 8 per field, the bigger number in this case also being granular. At the same rate of decrease I hope to see it negative in about another two months.

The method of administering injections was as follows, Dr. Maguire's apparatus being used. 50 cubic centimetres of a 1/2000 solution of formaldehyde plus 1/4000 solution of chinosol were injected into the median-basilic or median-cephalic vein—the usual precautions being taken—and this was repeated daily, the strength being gradually increased.

In Case 1 I administered 33 injections altogether on 33 consecutive days, the strength being increased to 1/500 in the case of the formaldehyde and to 1/1000 in the case of the chinosol. Many cases will require more injections, but I do not consider it advisable to increase the strength of the formaldehyde above 1/500, the strength of the solution being increased above that figure by increasing the chinosol from 1/1000 to 1/500. Beyond slight gastric disturbance the patient suffered no inconvenience.

Has the chinosol in conjunction with the formaldehyde, when injected intravenously, any destructive effect upon the tubercle bacillus itself; or, on the other hand, does it assist nature's efforts and cause a reactive inflammation around the tuberculous area, and so encapsulate the caseous mass, and by so doing not only isolate and bring about the natural cure of the diseased area, but prevent the admission of the

ordinary bacteria of suppuration which are an additional danger to the natural process of healing? If quinine has a specific action on the malarial fevers, is it not possible that in the case of chinosol, injected intravenously, it may have a selective, destructive action upon the tubercle bacillus itself? In Dr. Sinton's report of Dec. 13th on the sputum of the patient in Case 1, the bacilli were practically all of the granular type, and in the reports of the sputa in Cases 2 and 3 the bacilli have become more granular. This condition I consider is worthy of further inquiry, and suggests direct action upon the bacilli.

Sanatorium treatment is undoubtedly of great assistance in retarding the progress of the disease, but I have yet to meet with a case with pronounced chest symptoms and a sputum rich in tubercle bacilli that sanatorium treatment alone has so definitely or so quickly arrested. I have seen the reports of several sanatoriums and in none have I seen any record made of the sputum conditions when the patient left the sanatorium. What is the good of a treatment if the patient—even if a good deal improved—is allowed to expectorate promiscuously a sputum containing tubercle bacilli? This is where the real danger lies. Until we have more stringent laws relative to the proper preventive measures to be adopted against infection, sanatorium treatment alone will not be of as much service to the community as it might.

There are other points which one might elaborate at great length, more particularly the proper segregation of patients in sanatoriums, but what I have written is primarily to call attention to the possible, I think I might say probable, efficacy of intravenous injections of chinosol and formaldehyde.

I have to thank Professor J. A. Lindsay for kindly examining the first of my three patients after treatment; Dr. Sinton for his most careful examinations of the sputum; and Dr. Baker Young for his practical instructions in the technique of intravenous injections.

Belfast.

NOTES ON THE OPERATIVE TREATMENT OF PAPILLOMA OF THE BLADDER.

BY J. W. THOMSON WALKER, M.B. EDIN., F.R.C.S. ENG.,

ASSISTANT SURGEON TO ST. PETER'S HOSPITAL FOR STONE AND OTHER URINARY DISEASES.

THE recurrence of papilloma of the bladder after operation is a commonplace of surgical conversation and a constant, if reluctant, admission of all writings on the subject. Our present knowledge would lead us to suppose that there may be several factors involved in the causation of this recurrence. I shall here deal only with those which are specially related to the technique of the operations undertaken for the removal of these papillomata. Two probable and important causes of recurrence are: (1) the incomplete removal of the papilloma at the time of the operation; and (2) the implantation of fresh papillomata during the operation. In the course of cystoscopic examinations upon patients previously operated upon for papilloma of the bladder by other surgeons at a recent date—that is to say, within a few weeks or months of the operation—I have in more than one case noted a small bud of papilloma or two small buds present in the bladder. On more detailed examination I found that the papillomata were set at the edge of the scar which resulted from the removal of the original growth. The following notes are illustrative of this statement:—

CASE 1.—The patient was a man, aged 35 years, who came under my observation at St. Peter's Hospital in August, 1908, suffering from hæmaturia. Two months previously he had undergone an operation for papilloma of the bladder at the hands of another surgeon. On cystoscopy the bladder was healthy, with the exception of an area in the neighbourhood of the left ureteric orifice. (Fig. 1.) A quarter of an inch outside the left ureteric orifice there were two small buds of papillomatous growth close together, and rather less than a split-pea in size. From the base of these, folds of unusually smooth and firm-looking mucous membrane passed inwards towards the middle line. In this scar tissue the left ureteric orifice appeared as a slit running parallel to the folds. I obtained the following information in regard to the operation. At the end of May, 1908, a fairly large pedunculated papilloma was found to the outer side of the left ureteric orifice and a smaller one lying near the apex of the bladder. The large growth was grasped in forceps and twisted off. Another small growth was similarly treated. Oozing from the base of each was stopped by touching with the electric cautery. In December, 1900, eight years previous to this operation, he had undergone a similar operation for a pedunculated papilloma situated outside the left ureteric orifice. In this case, therefore, there was recurrence in the same spot

FIG. 1.

Cystoscopic view of recurrent papillomata on scar of previous operation. The ureteric orifice is seen in the scar.

after two similar operations. In such cases the operation, whatever form it took, was not sufficiently radical to remove the whole growth.

Yet another form of recurrence may be met with after the removal of a papilloma. At some part of the bladder adjacent to, or remote from, the site of the original growth one or more papillomata are found, while the operation area is free from growth. I have no doubt, from the size of the papillomata and their discovery so soon after the operation, that in some of these cases the tumours were present when the original papilloma was removed, but were overlooked.

There are other cases where a solitary papilloma has been carefully localised and its isolation definitely determined by a pre-operative cystoscopy, and where, in about a year later, the bladder has been found strewn with numerous sma papillomata.

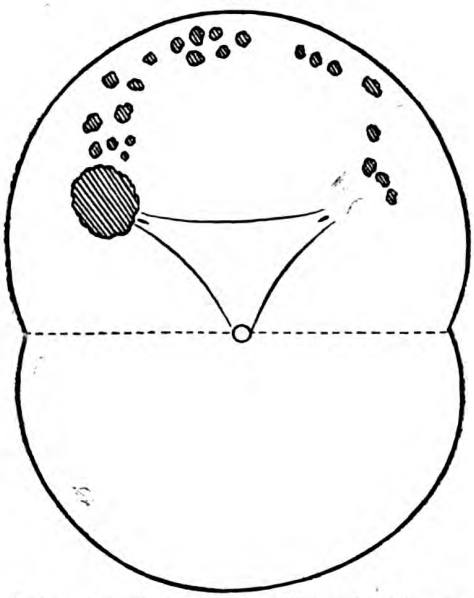
CASE 2.—In August, 1905, I removed a pedunculated papilloma from the neighbourhood of the right ureter in a man aged 31 years, who had suffered for 12 months from intermittent hæmaturia. The operation was performed by placing a clamp on the pedicle of the tumour and clipping away the papilloma with curved scissors. The clamp was removed and the electric cautery applied to the base to stop oozing. Three months later a few drops of blood were noticed at the end of micturition. In February, 1906, attacks of hæmaturia commenced and recurred at intervals until I saw him in August, 1906. The hæmaturia lasted four or five days and the blood was well mixed with the urine. There was increased frequency of micturition to 12 or 14 times and scalding during the act. Cystoscopy in June, 1906, showed a fair-sized papilloma on the outer lip of the right ureter at the spot from which the first tumour had been removed. From this spot there was a track of tiny papillomatous buds, which passed in the form of an arc to the apex of the bladder and continued symmetrically across the other side of the bladder almost to the left ureter. The number of these small papillomata was between 20 and 30. (Fig. 2.) In such a case it seems most probable that the small papillomata are seedlings implanted on the bladder wall at the time of the operation, and the trail that they frequently form from the site of the original growth to the scar of the cystotomy wound is evidence in support of this view.

In operating upon cases of recurrent papilloma I have frequently found the largest growth situated on the site of the scar of the cystotomy wound or immediately adjacent to it. There may or may not be a recurrence at the site of the original growth. I have little doubt that such a papilloma was implanted during the removal of the original growth. The two cystoscopic charts, which follow, are selected from a number of such cases. They are reproduced from patients

on whom I afterwards operated. The following is a brief synopsis of these cases:—

CASE 3.—The patient, a married woman, aged 56 years, was under the care of Dr. T. Hoskings, who asked me to see her for severe hæmaturia in October, 1909. Six years previously a small papilloma had been removed by another surgeon after six months of intermittent hæmaturia. She

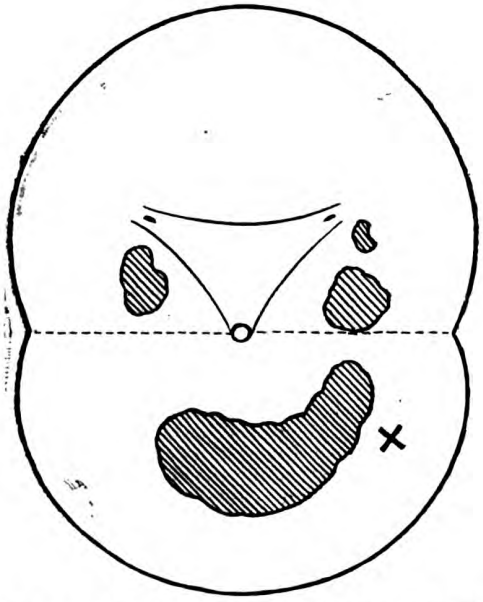
FIG. 2.



Cystoscopic chart of recurrent papillomata forming an arc extending to apex of bladder.

was free from symptoms for 18 months, and then the bleeding recommenced, and had continued at intervals since. The intervals between the attacks varied from one to six weeks. I saw her during a period of hæmaturia, which had been continuous for 14 days. The urine was dark brown and con-

FIG. 3.

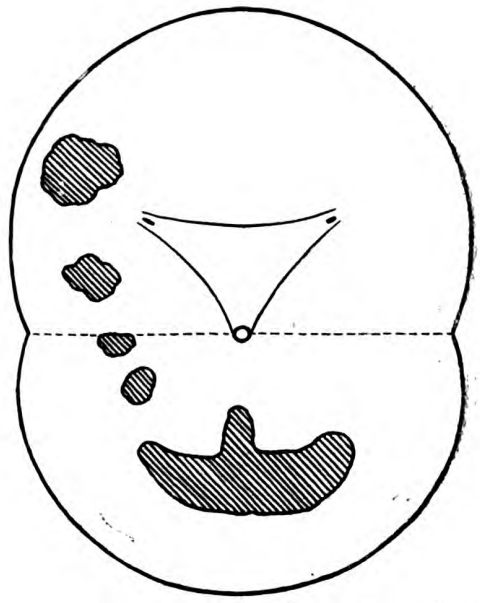


Cystoscopic chart of recurrent papillomata. The largest mass lay on the old cystotomy scar. At × a small bud of papilloma was hidden from view and discovered at operation.

tained clots. The patient was a stout, healthy looking woman. Cystoscopy showed four distinct papillomatous growths, three of which were of medium size and subsessile, varying from the size of a large pea to that of a hazel-nut, while the fourth was a large mass about two and a half inches in breadth and lying across the middle line on the anterior wall about half-way between the urethral meatus and the apex. (Fig. 3.) The surface of the growths was sponge-like without any long tentacles. There was no sign of infiltration of the mucous membrane of the bladder. The mucous membrane around the right ureteric orifice was scarred and the papilloma had probably been removed from this spot. I excised the papillomata in the manner that I shall presently describe.

CASE 4.—The second chart (Fig. 4) represents the bladder in the following case. The patient, a man aged 34 years, had a severe attack of hæmaturia with some pain in the right lumbar region. In August, 1907, he was admitted to a general hospital and confined to bed for three weeks. The blood gradually disappeared from the urine, and he was dismissed as "cured." When he recommenced work the blood reappeared in his urine. I saw him at St. Peter's Hospital in January, 1908, and on cystoscopy found a papilloma close to the outer side of the right ureteric orifice. The rest of the bladder was healthy. The patient was admitted to the

FIG. 4.



Cystoscopic chart of recurrent papillomata. There is local recurrence outside the right ureteric orifice and a trail to the cystotomy wound, on the scar of which the largest mass is situated.

hospital and an operation was performed by one of my colleagues. The growth was grasped in forceps and twisted off "fairly cleanly." The patient was well for 15 months, when the bleeding commenced again. I cystoscoped him in October, 1909, and found five distinct masses of papilloma. One rather low, and apparently sessile, mass lay immediately outside and behind the right ureter in the position of the original growth. These smaller clumps formed an almost continuous track, which passed forwards and upwards to the right of the trigone. On the anterior wall, about two inches above the internal meatus, lay a large mass of papilloma with a long axis of over two inches lying transversely across the middle line. (Fig. 4.) I removed these growths in November, 1909.

It is worth while from the operative point of view to note these points, and so to plan the operation as to avoid such sources of recurrence. For some years past I have operated with this view, and the following is an account of the technique that has developed.

1. *Preliminary cystoscopy.*—Apart from the question of diagnosis of a bladder growth and of the recognition of its nature, a pre-operative cystoscopy should be made to determine the exact number and position of the papillomata. It is not sufficient to trust to touch and sight to display the number and position of the growths *after* the bladder has

been opened. The bladder is a deep-seated collapsible organ, which falls into innumerable folds when it is opened. Among these folds papillomata are readily concealed. The surgeon who trusts to cystotomy to display the tumours is likely to overlook small buds or even papillomata of some size which are hidden between these folds. This is more likely to happen where cystitis is present as a complication. After the removal of one papilloma bleeding frequently obscures the view, so that unless there is some previous knowledge as to the exact number and position of the growths the surgeon is working at a disadvantage.

Where the papillomata are multiple I make a chart of their number and position, and with this before me at the operation there is little likelihood that small detached papillomata will be overlooked. Two of these charts have been reproduced to illustrate the cases just described. With the bladder fully distended with fluid and a good light the growths are readily counted and localised with the cystoscope.

Two difficulties in regard to this pre-operative cystoscopy may be mentioned. Occasionally on the anterior or lateral walls a large papilloma may conceal one or two smaller buds from view when they lie immediately behind (Fig. 3, ×), but in this position they are little likely to escape observation at the operation, and it should be the first care of the surgeon on opening the bladder to verify the numbers and position of the tumours already charted, and to note any that may be hidden from the cystoscopic view. Again, the mere size of a single papilloma may so fill the bladder that the beak of the cystoscope sinks directly into its folds. Complete darkness may be the result, or the folds of the growth restrict the movements of the cystoscope beak and only permit a small part of the growth to be seen. Such a case as the following is, however, rare.

CASE 5.—In September, 1909, I saw a man, aged 58 years, in consultation with Mr. J. F. Jennings. He gave a history of 12 months' hæmaturia, which first appeared after bicycling. There had been three attacks of hæmaturia of sudden onset and short duration. Cystoscopy was performed under eucaine. The bladder wash returned clear at once, and a distension of 10 ounces was borne without discomfort. On introducing the cystoscope the bladder appeared to be very dark, and there was a little difficulty in manipulating the cystoscope. On rotating the instrument the edge of a papilloma, close to the window of the cystoscope, suddenly became brilliantly illuminated, and I realised that I had pushed the beak into the middle of a large papilloma. Subsequent efforts to obtain a better view were fruitless, and operation was recommended. On Sept. 7th I removed a large single papilloma the size of a Tangerine orange. The rest of the bladder was healthy.

2. *The proper exposure of the growth.*—A vertical median suprapubic wound of 3 inches will suffice for most operations upon vesical papillomata. In stout patients the length of the wound through the skin and fat may be extended, but the separation of the recti need not exceed this limit. An extension of the abdominal wound upwards towards the umbilicus does not give a better exposure of the bladder, but merely uncovers more peritoneum. If further room is required in a powerful man, whose boisterous respiration and the rigidity of whose recti are not controlled by deep anæsthesia, it is best obtained by incising each rectus muscle about 2 inches above the pubes, or if the manipulation is likely to be required on one side more than the other the corresponding rectus may be cut transversely for one-third or so of its width. I usually place a catgut suture through the upper cut end of the muscle at once to help in the repair of the muscle at the completion of the operation. I have not had to resort to a transverse suprapubic incision for the removal of simple papillomata.

When the bladder is opened suprapubically the walls collapse upon the base, so that the whole organ drops down into the pelvis. If the intra-peritoneal tension is low, as it may be in aged and feeble subjects, a large air-filled space is left. Usually, however, the intra-peritoneal pressure forces the peritoneum with coils of small intestine into this space, and the bladder disappears from view. If the edges of the bladder wound are held up by forceps or sutures the posterior wall is forced towards the pubes and the lateral walls towards the middle line by the same pressure, so that a view of the base of the organ cannot be obtained. These difficulties are overcome in the following manner. Having opened the bladder a suture is placed through the whole thickness of each lip of the bladder wound. The patient is now placed in the full Trendelenburg position. This is an indispensable factor in the proper exposure of the interior of the bladder. The bulging of the upper or posterior wall of the bladder now disappears or is easily controlled. There is still a tendency for the lateral walls of the bladder to collapse and hide the base and the abdominal and vesical wounds must be retracted. In order to overcome these obstacles to a full view I have designed a retractor which was recently described in THE LANCET (March 5th, 1910).

FIG. 5.

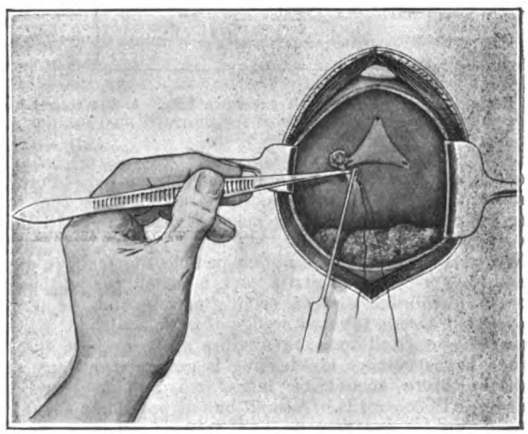
A bladder retractor.

By grasping the handle of this retractor with the thumb held vertically and tucked into the recurved portion, traction is exerted on the abdominal wound, and at the same time the bladder wall is pushed outwards. The shank of the instrument should be flat on the skin of the abdomen. I usually place a broad retractor on the side opposite to that on which the papilloma is set and a narrow blade retractor on the same side. By these means and by the aid of a head-lamp the interior of the bladder is fully displayed.

It is sometimes necessary to place a roll of gauze in the post-trigonal space to control still further a bulging posterior wall. I have found that careful preparation of the bowel beforehand and the quiet anæsthesia of chloroform during the operation are factors which are of some importance. The first care of the surgeon will be to enumerate the growths and compare them with his chart.

3. *The removal of the papillomata.*—Papillomata vary greatly in their relation to the vesical mucous membrane. There are papillomata, invariably single, which are attached to the mucous membrane by a long stalk, and there are others set on a short, thick stem, but still distinctly pedunculated.

FIG. 6.



Removal of a solitary pedunculated papilloma; a thread of catgut is being passed through the base.

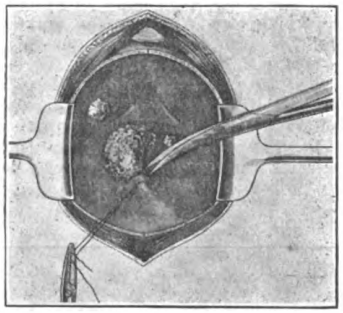
The most frequent type is set upon the mucous membrane like a well-shaped sponge of rather coarse texture, and attached by a base so short that it cannot be called a pedicle, yet too narrow for the arrangement to be termed sessile. There are others which are sessile and which carpet the mucous membrane for considerable areas like a luxuriant

low shrub. All varieties, with the exception of the long pedicled type, may co-exist in the same bladder. A very large growth is frequently solitary, and may have a short and comparatively narrow base of attachment, which may, however, extend along the mucous membrane for an inch or more.

In removing the pedicled variety I usually pick the growth up in long fine forceps, and pass a double strand of very fine catgut through the base of the pedicle, or, better, through the adjacent mucous membrane, which is raised by putting the pedicle on the stretch. (Fig. 6.) A fine, rounded, curved needle is used for this purpose, and held in a long, fine needle holder. For transfixing the base at difficult angles I use a small, fine, curved needle, set at right angles to a long fine handle, which is left untempered for two inches close to the needle, so that it may be bent at will to any angle. The thread of catgut is severed and the needle withdrawn. The two threads are now tied, so that one half of the pedicle is grasped in each, and the pedicle cut through above this. Usually there is no bleeding, but if oozing does occur another stitch may be introduced. The catgut stitches are cut short.

In larger growths with a short narrow base attached along a line of mucous membrane I commence by placing a catgut stitch through the mucous membrane and muscle above the nearest end of the pedicle. This raises a ridge of mucous membrane, and with scissors this is cut across just short of the pedicle. (Fig. 7.) Another catgut stitch is introduced by means of the special needle described above. This is tied and a further cut made with the scissors, taking care to clear the last suture and not to cut it away. Should a vessel spout it is picked up in long pressure forceps, which are left on until the papilloma is removed and then taken off, or a catgut ligature may be applied. Bleeding from these vessels is usually controlled by pressure forceps and the pressure of the sutures which close the wound. The cutting and stitching

FIG. 7.



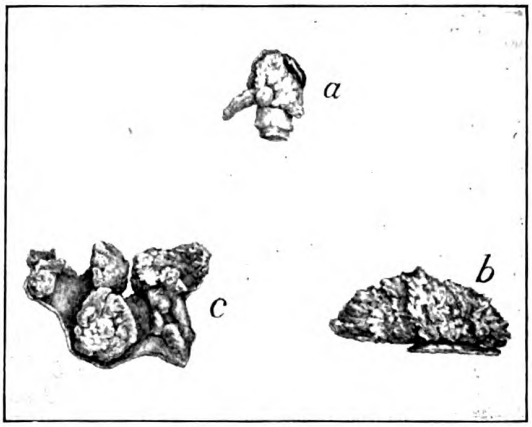
Removal of papilloma with extensive base. A fine catgut suture has been introduced above the papilloma, and the ridge thus raised has been cut across.

are continued until the papilloma is removed. Forcible traction upon the sutures should be avoided, for they will tear out, but gentle traction may be exerted and will bring the wound into closer view.

Where there is a thick, fibrous pedicle the mucous membrane may be cut round its base, a stitch passed through mucous membrane and underlying muscle, and the fibrous pedicle cut across, taking a wedge of muscle with it. Having removed the papilloma the stitches are cut short and the wound is inspected. If bleeding is going on at any spot another suture should be introduced and tied and the pressure will control it. A small bud of papilloma should be picked up in fine forceps and snipped off with curved scissors, taking a piece of mucous membrane with it. The cut edges are then brought together with a fine catgut stitch. Where an area of mucous membrane is carpeted with low, shrub-like growth, the strip of the membrane bearing the growths should be excised with curved scissors, and the cut edges united with a series of fine catgut stitches (Fig. 8). In removing the papillomata care should be taken that the edges of the cystotomy wound are not soiled. Before leaving each little wound the bleeding must be completely stopped. Sometimes an oozing from the mucous membrane is difficult to control, and occasionally a few touches with a fine electrocautery point are necessary.

It will be noted that the above methods are dependent on good exposure, clean cutting, and accurate suture. In my view rapid healing is more likely to be promoted in this way than by any method of crushing, tearing, or twisting of the base of the growth. The catgut sutures have not caused any inconvenience in my hands. On examination of the bladder

FIG. 8.



Three types of papillomata after removal. (*a*) Cauliflower-like papilloma with fibrous pedicle. The mucous membrane has partly retracted from the fibrous core of the pedicle. (*b*) Sponge-like papilloma removed with mucous membrane at base. (*c*) Strip of mucous membrane covered with low shrub-like growth.

with the cystoscope after recovery from such an operation, no trace of the suture is to be found. Silk sutures are to be avoided, as they almost always accumulate phosphate deposit, and give rise to trouble afterwards.

A word must be said in regard to clamps. Some years ago I had a clamp made with flat blades, one grooved and the other ridged, about one-eighth of an inch thick, and set at an angle to strong handles. With this I proposed to clamp the base of the growths, and with an instrument like a large adenoid curette to scrape the papillomata from the surface of the clamp. I found there were several objections to this method. It was very difficult to get clamps of the size and angle to suit the varieties and different positions at which papillomata are found in the bladder, so that if the papillomata were to be accurately clamped a number of instruments would be required. Many papillomata are closely related to the ureteric openings, and there is a very real danger of including the ureteric orifice in the clamp, if the clamp is applied, as it should be, so as to include mucous membrane in the bite. I found further that there was a tendency of some part of a large base to slip out of a clamp altogether, and troublesome bleeding followed.

Where I have to deal with a large solitary papilloma I sometimes use a Guyon's clamp in order to steady the base of the tumour during the stitching. This clamp has a very convenient curve, and on the contact surface of one blade there are several teeth, which sink into corresponding holes on the contact surface of the other blade. This prevents any portion of the pedicle from slipping out of the clamp. The clamp should be carefully adjusted so as to grasp the base of the papilloma with some mucous membrane. When it is in position and locked catgut sutures should be placed on the bladder side of the base, dipping below the convex border of the clamp and out at the other side. These are held aside; the papilloma is clipped away from the concave border of the clamp, which is then removed, and the sutures tied in series, introducing an additional one or more if necessary. This method may be used in the large isolated type of papilloma. It is described and recommended by Albarran.[1] It is not suited to the form in which there are numerous small, scattered papillomata, or where a considerable area of bladder wall is covered with clusters of papillomata.

[1] Médecine Opératoire des Voies Urinaires, 1909.

In operating upon tumours in the bladder, I have frequently noticed a peculiar condition of the bladder wall, and which seems worthy of mention. After working in the bladder for half or three-quarters of an hour the mucous membrane becomes thick and rather œdematous in appearance, and the bladder muscle contracts and thickens, so that the exposure of the interior of the viscus becomes more difficult. These changes are probably due to the prolonged exposure to air, but they are followed by no ill-effects.

Having carefully freed the bladder from blood-clot, and removed gauze pads or swabs from the post-trigonal area, the question of closing or draining the bladder will arise. After a trial of suturing the cystotomy wound in these cases, and after one or two failures from serious hæmorrhage, I have abandoned the method. If the bladder is sutured and the urine, by any chance, such as the blocking of the catheter by a clot or the slipping of the tied-in catheter, accumulates and distends it, hæmorrhage is encouraged, and should hæmorrhage take place a retained catheter, however large, is not a sufficient means of drainage. I now drain the bladder in these cases from the first by means of a large rubber tube, three quarters of an inch in diameter. A stitch or two are usually required to close the bladder wound around this tube. In addition I place a small rubber tube, which dips into the prevesical space, at the lower angle of the wound. This ensures the removal of any urine which may escape into this space. The abdominal wound is carefully repaired by uniting the cut portions of recti and approximating the recti muscles by means of catgut sutures.

In the after-treatment I use a very simple method of removing the urine which is neither a syphon nor a suction method, but merely drains the overflow. One end of a yard of medium-sized soft rubber Paul's colotomy tubing is drawn over the prominent end of the rubber drainage-tube and tied round with a piece of silk to retain it. This is brought through the dressings and passing over the edge of the bed dips into a jar. To ensure that the surfaces do not adhere and block the flow of urine two drachms of olive oil are poured through the tube before adjusting it. The tube is changed at each daily dressing, when the bladder is irrigated with oxycyanide of mercury (1 in 10,000). On the fourth day the drainage-tubes are both removed and the urine may be allowed to soak into large pads of cellulose wadding, or an Irving apparatus may be applied. In my experience the wound heals more quickly without any apparatus.

Queen Anne-street, W.

ON CHRONIC BRONCHITIS AND EMPHYSEMA AS THE RESULT OF ACUTE PNEUMONIA.

BY SAMUEL WEST, M.D. OXON., F.R.C.P. LOND.,
PHYSICIAN AND LECTURER ON THE PRINCIPLES AND PRACTICE OF MEDICINE, ST. BARTHOLOMEW'S HOSPITAL, ETC.

IT is not surprising that so severe a disease as pneumonia should be followed by serious nutritive changes in the lungs. Of the local changes in the consolidated parts it is not necessary to speak. I wish to draw attention to less recognised results which affect the lungs generally. The two affections I refer to are bronchitis, on the one hand, and emphysema on the other.

The signs of bronchitis associated with pneumonia in its acute stage have a different significance according as they have preceded the attack of pneumonia or developed in the course of it. Where the pneumonia is subsequent—i.e., occurs in the course of bronchitis—the association of the two affections is awkward but not necessarily of very grave significance. Where, on the other hand, the physical signs of general bronchitis develop in the course of the pneumonia they indicate not a mere bronchitis or complication of the pneumonia but pulmonary failure, a very serious condition and almost necessarily fatal.

In a severe case of pneumonia the pathological changes are not limited to the parts which become consolidated but are widespread and affect the whole of both lungs. This is recognised pathologically, but clinically is usually disregarded unless during the acute stage the signs of congestion develop in the rest of the lungs. After the pneumonia is past these general nutritive changes leave behind a delicacy of the lungs which may last for months and show itself in a tendency to bronchitis on slight provocation. If this were recognised and dealt with appropriately the patient might be spared much distress and saved the risk of becoming a chronic bronchitic.

Besides bronchitis, there is also emphysema to be considered. Vicarious or complementary emphysema is, of course, common enough during the acute stage of pneumonia, but this is only transient and rapidly passes away. True or ordinary emphysema may be observed, and not rarely if it be looked for, to develop after pneumonia in a patient who before the attack presented no signs of it, so that I cannot doubt that the nutritive disturbances produced during the acute attack may, and not infrequently do, initiate those atrophic changes which end in the wasting and atrophy of the alveolar walls characteristic of ordinary emphysema.

Much might be done to obviate these risks if it were known and remembered how profoundly the general nutrition of the lungs is affected in any severe case of pneumonia, and that the delicacy thus engendered may lead to recurrent bronchitis and to permanent emphysema.

It should therefore be the rule of practice to take great care of a convalescent from pneumonia for at least 12 months. This rule is often disregarded and with disastrous results, for the reason that the resolution of the local lesion is so rapid and complete that the possibility of any widespread changes such as those to which I have referred is not recognised or suspected.

Wimpole-street, W.

AORTIC REGURGITATION.[1]

BY WALTER BROADBENT, M.A., M.D. CANTAB., M.R.C.P. LOND.,
ASSISTANT PHYSICIAN TO THE SUSSEX COUNTY HOSPITAL; PHYSICIAN TO THE ROYAL ALEXANDRA HOSPITAL FOR CHILDREN.

DILATATION and hypertrophy of the heart are carried to a greater extent in aortic regurgitation than in any valvular disease. Heaving pulsation of the lower chest is very evident until the heart is failing seriously. Often there is systolic retraction of the intercostal spaces near the sternum, due to atmospheric pressure and not to adherent pericardium. Also systolic retraction of the lower ribs at the back on the left, and even the right, may be caused by the hypertrophied heart pulling on the diaphragm, which is attached to these ribs. This used to be considered a sign of adherent pericardium, and is so if the heart is not much hypertrophied, but a large heart can pull on the diaphragm sufficiently to cause it without the pericardium being adherent.

At the apex the first sound is prolonged and not as loud as normal. A systolic murmur is often present, which may be conducted from the aortic orifice, or may be that of mitral regurgitation. If the murmur, traced from the aortic cartilage across the chest to the apex, becomes progressively less loud, one may conclude that it is conducted, but if it becomes less loud about half-way and increases towards the apex, it is mitral. Also when it is mitral, the first sound is diminished and may be absent at the apex, and the murmur is conducted outside the apex beat. A second sound is heard and usually a soft diastolic murmur.

Not infrequently a presystolic thrill can be felt and a loud presystolic murmur heard at the apex. Mitral stenosis would be incompatible with life, if there was much aortic regurgitation, blood would never get through a stenosed mitral orifice against the pressure in the left ventricle, and where the pulse is large and collapsing no mitral stenosis is found post mortem. The probable explanation is that the regurgitant stream from the aorta strikes against the anterior flap of the mitral valve and causes vibrations in it, or it may be that the valve is prevented by the aortic regurgitant stream from falling back, and so lies across the mitral orifice to a certain extent. This is sometimes called Flint's murmur, having been first described by Austin Flint in 1862. When there are aortic stenosis and regurgitation, in which the stenosis

[1] Portion of a paper read before the Brighton and Sussex Medico-Chirurgical Society.

predominates, mitral stenosis is not infrequent, but even then a presystolic murmur is not always heard. I remember one case where post mortem there were mitral and tricuspid stenosis as well as aortic stenosis, with some regurgitation, but no presystolic murmur was heard during the two months she was in hospital, but the first sound at the apex was short and loud.

Thayer, at the Johns Hopkins Hospital in 1901, found in 74 cases of aortic regurgitation followed by post-mortem examination 45 had had a presystolic murmur during life, but in only 12 was there any mitral stenosis, and in these the pulse was noted as not large, and in most of them there was a short loud snapping first sound at the apex. But of the 29 with no presystolic murmur 4 had mitral stenosis. He illustrates the difficulty of diagnosis by a percentage table of physical signs, and concludes that the size of the pulse is the most reliable guide.

	Pure mitral stenosis, 17 cases.	Mitral stenosis and aortic regurgitation, 14 cases.	Aortic regurgitation and Flint's murmur, 33 cases.
	Per cent.	Per cent.	Per cent.
Small pulse	82·3	28·5	0
Presystolic thrill ...	64·7	50·0	42·0
Tapping systolic shock	76·4	50·0	15·1
Snapping first sound	64·7	78·5	30·3

The systolic blood pressure, as measured by the sphygmomanometer, is very high in aortic regurgitation, but the diastolic is low. The difference between the systolic and diastolic pressures is a fair measure of the amount of regurgitation, the greater the difference the greater the regurgitation.

The pulse is sometimes bisferiens; a distinct double beat may be felt when moderate pressure is put on the artery. In a tracing there is a double top to the wave, the second being higher than the first. This is often only present on the left side, while the right pulse is normal, and it is, I believe, invariably more marked on the left side. Some aortic stenosis or high peripheral resistance has been present in all the fully described cases. Roy and Adami, in their investigations on the hearts of dogs in 1890, found that a rise of peripheral resistance made the intra-ventricular pressure curve anacrotic, as if the contraction were reinforced by a renewed effort. It is probable, therefore, that in cases of aortic regurgitation with stenosis supervening the intra-ventricular pressure curve would be anacrotic, and, if the valves are much destroyed, the pressure curve in the aorta would correspond closely to the intra-ventricular, and an anacrotic or bisferiens pulse might be conveyed to the arteries. The explanation of the bisferiens pulse being more marked in the left carotid and radial is that the natural direction of the main blood stream is towards the left carotid (a fact often quoted as the cause of the greater frequency of cerebral embolism on the left side), and so the pressure curve of the aorta is more readily conveyed.

To estimate the amount of regurgitation the pulse is the most important factor. A large artery and very collapsing pulse, when the wrist is held above the level of the shoulder, indicate much regurgitation, and *vice versâ*. But if the pulse is irregular proper compensation has not been attained, and there is more regurgitation than the pulse shows. In the last stages there may also not be sufficient force in the heart to produce a collapsing pulse at all. In atheromatous regurgitation the artery is large and tortuous from long-standing high tension, but there is not the same collapse of the pulse; sphygmographic tracings show a more sustained wave, and the amount of regurgitation is never very great.

The degree of dilatation and hypertrophy of the left ventricle is a help in estimating the extent of the regurgitation, but, if prolonged rest has not been insisted upon after the onset or after illnesses attended with fever, the dilatation will be in excess of what was necessary for compensation.

If the heart is much hypertrophied but the pulse is not correspondingly collapsing, either aortic stenosis predominates or the hypertrophy is the result of old high tension or kidney disease. If due to aortic stenosis there will be no second sound heard in the carotids, the pulse wave will be long and slow and the artery soft walled; but if due to old high tension the second sound in the carotids will be loud and the artery thick walled and probably tortuous.

Prognosis.

"When, with a diastolic murmur, the aortic second sound is still audible in the neck, the pulse exhibits the collapsing character only in a moderate degree and the dilatation and hypertrophy of the heart are inconsiderable, the patient may be expected to enjoy life and do hard work for many years, provided the lesion is due to acute endocarditis," and not to syphilis or atheroma. In practically all such favourable cases the onset is before the age of 20.

Atheromatous cases arise so late in life that very little extra hypertrophy can be expected, and, unless specially guarded against, the high peripheral resistance, which was the main cause of the regurgitation, continues to act, and the atheroma progresses; the prognosis is therefore bad though the amount of regurgitation is not great.

When aortic stenosis supervenes in a case with considerable regurgitation, it improves the prognosis by lessening the amount of regurgitation. Dangerous symptoms will often disappear and the patient's life be much prolonged. When a valve ruptures, the strain put suddenly on the heart is too great, dilatation of the left ventricle is extreme, and hypertrophy never properly compensates. If there is dropsy the first thing to determine is whether it is due to mitral disease mainly, or to dilatation of the mitral orifice by the extent of the aortic regurgitation. If due to mitral disease the pulse will be irregular and not very large nor collapsing, and the second sound will be heard in the neck; the prognosis will be then rather better than when due to giving way of the mitral valve through the amount of aortic regurgitation.

Treatment.

Far the most important time for treatment is at the onset in rheumatic cases. Children with growing pains or a pain in any joint should always have their hearts examined; the onset of endocarditis is so insidious. During the acute stage salicin or aspirin given in full doses appears to be less depressing to the heart than salicylates. Small repeated blisters to the first, second, or third spaces on the left side, as recommended by Caton, are distinctly useful, as also is potassium iodide after the temperature has fallen. When the aortic valve is affected, rest in bed is essential, not only until the temperature comes down to normal, but for at least six weeks after, and then a very gradual return to being up all day, and no exercise or work should be allowed for six months or more. If so treated the murmur and all signs of the regurgitation will in rare instances completely disappear; I have seen this happen in a case recently. But when the regurgitation persists, as it usually does, compensation i attained with as little dilatation as possible, and so more reserve is left for future contingencies.

In syphilitic cases potassium iodide tends to prevent the increase of the lesion, and also does good by lowering the vascular tension. Atheromatous cases need tonics combined with measures to reduce the peripheral resistance.

In all cases tonics such as strychnine, arsenic, formates, ammonia, and bark are most useful, and belladonna if there is palpitation. The bowels should be kept regular, but no violent purgatives must be given because of the danger of fatal syncope. Flatulent distension of the stomach should be watched for and treated, since it may bring on angina pectoris earlier than need be. Whenever there are symptoms of cardiac distress, rest in bed for two weeks to a month should be ordered, and the getting up after this must be gradual. The patient ought also to be warned of the extreme danger of any sudden exertion. Hypodermic morphia is the best hypnotic if the nights are bad.

If venous congestion or dropsy come on, digitalis combined with vascular dilators and diuretics is useful until these symptoms have been got rid of. Then, if the mitral and tricuspid breakdown was due to the amount of the aortic regurgitation, the digitalis must be at once stopped, since it is a dangerous drug to use in aortic regurgitation. Bleeding is never safe, but a few leeches may sometimes help the digitalis when there is venous congestion. For angina pectoris the vascular dilators, spiritus ætheris nitrosi, trinitrin, or erythrol tetranitrate are needed regularly, and capsules of amyl nitrite should be carried in case of an attack coming on. Arsenic or phosphorus and tonics improve the condition of the heart muscle and lessen the tendency to attacks.

Brighton.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON TWO CASES OF CEREBRAL HÆMORRHAGE ASSOCIATED WITH ANÆSTHESIA.

BY H. P. FAIRLIE, M.B., CH.B. GLASG.,
ANÆSTHETIST TO THE GLASGOW ROYAL INFIRMARY.

CASE 1.—The patient, a man aged 23 years, a labourer, was admitted to the Glasgow Royal Infirmary on March 8th, 1910, as a result of a severe injury to his left arm, occasioned by being caught between the rollers of a machine, and resulting in the complete destruction of the skin from the shoulder to the wrist. To allow of grafting this he was anæsthetised on three occasions, on the first and last by myself, and on the second by the house surgeon. Physical examination before anæsthesia revealed nothing abnormal. On the first occasion (March 24th) anæsthesia was induced by gas and ether; after 10 minutes a change was made to chloroform, administered on Skinner's face-piece. There was no difficulty of any kind, the anæsthesia lasting 25 minutes. On the second occasion (April 1st), of which I have no detailed note, the house surgeon gave chloroform on Skinner's face-piece. After induction, during which there was some struggling, the respirations became shallow and stopped. Artificial respiration was commenced and continued for about one minute, after which natural respiration returned and remained good during the operation, five grafts being applied. On the third occasion (April 23rd) chloroform was administered on Skinner's face-piece. During the first stage there was considerable excitement, with violent struggling, followed in six minutes by unconsciousness, abolition of the corneal reflex, medium pupil, good breathing and pulse, with slight cyanosis. The patient was allowed four or five breaths of air, after which chloroform was again applied. At eight minutes the patient was turned on his right side to permit of grafts being taken from the outer side of his left thigh. His left arm hung over and slightly pressed on the chest. At this minute the breathing suddenly became interrupted and gasping, then ceased, with dilatation of the pupils, livid pallor, and almost imperceptible pulse. The patient was at once turned on his back, his head was lowered, his tongue pulled forward, and artificial respiration by Silvester's method commenced. By this time the pulse was quite imperceptible and the cardiac impulse could be neither felt nor heard. Hot-water cloths were applied to the præcordium, and 30 minims of brandy and 1/60th of a grain of strychnine were injected hypodermically, but with the exception of one or two gasping inspirations the patient gave no further indication of life. A post-mortem examination revealed the following conditions:—Heart: normal. Lungs: some engorgement at base; no œdema. Brain: fresh hæmorrhage extending over both cerebral hemispheres downwards towards the base, more extensive on the left side. There was no hypertrophy of the lymphatic tissue.

CASE 2.—The patient, a woman aged 61 years, was admitted to the Glasgow Royal Infirmary on May 12th, 1910, with a diagnosis of carcinoma of the cæcum. Although for some time before the admission she had been losing flesh she was still very stout. Physical examination before anæsthesia showed no abnormality, except rather feeble heart sounds, but no valvular lesion. On May 14th she was anæsthetised by Dr. A. Stewart, house surgeon, the anæsthetic chosen being chloroform administered on Skinner's mask. The first stage was quiet, but before the patient had entered the second stage preparation of the skin for the operation was commenced, causing slight straining of the abdominal muscles and holding of breath. After five minutes' administration, when about two drachms of chloroform had been given, difficulty arose. Respiration ceased, with cyanosis and weaker pulse. The usual methods of resuscitation were adopted, as in Case 1, with the exception of the injection of brandy, and after artificial respiration had been continued for about seven minutes respiration was resumed and the pulse improved in volume. An attempt was made to continue anæsthesia with ether by the open method, but this gave rise to the same alarming condition, though artificial respiration was not called for, and the patient was sent back to bed without operation. She kept well for three days, when it was noticed that there was slowness in answering questions, with delayed comprehension and slight mental dulness. Later in the day (May 17th) paralysis of the left arm developed, with slight drawing of the mouth to the right side, and unconsciousness. On the 18th, there was a slight return of consciousness, the patient being then able to answer questions, otherwise her condition remained the same. After this date there was no opportunity for further observation as the patient left the infirmary.

The above cases draw attention to the association of cerebral hæmorrhage with chloroform anæsthesia, which, judging from the absence of reference to it in the current literature on anæsthetics, seems to be of rare occurrence. Dr. F. W. Hewitt in his text-book on the subject mentions it as a concomitant of ether anæthesia, where, owing to the action of ether as a circulatory stimulant, and also to the frequent occurrence of some degree of venous stasis in the early stages of ether administration by the closed method, it is more liable to occur. In the first of the above cases, where apparently difficulty arose and death resulted from primary circulatory failure, it is difficult to explain the hæmorrhage unless by ascribing it to raised arterial tension and rupture of a vessel during the period of struggling. In the second case, on the other hand, there was no struggling, and here the origin of the difficulty seems to have been primarily respiratory, with venous engorgement, and possibly resulting rupture of a small vein.

Glasgow.

BREAKING-DOWN GUMMATA OF LIVER SIMULATING TROPICAL ABSCESS.

BY G. S. THOMPSON, M.R.C.S. ENG., L.R.C.P. LOND.

THE following case is, I think, worthy of record, exemplifying as it does the value of the rule of administering anti-syphilitic remedies in all hepatic conditions which prove intractable or irresponsive to measures already invoked.

The patient, a male, aged 25 years, had been suffering for six months with pyrexia, sweating, "chills," lassitude, malaise, and latterly cough accompanied by "anchovy sauce" expectoration. Pain was present at first in the epigastric region, and later over the lower posterior aspect of the right side of the chest. When seen the patient looked severely ill, presenting the hectic appearance. Physical examination revealed a considerable area of dulness over the region of the right side of the chest posteriorly and below, as well as unilateral impairment of movement and a few moist sounds at the base of the lung. The temperature chart was characteristic of pus absorption. History as to dysentery or typhoid fever was quite negative, but as subsequently elicited there was a history of soft chancre five years previously, for which no anti-specific treatment was given, since syphilis was not suspected or suggested.

From the above facts, notwithstanding the absence of history of dysenteric infection, there appeared to be no doubt in my mind that a liver abscess was present. The patient was accordingly sent into the Kimberley hospital, and after making several negative exploratory punctures with a needle under anæsthesia pus was finally reached, and the cavity was then drained through the post-scapular line. The wound discharged freely, but the temperature still remaining up another abscess was suspected; the latter was opened by way of the first wound. The temperature then fell, and the discharge became less and less until the dressings were merely moistened by serous exudate, and expectoration had ceased. The patient was now allowed up, but in a few days' time the temperature began to rise again—notwithstanding the fact that good drainage was permitted from the liver—and although the dressings remained clean characteristic sputum reappeared. A third abscess cavity was therefore suspected and an endeavour was made to evacuate it through the wound. The expectoration continued, however, in abundance, and the prolonged persistence (about six or eight weeks) of the discharge again through both passages began to give rather a hopeless prospect for recovery.

In order to facilitate drainage through the lung the foot of the bed was now well elevated, and at the same time iodide

of potassium was administered. The result was striking and gratifying; in three days the sputum as well as the wound discharge began markedly to lessen in amount, and in a week's time both had ceased. This happy state of affairs persisted from that time onwards. The patient, after being in hospital over three months, was discharged quite well, and is now doing his work and feels like a normal individual again. He is also undergoing a course of anti-syphilitic treatment.

The following comments I think are justified by the above. The only thing that at all militated against the diagnosis of tropical abscess was the absence of a history of dysentery or typhoid fever, whilst the negative specific history (interrogation on which point, by the way, was hardly suggested by the condition) tended to mislead. The contents of the cavities were typically those of tropical liver abscesses. Yet it would appear that the lesions were breaking-down gummata of the liver. In favour of this view are the persistence, multiplicity, fresh deposits, and the response to iodide, for I have little doubt that the exhibition of this drug determined the related rapid change. The interesting feature is the striking simulation by tertiary syphilomatous liver disease to tropical abscess, if the above deduction be correct. I suggest the necessity of keeping this point in view in unprogressive cases, and even acting upon it previous to subjecting patients to operation; and the advisability in any case at least of giving iodide of potassium a trial in all liver diseases where other means fail, or before giving up hope.

St. Mary's Hospital, London, W.

NOTES ON A CASE OF INFECTION OF THE BASE OF THE BRAIN FROM A CARIOUS TOOTH.

BY S. W. MILNER, M.R.C.S. ENG.

THE patient was a married woman, aged 36 years, and had been healthy. On April 28th, 1910, she developed a "gumboil" from a decayed tooth in the left lower jaw and had neuralgia on the left side of the head. On April 30th and May 1st she had pain in the left temple and back of the head and also in both eyes and took to her bed. On May 3rd she called in a medical man, and he was in attendance until the 11th, when she was admitted to Gravesend Hospital. On the 4th when in bed she had "violent shaking." The right ear had always been rather deaf, but it was noticed that the deafness had become worse. On the 6th there was "swelling" of the right eye. On the 8th there was some delirium and the temperature rose to 106° F. On the 9th there was "swelling" of the left eye. On the 11th she was admitted to hospital.

On arrival at hospital she was conscious but exhausted and answered questions clearly, although very deaf. It was noticed that the right ear was totally deaf. With the left ear a loud ticking watch was heard at three inches distance. The right side of the face was paralysed. There was loss of sensation in the left side of the face. Both eyes were prominent, the right the more so, and both lids were red and swollen. The right pupil was dilated. Vision in the right eye was reduced to perception of light. The patient took fluid food readily. The temperature was 104° F. and pulse 106. There was a sensation of "something going round and round" in the head. The patient had very little sleep. The pulse remained good and there was no vomiting. There was a purulent discharge from both conjunctivæ. On the following day (May 12th) she had a rigor at 11 A.M., when the temperature rose to 105·6°. This was followed by delirium and restlessness. She took milk well. She was sleepless and delirious all night and at 3 30 A.M. became very collapsed. On May 13th the morning temperature was 101·2°, pulse 82, and respiration 40. She was delirious all day and vomited twice. She slept at intervals and perspired freely. She had no sleep at night and was delirious. She vomited green fluid three times and at 7.5 A.M. was very collapsed. She did not recover and died at 8.30 A.M.

A post-mortem examination was made. On opening the skull and removing the dura mater great engorgement of the vessels was noted. The membranes on the base of the brain from the optic chiasma in front to the under surface of the cerebellum behind and spreading laterally to the under surface of each temporo-sphenoidal lobe were green and necrotic and putrefying. On stripping off this membrane and the vessels the brain substance was normal in appearance and nothing abnormal was found on slicing the various parts of the brain. The dura mater was next removed from the base of the skull and the structures passing through the various foramina were examined. The left Gasserian ganglion was necrotic, as were the nerves leaving it. The right ganglion was healthy. The pituitary body was necrotic. The body of the sphenoid and both petrous bones were partially necrosed and greatly congested on section. In neither internal ear was pus found. The circular sinus and cavernous sinuses were thrombosed. There was pus in both orbits under the fibres of the levator palpebræ superioris. On pulling on the left inferior maxillary nerve as it left the skull through the foramen ovale pus was seen coming up around the nerve, and a probe passed easily along the nerve and beneath the mucous membrane of the left cheek—this being no doubt the track of the original infection from the tooth to the brain.

Gravesend Hospital.

Medical Societies.

HARVEIAN SOCIETY OF LONDON.

Diagnosis and Treatment of Cystic Disease of the Breast.

A MEETING of this society was held on Oct. 27th, Dr. M. HANDFIELD-JONES, the President, being in the chair.

Mr. D'ARCY POWER opened a discussion on the Diagnosis and Treatment of Cystic Disease of the Breast by drawing attention to the difficulty which he had often experienced in diagnosing and treating cystic tumours of the breast. He stated that the classification of cystic disease was chaotic at the present time and offered for consideration the following scheme:—

(*A*) *Non-Inflammatory.*

(*a*) Innocent ... (1) Adenoma ... ... (i.) Ducts. (ii.) Acini.
(2) Fibroma... ... ... (i.) Pericanalicular. (ii.) Intracanalicular.

(*b*) Malignant ... (1) Carcinoma ... ... (i.) Duct papilloma. (ii.) Duct carcinoma.
(2) Sarcoma... ... ... (i.) Cystic. (ii.) Degenerating.

(*B*) *Inflammatory.*

(i.) Galactocele ... (1) Cyst single and simple.
(ii.) Mastitis ... (2) Cysts multiple.

(*C*) *Congenital*.... ... Lymphangioma.

(*D*) *Parasitic* ... ... Hydatid.

Cystic adenomata were well recognised tumours of the breast and called for little comment. Mr. Power gave short notes of two cases, and pointed out that in removing the tumour it was necessary to cut clean through the overlying breast tissue before any attempt was made to enucleate the adenoma. He thought that it was not necessary to remove every adenoma of the breast. Cystic fibroma of the breast, or Brodie's disease of the breast, occurred in an innocent form—cystic fibroma—and in a malignant form—cystic sarcoma. The innocent cystic fibroma of the breast was characterised by an overgrowth of connective tissue starting in the stroma round the ducts and acini—the pericanalicular form—or in the subepithelial tissue of the ducts themselves—the intracanalicular variety. Both tumours were associated with the formation of numerous cysts filled at first with clear serous fluid. The cysts were therefore due to obstruction of the glandular tissue, although in some cases there was microscopical evidence that the glandular epithelium had itself undergone cystic degeneration. The cyst wall in the pericanalicular form was often invaginated by the new growth of fibrous tissue until the cyst became a mere slit, and on section the tumour seemed to be solid until a probe was passed into the slits, when the invaginating growth could be turned out and the cyst demonstrated. In the intracanalicular form the cysts remained obvious and the growth sprouted into it as "a duct papilloma." Mr. Power illustrated his remarks by cases, and then went on to show that secondary changes might take place in the connective tissue of stroma of intracanalicular cystic disease. Malignant cystic disease of the breast attacked the same parts as cystic fibroma. It occurred in the forms of cystic sarcoma and duct cancer—the sarcoma corresponding with pericanalicular cystic fibroma and duct cancer being the correlative of the intracanalicular form. Cystic sarcoma was

at first a well-circumscribed swelling which grew like sarcomata in other parts of the body. The cysts were constituent parts of the growth and were not degeneration products. A case was given in illustration. Cystic sarcomata of the breast were to be distinguished from sarcomata in which the cysts were produced by degenerative changes. Duct carcinoma was always cystic, the cysts being either simple or multilocular. Mr. Power gave an example of the multilocular cystic form which had been recently under his care. Cystic disease of the breast connected more or less directly with inflammatory changes were of greater diagnostic interest and presented greater difficulties in treatment than the non-inflammatory forms which had just been considered. Foremost amongst these, and in many ways the simplest, was galactocele. It was generally the result of inflammatory changes occurring in the breasts of married women. Mr. Power gave the details of a case where it had followed an injury in a virgin breast. Chronic mastitis lead to the formation of a most interesting group of cystic tumours. The cyst in these cases might be single and simple, or the whole gland might present the appearance of a sponge when it was examined after removal. The single and simple cyst was sometimes placed so deeply or had so thick a wall that it was mistaken for a solid tumour, and every pathological museum contained examples of such cysts where the entire breast had been removed under the misapprehension of the existence of cancer. It was a cardinal rule, therefore, to incise every breast before amputation was performed, and incision was always preferable to puncture, because mere puncture might lead to an intracystic growth being overlooked. The most difficult cases to treat were those in which there were many small cysts the results of chronic lobular mastitis. Mr. Power read the notes of such which had lasted several years affecting first one breast and then the other. He concluded his paper with a brief reference to congenital cysts of the breast which he considered to be of the nature of lymphangioma.

Mr. E. H. SHAW agreed with Mr. Power as to the unsatisfactory nature of the classification of breast cysts, but did not think Mr. Power's proposed classification was quite suitable. He had tried to work out a simple scheme which would include all the cysts and at the same time retain most of the names at present used. It was as follows:—

I. Inflammatory.

A. Abscess ... ... (*a*) Acute. (*b*) Chronic (as tubercle).

B. Retention ... ... (*a*) Galactocele. (*b*) Serous, or simple.

II. Non-inflammatory.

A. With intra-cystic growths ... ... (*a*) Adenoma. (*b*) Papilloma (or so-called duct papilloma). (*c*) Carcinoma. (*d*) Fibroma (intra-cystic fibro-adenoma). (*e*) Myxo-fibroma. (*f*) Sarcoma (intra-cystic adeno-sarcoma).

B. "Breaking down" of new growths (*a*) Carcinoma. (*b*) Sarcoma.

C. Parasitic ... ... (*a*) Hydatid.

Mr. Shaw showed a series of photographic lantern slides illustrating the naked-eye and microscopic appearances of most of the above cysts. He had time only to enter into a detailed description of the serous or simple cysts, and expressed his belief that all these cysts arose in connexion with chronic mastitis; they were retention cysts. He demonstrated the gradual thinning of the lining epithelium and also the thickening and proliferation of cells which occurred in some of the breast acini. He did not believe there was such a condition as a lymphatic cyst of the mammary gland. He was strongly against puncture of the cysts for diagnosis and treatment, and showed specimens of carcinoma in the walls of such cysts. He pointed out that the so-called "duct" papillomata were also found in dilated acini, and preferred the term "intra-cystic papilloma." In many cases the tumours were really solid adenomata projecting into a cyst, and should be termed intra-cystic adenoma.

Mr. W. G. SPENCER said he first wished to thank the Harveian Society for the honour it had done him by an invitation as a visitor to take part in this discussion, and then offered his hearty congratulations to Mr. Power upon his excellent description of the pathological anatomy of the cystic tumours of the breast, so well supplemented by Mr. Shaw's demonstration of the histological appearances. He felt unable to enter upon questions of classification, for so little was known as to the causes of pathological development of these growths. It was so difficult to attach any precise meaning to the term "inflammatory" except in the condition where one could connect the cause with some micro-organism. When so-called inflammatory conditions were noted as preceding cancer there must be some peculiarity as distinguished from the inflammatory effects produced by known micro-organisms. Moreover, the word "serous" was applied to the contents of many sorts of cysts, whereas in only a few could the contents correspond to physiological blood serum. Thirdly, Mr. Spencer recalled that Kanthack termed papillomas connective-tissue tumours, viewing the stroma as the main feature of the growth. That view had been regarded as heretical, yet many of the intra-cystic growths referred to as papillomatous appeared to be chiefly composed of a connective tissue stroma. One could hardly limit one's view to these cystic tumours which had proved non-malignant, but must consider alongside them the number of cases of carcinoma which had at first been regarded clinically as benign. When cut out early enough for some breast tissue to persist outside the cancer there were changes to be found in that breast tissue like those present in benign tumours. Turning to the practical side of the matter, a puncture of a cyst, followed or not by injection, was often adopted, and the patients were said to have been relieved. But in how many instances were they cured? Were they seen later with advanced disease? Mr. Spencer did not feel sure that the practice was really justified by results; the cases should be very carefully watched after the puncturing. Mr. Power had referred to recurring forms of chronic mastitis. How long should they advise a woman to put up with it? One could not state with certainty whether she would be cured by waiting. Even although there were no signs of advancing disease at the moment, they could not exclude the possibility that new growth might ultimately ensue. Therefore he did not think that they should treat recurring mastitis for longer than a few months, after which time excision should be advised. In the case of circumscribed cystic tumours he was sure that it was wise to remove also a zone of the apparently healthy breast tissue around. Hence the words "enucleation" or "shelling out" did not express all that should be done. Even although the main tumour be circumscribed, if there was some definite change from the normal in the breast tissue around it, as seen with the naked eye, he would advise excision of the whole breast. The nipple could be left as Mr. Power had mentioned.

Mr. T. CRISP ENGLISH said that mammary cysts were almost always secondary to mastitis, or some other local disease, and that recognition of the primary condition was of essential importance; an exploratory incision should therefore be made in all doubtful cases. In cystic mastitis it was usually possible to excise the cyst-bearing area through a transverse incision below the nipple about two inches in length; this procedure left comparatively little deformity, and the results were excellent. He did not believe that the ordinary form of cystic mastitis involved any special predisposition to malignant disease.

Mr. G. E GASK said that he thought a classification of cystic tumours was badly wanted, and that the reason of the present confusion of terms lay in the misunderstanding concerning the histology of the intra-cystic growths. These were nearly always due to protrusion of the stroma or interstitial tissue into the cavity of the cyst and not epithelial growth, and this stroma might be fibrous tissue or fibrous tissue showing myxomatous or sarcomatous degeneration, hence the confusion as to the meaning of "Brodie's disease." As regards mastitis with cyst formation Mr. Gask thought that whenever the condition called for surgical treatment the whole breast should be removed, because, in his experience, a partial excision did not free the patient from neuralgic pain, and often further operation was required, and, moreover, certain cases were followed by the appearance of a carcinoma.

Mr. W. H. CLAYTON GREENE said he should like to add his thanks to Mr. Power for his valuable paper. He thought the description of the cyst with the different forms of intra-cystic growth was a very clear one. He should, however, like to ask Mr. Power which he considered the primary change, the cyst or the growth. He asked Dr.

Spilsbury about it that afternoon, who told him that he thought the connective tissue growth was the initial stage, a growth which led to a retention cyst in the acinus. Also he would ask if Mr. Power would allow the possibility of these neoplasms having an inflammatory origin. Mr. Clayton-Greene had often been struck with the histological similarity between the adenomata and fibromata and interstitial mastitis acknowledged to be of inflammatory origin, only in the former a small area of the breast was attacked, in the latter the whole organ. With regard to the removal of these simple tumours Mr. Clayton-Greene would agree with Mr. Spencer that it was always wise to cut them out clearly with a little of the surrounding tissue. If enucleated they sometimes recurred, and he had seen instances where they had turned out to be spindle-celled sarcomata, the "recurrent fibroid of Paget." It was often very difficult to tell from a section whether a sarcomatous change was or was not occurring in the stroma. With regard to general cystic disease and interstitial mastitis Mr. Clayton-Greene would touch on one point that had been raised—their relation to malignant disease. Some of the speakers regarded the condition as precancerous, a view which was held by the American surgeons, who associated the development of the adeno-carcinoma with this diseased condition of the mammæ. Reclus, on the other hand, denied the relationship, and treated the cysts by puncture and injection. It seemed as if they had two classes of case—one with large cysts, two or three, as a rule, which were rarely associated with a malignant change, and the other where the whole breast was riddled with cysts, and was shrunken and atrophied. The former he had not regarded as dangerous, but from what he had heard and seen that night he was inclined to alter his opinion. The latter, he thought, should be dealt with surgically by the method described by Mr. Power, by turning up a flap and dissecting away the breast tissue from the skin and nipple, which were then replaced. Both breasts usually suffered, though not necessarily at the same time. Mr. Clayton-Greene would like to ask Mr. Power if he had any experience of the cancer cysts described by the American surgeons—cysts with a thick wall containing blood, apparently a very malignant type judging by the reported cases. He had had one case himself this year. He entirely agreed with the need for exploratory incision in a doubtful case. With ordinary care there should be no risk of cancer cell infection, the whole mass could be cut out clean and then submitted to careful examination. He was often doubtful of the nature of a breast tumour, and he should reproach himself bitterly if he performed the modern operation for the removal of a malignant breast for a condition which did not require it. It was a very big operation—one of the largest in surgery. He was delighted to hear that the serous cyst did not exist. Its existence had been taken for granted by text-book after text-book, and it appeared to be merely a name given to a cyst from the character of the fluid, and owing to the fact that the epithelial lining had been destroyed in the preparation of the specimen. He had long looked for an example. He should do so no more. The serous cyst was dead; might it be decently interred under this mass of pathological evidence.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY.

The Significance of Vertigo.

A MEETING of this society took place at the Great Northern Central Hospital on Oct. 13th. In the absence of the President, Dr. T. J. Horder, the chair was taken by Dr. C. M. HINDS HOWELL.

The session was opened with an address by Dr. J. S. RISIEN RUSSELL on the Significance of Vertigo. He said that in the choice of a subject for the address he had been largely influenced by two considerations: one of these was that he supposed that his audience would be chiefly composed of men actively engaged in practice, who would be more likely to welcome something practical that might be of some immediate use to them in their work, rather than listen to a discourse which, although possibly brimming over with interest from the scientific standpoint, could not be said to offer anything that could be of practical value now, no matter what the possibilities for the future might be. The other reason that had guided him in the choice of vertigo was that he had seen so many patients suffering in this way in whom he believed that a wrong construction had been put on the case merely because the blood pressure happened to be high. Enough account had not been taken of the fact that such blood-vessels as lent themselves to palpation did not reveal abnormal thickening, that the retinal vessels were equally free from signs of sclerosis, as viewed by the aid of the opthalmoscope; that analysis of the urine failed to throw suspicion on the kidneys, or that the individual was of highly nervous temperament and not a little perturbed by the alarming sensations occasioned by the vertiginous seizures. An unduly hasty diagnosis of impending apoplexy was apt to lead to the patient being terrorised, purged, and dieted into a condition of nervous prostration that ultimately made him a fit subject for a "rest cure." He was far from wishing to belittle the importance either of vertigo or high blood pressure as evidence of arterial sclerosis and as warnings of impending calamities in the way of gross vascular lesions of the brain, but he felt sure that many people were doomed to a fate of the kind on insufficient data. A case was quoted, in illustration, in which the patient had received the grave verdict of impending apoplexy, and in which he had been treated into a condition of nervous prostration, when in reality the vertigo in his case was aural in origin. Some of the cases of "apoplectiform" labyrinthine vertigo were very alarming in their manifestations, and it was not surprising that they occasioned fear of more serious mischief. In this connexion he quoted a case of the kind in which cerebellar hæmorrhage had been suspected, but in which he was confident of his opinion to the contrary, which was confirmed by the subsequent progress of the case. This afforded him the opportunity of alluding to the fact that although vascular lesions of the cerebrum were so common they were comparatively rare in the cerebellum, a reason that should cause some hesitation before too confident a diagnosis of cerebellar hæmorrhage was made.

In his experience aural vertigo and neurasthenia were the two conditions, one or other, or both of which had obtained in cases in which arterio-sclerosis of the cerebral vessels with threatened apoplexy had been the unjustified diagnosis. Although the acute apoplectiform variety was rare, it was, of course, common to meet with the chronic slowly progressive forms of aural vertigo. The diagnosis was often made the more difficult owing to the fact that a certain amount of fulness in the head might be complained of, especially on the affected side, and all of the symptoms were influenced by changes of the position of the head. Moreover, evidences of arterio-sclerosis might be forthcoming owing to the fact that the aural condition was most common in persons who had reached the degenerative period of life in which arterial sclerosis was also most likely to be met with. It not uncommonly happened that a varying amount of neurasthenia became added, which was responsible for aggravation of all the symptoms. Neurasthenia alone might similarly occasion vertigo and a variety of cephalic sensations readily mistaken for those that result from arterio-sclerosis of the cerebral vessels, from which condition diagnosis might not be easy when the person affected had reached the degenerative period of life, and in view of the further fact that, as in arterio-sclerosis, posture might have a very notable effect on the sensations. The importance of vertigo as a symptom in epilepsy was next dealt with, and emphasis was laid on the difficulties that might arise in attempts to decide between epilepsy and aural vertigo, notably in some of those cases in which the patient was hurled to the ground with such suddenness in aural vertigo as to make him temporarily dazed, and thus made them uncertain in regard to one of the signs on which they placed most reliance in the differential diagnosis—viz., loss of consciousness in epilepsy as contrasted with its preservation in aural vertigo.

In dealing with cerebellar disease he showed how difficulties might arise where the diagnosis of abscess of the cerebellum was under discussion, owing to the similarity in the symptoms that might be manifest as a consequence of aural suppuration and its immediate consequences, short of suppuration in the cerebellum. The clinical phenomena on which a diagnosis must be based, led him to refer to the experimental researches that had supplied evidence of many of the signs that should be looked for when they were in search for cerebellar disease. The singular absence of many of these signs in recorded cases of cerebellar abscess was commented on, and while allowing for the possibilities of

compensation as revealed by the results of experimental ablation and of congenital defects of the organ, he could not help attributing some of the paucity of signs in these cases to a want of special knowledge on the part of the surgeon under whose care they most commonly came.

In discussing tumours of the cerebellum in relation to vertigo, he not only dealt with the physical signs that would justify a diagnosis of this kind, but also took the opportunity of drawing attention to the work of two of his colleagues (Grainger Stewart and Gordon Holmes) that had done so much in assisting them to decide whether the symptoms were due to an extra- or intra-cerebellar tumour. The number of cases that had come under his observation in which cerebellar tumour and disseminated sclerosis had been mistaken for each other compelled him to contrast the clinical pictures of these two affections, and in so doing he could not too strongly emphasise in support of tumour the importance of severe paroxysmal headache, vomiting, optic neuritis with choked disc, as contrasted with retro-bulbar neuritis, the absence of evidence of affection of the pyramidal tracts, objective defect of sensibility, and sphincter affection, all of which formed such important positives in disseminated sclerosis. In illustration of the confusion that might arise in diagnosis, a case in point was quoted where disseminated sclerosis had been suspected and in which an extracerebellar tumour was in reality responsible for the symptoms, a diagnosis that was confirmed by operation. By the aid of a lantern demonstration he was able to show how it happened that disseminated sclerosis might be responsible for the most intense vertigo as well as ataxy, owing to the distribution of the lesions; whereas affections like subacute combined degeneration of the cord, tabes, and Friedreich's ataxy, all of them liable to be confounded from the clinical standpoint with disseminated sclerosis, though responsible for ataxy, did not number vertigo amongst their symptoms. In dealing with conditions outside the nervous system responsible for vertigo he referred to a case of aortic regurgitation, in which headache and vomiting were supposed to be of gastric origin, but impairment of hearing in one ear, inability to move the head, or to turn the eyes much less the head to one side, associated, further, with pronounced nystagmus, greatly intensified by all such attempts at movement, left no room for doubt that the cause of the vertigo was central, if he might be permitted to include the labyrinth in this term. The case afforded an illustration of how impossible it might be to arrive at a positive diagnosis of the pathological lesion no matter how certain they might be of its localisation, for although tumour of the cerebellum was the diagnosis that had been arrived at by one distinguished authority who had seen the case, he was unable to reconcile this diagnosis with the facts. Headache had never been a notable symptom, and certainly nothing like that to be expected in tumour; there had never been the slightest suspicion of optic neuritis, although the case had continued for a long time; apart from the impairment of hearing and the nystagmus none of the cranial nerves were affected; and, what was even more than ever significant, the symptoms and manifestations, including tremor of the hand, had varied in a way that should suggest disseminated sclerosis rather than tumour. As against the latter diagnosis, however, were the age of the patient, well beyond that at which disseminated sclerosis was expected to begin, the complete absence of any evidence of affection of the pyramidal tracts, the absence of subjective or objective sensory defects in the limbs, and the absence of any disturbance in the action of the sphincter of the bladder.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.—Epithelioma of the Tongue.—Recurrent Enlargement of the Salivary Glands.—Fungus Affections of the Finger Nails.

THE first ordinary meeting of the ninetieth session of this society was held on Nov. 2nd, Dr. BYROM BRAMWELL, the President, being in the chair. The following were elected for the ensuing session: President, Dr. Byrom Bramwell; vice-presidents, Dr. W. Allan Jamieson, Mr. J. M. Cotterill, and Mr. C. W. Cathcart; councillors, Dr. James Ritchie, Dr. J. S. Fowler, Dr. John Cumming, Dr T. J. Thyne, Dr. Edwin Bramwell, Dr. R. J. Johnston, Mr. David Wallace, and Mr. J. W. Struthers; treasurer, Mr. J. W. Dowden; secretaries, Dr. Francis D. Boyd and Mr. Alexander Miles; and editor of Transactions, Dr. D. Chalmers Watson.

Dr. ALEXANDER BRUCE and Mr. J. M. COTTERILL exhibited a girl, aged about 10 years, with Acquired Hydrocephalus, cured by opening the foramen of Magendie. The girl had had acute post-basal meningitis in August, 1908, followed by recurrent severe headaches, vomiting, gradual impairment of sight, and optic neuritis. The left abdominal reflexes became abolished. There were recurring losses of control of the bowels and bladder, then extreme weakness, first of the left, then of the right leg. The stuporose condition increased, with complete blindness and separation of the sutures through distension of the brain ventricles. Mr. Cotterill at first punctured the lateral ventricles through the right coronal suture and drew off from four to five ounces of fluid, but without benefit. Then a large part of the occipital bone was removed and the foramen of Magendie, which had been closed by fibrous tissue, was reopened. The result was gradual, and practically complete recovery of motor power, sight, intelligence, and control of reflexes ensued.

Mr. ALEXANDER MILES showed a man, aged 60 years, after removal of the Gasserian Ganglion for Trigeminal Neuralgia. At the ages of 16 and 50 years he had suffered from similar attacks. The one for which he was operated on had lasted five years but was gradually getting worse, and for two years he had been unable to work. He presented a typical picture of tic douloureux. Besides the usual there were many extra points of extreme tenderness. The operation was done on June 17th, 1910, and the Gasserian ganglion with the second and third divisions of the trigeminal nerve was removed by a modified Hartley-Krause operation. The relief of pain was immediate and lasting.

Dr. FRANCIS D. BOYD exhibited a woman after Cerebro-Spinal Meningitis possibly of tuberculous origin. During the meningitis the patient lay comatose and squinting, with head retracted, vomiting, and early optic neuritis. On spinal puncture the fluid was found to be purulent. Von Pirquet's reaction was positive; no micro-organisms were found in the cerebro-spinal fluid. Treatment consisted in repeated lumbar puncture with 1 per cent. collargol injections into the cerebro-spinal canal, and the patient had made an excellent recovery.

Dr. BYROM BRAMWELL showed a case for diagnosis. It was that of a man aged 20 years, a painter, with no history of plumbism; the family history was good. The disease had gradually progressed during the past year. Both legs were now very weak, as also was the left arm; the small muscles of the feet, hands, forearms, deltoids, &c., were atrophied. The pectoral muscles, latissimus dorsi, and left elbow were contracted; the deep reflexes were markedly exaggerated; double Babinski's sign was present; and pes cavus with blueness of the hands and feet were evident. There were no fibrillary twitchings or affection of the bladder or rectum. Slight nystagmus to the right was noted, but no reaction of degeneration. The case was like one of lateral sclerosis or the peroneal type of progressive muscular atrophy.

Dr. HARRY RAINY showed for Dr. G. A. GIBSON a case of Bulbar Paralysis which had come on within a few months in a man aged 57 years. In his youth he had served in the army and had afterwards been a labourer. He acquired lues when in the army and a few months ago began to have trouble in speech and swallowing. At present he has atrophy and fibrillation of the tongue, with feebleness of the lips and tendency of fluids to escape through the nose. His speech is very imperfect, both articulation and phonation being impaired. The anterior nuclei seem to be intact. The case is one of chronic polio-encephalitis inferior, with extension downwards below the ordinary seats.

Professor F. M. CAIRD read a paper on Epithelioma of the Tongue, a Review of 60 Hospital Cases. He said that carcinoma of the larynx, so long as it was contained within the limits of its cartilaginous box, and carcinoma of the sigmoid flexure enveloped by a protecting investment of peritoneum, resembled each other from an operative point of view in so far as a relatively favourable prognosis might be given in regard to the ultimate result. On the other hand, the final issue after surgical interventions which were concerned with carcinoma of the tongue and of the rectum was more uncertain, and recurrence was very liable to take place. This return was specially favoured by the relation of the muscular planes involved, the anatomical distribution of the

lymphatics, and by the lack of a defensive environment. The disease generally began as a local induration or a hard elevated area on the external border of the tongue; the covering epithelium gave way, an ulcer formed, and a most characteristic neuralgic pain referred to the ear and temporal region distressed the patient. Enlargement of the lymphatic glands of the neck ensued. If the trouble were situated near the root of the tongue or if it spread to the floor of the mouth the greater was the inconvenience felt by the patient in swallowing, masticating, or speaking. There might be a troublesome flow of saliva and the breath acquired an offensive odour. The greater the fixation of the tongue the greater was the difficulty in protruding the tongue. Antecedent irritation had long been recognised as at least predisposing to the development of carcinoma. Of the 60 cases no less than 38 gave a definite history of some local irritation; thus 27 ascribed the disease to ragged teeth; 18 had already had the offending teeth extracted and in some instances had derived a temporary amelioration of pain; and 7 came with ragged teeth *in situ*. Three blamed a badly fitting toothplate and 2 were convinced that the ulcer arose where the end of their pipe rested. Three had made a rather prolonged use of caustics for what had been apparently simple conditions and 1 had scalded her mouth. Tobacco had been branded as a possible factor. Of the 54 male cases not one was a non-smoker. Twenty used a pipe in moderation and 11 to excess. In regard to alcohol 3 were abstainers, 8 drank in moderation, and 14 confessed to excess. Syphilis accounted for none of the manifestations and only 4 males acknowledged infection. Leucoplakia was only noted three times in the tongue or cheek. Nineteen patients gave no history of antecedent irritation; 2 were practically edentulous. A hereditary history of carcinoma was elicited from 5 patients. A consideration of the above tended to confirm the view that a relationship obtained between antecedent irritation and malignant disease, and the plea for greater attention to the teeth in later years was urged. Diagnosis rarely presented any difficulty, and if doubt existed it was readily solved by a microscopical examination (which, indeed, should be employed in every case). Only in 2 female cases did such an examination prove negative, and in one of these cases the patient died five months later from fungating cervical glands, and in the other six months later the lingual epithelioma was too advanced to allow of further operation. The only treatment which held out any prospect of cure was that of the knife. There was no other treatment. The so-called radical measures generally constituted a two-stage operation. They were greatly indebted to Mr. Butlin, who advocated a systematic attack on the adjacent lymphatic areas, and also brought their operative procedures into line with those practised in other parts of the body. The first stage consisted in removal of one-half of the entire tongue after the manner of Whitehead or of Syme. The second, following in about 10 days, was Butlin's extensive dissection of the side of the neck affected from the angle of the jaw to the sterno-clavicular articulation. This required that the entire sheet of connective tissue exposed, including the platysma, lymphatics, submaxillary and portion of the parotid salivary glands, and even the internal jugular vein itself, if need be, should be cleared away. Such extensive operations were associated with a remarkably low mortality, so low, indeed, that despite their uncertainty as to the ultimate result they were justified in urging operation. The chances of cure were not, indeed, as good as those which followed after pylorectomy for gastric carcinoma, but the risk incurred was not nearly so great. This relative freedom from risk was largely due to the free drainage and vascularity of the parts operated on. Local recurrence in the tongue was a rare after event, the patient's life was at least prolonged, and he was at least spared the misery and suffering which a fungating and loathsome mass of disease in the mouth entailed. The local recurrence in the glands of the neck was a less trying termination to life. Partial operations, in which the primary lingual disease was alone removed while the secondary glandular implication was left untouched, might be perfectly justified and indeed welcomed. For several years he had been led to perform the first stage under local anæsthesia, and with great advantage. After infiltration of the tip of the tongue with ½ per cent. solution of cocaine and adrenalin, two stout silk ligatures were carried through the tongue on each side of the middle line, half an inch from the tip, and the tongue pulled forward and further infiltration proceeded with. By this method anatomical details and vessels were clearly revealed and no gag was required, the patient being able to assist the surgeon by rinsing out the mouth. If it were necessary to divide the jaw at the symphysis, as in Syme's operation, the anæsthetic solution might be injected into the periosteum. By this mode of operation such general control was exercised that the adjuvant laryngotomy so strongly recommended might be discarded. The ease with which the patient speaks and feeds immediately after the operation was as striking as the slight discomfort which was experienced during the operation. The only disadvantage was an oozing of blood which made it necessary to secure all bleeding points. Iodoform and boric powder were applied to the raw surfaces. Should the disease have extended to the alveolar margin the whole depth of the jaw is not removed, but the hard sclerosed lower border was left, so preserving an intact mandibular arch, and in no case had he observed any recurrence in this bar of bone. The second stage required general anæsthesia, and if the oral cavity was opened into, sepsis of the upper part of the incision resulted, and so free drainage was essential. He generally removed the submaxillary salivary gland, the associated facial artery, vein, and lymphatics *en bloc*. If this salivary gland were spared, it underwent cirrhotic change which simulated a return of the disease. The average age of the patient was 49 years; the extremes were 23 and 73. Twelve cases were inoperable. There were seven fatal cases, chiefly from pneumonia, and all were very severe operations involving the removal of the entire tongue, tonsils, pharyngeal walls or adjacent areas of the entire lower jaw. Only 16 patients at present survive; the periods since operation vary from 20 months to 8 years. Such poor results were apt to make one despondent as far as the prospect of a radical cure was concerned, but better results might be obtained were a more radical form of operation employed. The results in private patients were slightly better than those now quoted.—Mr. C. W. CATHCART said that Professor Caird's results would compare very favourably with those of other surgeons. There were great varieties in the malignancy of carcinoma, and the removal of glands was a comparatively recent procedure. He thought that a preliminary laryngotomy was of great advantage, as it made the operation easier and safer.—Professor ALEXIS THOMSON said that Professor Caird's results were better than most surgeons could show. He thought that the operation should be done in continuity—tongue and neck. It required great courage on the part of the physician as well as the surgeon to tell a patient that a big operation must be done for an apparently trivial affection. Hardly any case survived for longer than three years after operation. He thought that the pathologist was often badly treated in only obtaining a small fragment for examination; he advocated the excision of a good piece of the growth for examination.—In reply, Professor CAIRD said that every form of carcinoma of the tongue was most malignant. The use of local anæsthesia did away with the necessity for laryngotomy. Recurrence did not usually take place in the floor of the mouth but at the root of the neck or clavicle.

Mr. D. M. GREIG read a paper on Recurrent Enlargement of the Salivary Glands. He said that the paucity of literature on the subject argued that this affection was of little importance. When the parotid glands were alone affected an erroneous diagnosis of mumps might be made. In an experience of 1500 cases of glandular enlargement Mr. Greig had notes of but five cases of recurrent enlargement of the salivary glands, and of these three were submaxillary and two parotid. 1. One case of submaxillary enlargement occurred in a healthy male aged 24 and recurred each spring. 2. A female, aged 23, suffered from submaxillary enlargement on the right side during eating or prolonged talking. 3. A woman, aged 44, exhibited recurrent swelling of the right submaxillary gland. 4. A female, aged 35, had a recurrent swelling of the right parotid, each attack being preceded and accompanied by fever. 5. A girl, aged 19, suffered from a similar affection. The parotid affection seemed to be the more common and tended to become bilateral. Many recorded cases of recurrent swelling of the parotid glands were said to have followed an attack of mumps. Many cases of glandular enlargement developed into tuberculous glands. Mr. Greig discussed the differential diagnosis of recurrent swelling from mumps and also the etiology of the former affection.

The rapidity with which the swelling generally occurred suggested a calculus, and it was possible that many such cases of recurrent swelling were mistaken for this blocking of the duct. Much allied to this recurrent swelling was the condition known as sialodochitis fibrinosa, where the duct became blocked with mucopurulent secretion. The condition of recurrent swelling would seem to be one of adult life, when at this period nervous affections were common, when secretions were prone to undergo alteration, where there might be digestive troubles or carious teeth. Treatment seemed to be of little moment. If the attack were exceedingly acute, incision might be necessary. Morestin and others recommended catheterism of the duct, and in chronic cases the injection of iodine solution along the canal.

Dr. R. CRANSTON LOW read a communication on Fungus Affections of the Finger-nails. That such diseases are more common than is generally supposed is borne out by the fact that within the last three years Dr. Low had observed no fewer than 19 cases. The cases fall into three groups: (1) ringworm; (2) favus; and (3) those due to other fungi of unknown origin. There were 16 of the ringworm variety, and these showed a marked predominance in the female sex, only two being in males. This predominance was difficult to explain; possibly the frequent washing of infected clothes might account for the predominance. Ringworm of the nails might occur at any age, the youngest of Dr. Low's cases being 10 and the oldest 58 years; the majority being between 20 and 30. This age incidence corresponded more nearly with that of tinea corporis than of tinea capitis. Ringworm of the nails was very rare in children with ringworm of the scalp. This infrequency might be partly due to the fact that ringworm of the nails was always due to the large spore fungus; but even in children with large spore tinea of the scalp, nail affections were very rare. The explanation might possibly be that tinea capitis so rarely caused itching that there was no tendency to infect the nails by scratching. The source of infection was difficult to trace, but one patient was infected whilst treating her own child's head for large-spored ringworm. Two of the cases were husband and wife and other two were sisters. Possibly spoon-shaped nails were more liable to ringworm affection. The duration of the disease varied from three weeks to seven years, the average being four years. The number of the nails affected varied from one to seven. In one-half the cases both hands were affected. Diagnosis was comparatively easily made as the appearance of the nails was constant. The splitting up and splintering of the free margin was characteristic, and the colour of the nails varied from a yellow-white to brown or black colour. In nearly all Dr. Low's cases there were definite zones presenting different colours and appearances. The infection seemed to take place from the under surface of the free margin. At the tip the nail became undermined, dark in colour, and softer than normal. The disease slowly spread up the nail which broke off in splinters. Then came a light yellow zone longitudinally striped with darker lines, and still further up there was a dark yellowish-red zone which showed little tendency to split up. The latter seemed to Dr. Low most characteristic of the condition and represented the spreading edge where the infection was just commencing. In addition there was also in many cases a heaping up of the nail into irregular prominences with dark brown depressions, and in such cases probably the nail bed was also affected. In many cases the lunule had disappeared and the tissues at the base of the nail were red and swollen. The diagnosis was confirmed by microscopical examination of pieces of the nail in liquor potassæ. The fungus appeared as rows of square spores arranged in characteristic rows. If not found in one specimen others should be examined. Cultures were made in six cases and yielded three different kinds of large spored ringworm fungus—viz., trichophyton acuminatum, rosaceum, and crateriforme flavum. This was the first occasion in which the last named trichophyton had been found in ringworm of the nails. As to treatment it was difficult, but all methods had for their object the softening and removal of as much of the diseased nail as possible, and the application of a continuous antiseptic dressing. The best results were obtained by Harrison's method—i.e., after daily scraping, the application of a solution of pot. iod. ℥i. in liq. potassæ and aq. dest. āā ℥ss. for half an hour on a piece of cotton wool. After this a solution of corrosive sublimate was applied for 24 hours and the finger covered with an indiarubber finger-stall. The nail became black and so soft that it could be removed. A new method devised by Dr. Norman Walker was that of applying ordinary Fehling's solution to the nail on lint and covering it with a finger-stall for a day or two. The nail by this time had become so soft as to be easily removed by forceps. After this a solution of copper sulphate (10 grains to 1 ounce) was used as a continuous dressing. Two cases of favus of the nails were met with in children who had already favus of the scalp; the nail was yellower in colour and more raised than in ringworm. From another case where the disease had lasted ten years, a peculiar fungus was obtained which differed microscopically altogether from either ringworm or favus. The culture also did not correspond to any of the common fungi and further examination was necessary.—Dr. W. ALLAN JAMIESON, Dr. NORMAN WALKER, and Dr. FREDERICK GARDINER took part in the discussion.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Presidential Address.—Exhibition of Specimens and Cases.

THE first meeting of the session of this society was held on Oct. 28th, Dr. A. CHRISTY WILSON, the President, being in the chair.

The PRESIDENT read his opening address on Tuberculosis, its Prevention and its Diagnosis and Treatment by the Use of Tuberculin. He was of opinion that the balance of evidence was in favour of the identity of human and bovine tuberculosis, and that it should be the duty of the State to discover tuberculosis in living beasts. The use of tuberculin, which was supplied free by the Board of Agriculture, was at present entirely voluntary. By its use many apparently healthy animals were found to be tuberculous. In Denmark the regular procedure was much more efficient in this respect than in our own country, tuberculous cows being isolated and kept under observation by State veterinary surgeons. He strongly urged the necessity for the isolation of advanced cases of tuberculosis and the necessity for more systematically carrying this out. He did not think that the present modes of sanatorium treatment were entirely satisfactory, many cases being discharged as cured from one sanatorium only to enter another. He advocated the employment of inexpensive wooden huts in the construction of sanatoriums, which could be erected in every district with comparatively little expense. He then considered the various tests which had been made to determine the presence of tubercle, and in his experience had found von Pirquet's more accurate and safer than Calmette's. The subcutaneous method, however, was the most accurate and precise. He much preferred making his tests with Beraneck's T.B.K. 1 tuberculin which he had used in a large number of cases, mainly surgical. He thought that Beraneck's T.B.K. 1 tuberculin was much preferable to Koch's new tuberculin, and if it were more widely employed as a therapeutic agent tuberculin treatment would gain in popularity. He quoted illustrative cases of improvement that had followed the use of this tuberculin. In conclusion, he thought that it was not necessary to control injections by the estimation of the opsonic index.

Mr. H. COLLINSON showed a specimen of Traumatic Rupture of the Spleen successfully treated by splenectomy. A labourer was kicked by a horse over the left costal margin; this was followed by hæmaturia and signs of intra-abdominal hæmorrhage. At the operation a large retro-peritoneal hæmorrhage was present over the left kidney.

Dr. R. BEATTIE showed a Mass of Hair which he had successfully removed from the stomach of a girl and which formed an exact cast of the organ and weighed 2½ pounds. Before the operation a hard gastric tumour was made out.

Mr. MICHAEL A. TEALE showed a child who had sustained Slight Concussion of the Brain. This was followed by swelling of the nasal half of each optic disc and marked rotatory nystagmus of a temporary nature.

Mr. H. LITTLEWOOD showed a Small Spirit-level and a Pencil-case successfully removed from adult male bladders.

Mr. C. H. GREENWOOD showed a Liver from a case of Portal Cirrhosis in a child who had been treated by fibrolysin. Microscopic appearances showed that softening of the fibrous tissue was taking place.

Dr. F. RITCHIE SINTON showed a specimen of extensive Ulcerative Colitis from a patient, aged 23 years, who had had intermittent diarrhœa, tenesmus, and passage of blood and mucus in the stools for 16 months. Death was due to iliac and pulmonary thrombosis.

Dr. W. H. MAXWELL TELLING showed a case of Myasthenia Gravis in a young girl. There were severe bulbar symptoms, the weakness of the pharyngeal muscles leading to choking attacks during meals. There was also marked weakness of the limbs. Considerable improvement of the bulbar symptoms had taken place.

Cases and specimens were also shown by Dr. C. OLDFIELD, Mr. J. F. DOBSON, Dr. A. BRONNER, Dr. T. WARDROP GRIFFITH, Mr. WALTER THOMPSON, Dr. T. CHURTON, Dr. A. G. BARRS, Dr. J. B. HELLIER, and Dr. E. F. TREVELYAN.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

Exhibition of Specimens.—Presidential Address.

A MEETING of this society was held on Oct. 26th, Dr. A. W. RUSSELL, the President, being in the chair.

Dr. J. NIGEL STARK showed: (1) An Ovarian Cyst; (2) Hydrosalpinx; (3) Fibroids of the Uterus; and (4) Malignant Disease of Both Ovaries.

The PRESIDENT showed: (1) A Uterus with Malignant Disease at the Fundus; (2) Extra-uterine Pregnancy; and (3) Two Fibroids of the Uterus.

Dr. W. D. MACFARLANE showed an Adeno-carcinoma of Both Ovaries.

Dr. A. LOUISE MCILROY showed a Photograph of an Eight Months Fœtus with Enormous Hypertrophy of the Thyroid Gland.

Mr. D. DUFF showed a Fibroid of the Uterus.

Dr. A. M. KENNEDY showed: (1) The Liver and Kidneys from a case of Eclampsia; (2) Liver with Profuse Capillary Hæmorrhages from a case of Eclampsia; and (3) the Brain from a case of Eclampsia.

Dr. RUSSELL delivered his Presidential address on Prophylaxis in Obstetrics. In his introductory remarks, he referred to the fact that the society had now completed the first 25 years of its existence, and suggested that some suitable means should be taken to commemorate the event. One or two special points in its history were recalled, particular note being taken of the distinguished obstetricians and gynæcologists who had in turn held the office of honorary president, and of the benefit it had been to the society to observe this custom. It was intimated that Professor J. Whitridge Williams of Johns Hopkins University, Baltimore, had accepted election as honorary president for the next two years. The President, in coming to the address proper, said that though no special reference was made to it in literature, prophylaxis was the central principle of the art of obstetrics, the ideal towards which the true obstetrician must constantly strive, the persistent effort he must always make, to maintain the physiological character of childbirth. He pointed out that prophylaxis in obstetrics had to begin in the infancy of the future mother, for it was then that the seeds were sown that provided in after years a crop of cases of distorted spine and contracted pelvis. It was necessary to continue one's vigilance through the periods of girlhood, with its risks connected with school life and faulty development, puberty with the possibility of derangement of menstrual function, and adolescence with its perils, both physical and moral. He emphasised the need for early instruction regarding the reproductive functions. The principle of prophylaxis or prevention of complication was then traced and illustrated throughout the course of pregnancy in relation to constitutional diseases and uterine derangements, careful measurements of the pelvis, examination of the urine, choice of operative interference when such is necessary, the precautions necessary in handling or examining the patient. The subject was completed by showing the place of prophylaxis in labour and in the puerperium with regard to the promotion of spontaneous labour, the time to operate, the avoidance of such complications as hæmorrhage, sepsis, subinvolution, and uterine displacement.

Dr. J. MUNRO KERR (past President) thanked Dr. Russell on behalf of the Fellows of the society for his very interesting address. In his remarks he said that Dr. Russell had brought forward all the important conditions that might be prevented by prophylaxis. He had always been struck by the extremely broad-minded manner in which the President had attacked all obstetrical problems. Dr. Kerr congratulated Dr. Russell on his results on the operation of the induction of labour, and was with him in all that he had said on the measuring of pelves before labour set in and on the repeated examinations of the urine during pregnancy.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of the Pathological Section of this institution was held on Nov. 3rd, Dr. T. R. Bradshaw being in the chair.—Dr. E. Stevenson and Dr. R. E. Harcourt showed a specimen of Endothelioma(?) of the Eye.—Dr. Harcourt showed a culture of Aspergillus Niger, growing upon a lemon, isolated from the ear. The ear had been affected for two years, and recently the external auditory meatus was partly filled with pseudo-cholesteatomatous layers interspersed with black material.—Dr. K. A. Grossmann showed an Intra-ocular Melano-sarcoma of the Ciliary Region of about six weeks' duration. The eye had received a severe electric shock shortly before illness began. Perhaps this had stimulated the growth of a small dormant tumour.—Mr. R. Thelwall Thomas showed a Retro-peritoneal Tumour weighing 22 pounds, microscopically a spindle-celled sarcoma, which was successfully removed from a patient who was still living, four months after the operation; also a recent Malignant Growth occurring in an intracystic papillomatous tumour of three years' duration.—Dr. J. Lloyd Roberts and Dr. D. Moore Alexander showed a Carcinoma of the Pancreas and Liver from a man aged 23 years.—Dr. Blair Bell and Dr. Ernest Glynn showed microscopical specimens of Calcareous Secretions in the Ovary of a patient aged 49 years. Concretions in the ovary were of two kinds—calcareous and those due to coagulated proteins, mixed with acid hæmatin. Both varieties probably arose in connexion with the Graafian follicles and were extremely rare.—Dr. N. P. Marsh, Dr. H. Armstrong, and Dr. Glynn showed two cases of Pyloric Stenosis from Infants which was due to muscular hypertrophy.—Dr. Glynn also showed lantern slides of Spirochætæ demonstrated by the "Burri" Indian ink method. He drew attention to the enormous number of the spirochæta refringens sometimes encountered in balanitis.—Dr. O. T. Williams read a note on the Estimation of Chlorides in Urine, pointing out the need of a more routine use of the method in cases of nephritis, so as to save the administration of salt-free diet in cases where there was no chloride retention. He also demonstrated the use of Sahli's glutoid capsule in the diagnosis of pancreatic diseases, showing its uses and its limitations.—Dr. Stenhouse Williams and Dr. Nauss read a note on the value of Rabbit Leucocytic Extracts in the Protection of Guinea-pigs from Anthrax Infection. The leucocytes were prepared according to Pettersson's method and were inoculated in some cases simultaneously with the infecting organisms, in others at intervals of 24, 48, and 72 hours after the inoculation with anthrax. In all cases the extract was found to exert a marked protective influence, many of the guinea-pigs living for prolonged periods, though all the controls were dead within six days.—Mr. Moore Alexander stated that leucocytic extract had been used in the treatment of acute infections in man. The diseases treated had included pneumonia, with or without empyema, epidemic meningitis, streptococcal endocarditis, &c. In the majority of cases so treated the results had been immediately and strikingly beneficial.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Oct. 27th, Mr. A. W. Cuff, the President, being in the chair.—Dr. A. G. Yates showed a patient, aged 41 years, with Chorea. In July, 1910, he began to suffer from a sharp stinging pain in the right shoulder. Shortly afterwards he noticed irregular movements in the hands which later spread upwards and involved the arms and head. He had now slight lateral nystagmus and constant pain above the right clavicle in the region of the brachial plexus. The knee-jerks were slightly exaggerated. In other respects he appeared to be healthy. His sister had suffered in the same way for the last 20 years.—Mr. W. S. Kerr showed the specimen from a case of Innominate Aneurysm causing Asphyxia from Tracheal Pressure. The patient, a man, aged 34 years, who had had syphilis, was

admitted to the Royal Infirmary for urgent dyspnœa. A laryngotomy and passage of a small catheter gave temporary relief. The trachea was flattened by the tumour.—Mr. G. H. Pooley read a paper on Squint. After shortly discussing the history of squint, he referred to the importance of the fusion sense in maintaining the proper position of the axes of the eyes, and pointed out that when the fusion sense was weak errors of refraction such as hypermetropia produced over-accommodation for near objects, and owing to the close relation between the centres in the brain for accommodation and convergence, over-convergence was produced. The fusion sense not being strong enough diplopia did not cause much trouble and the brain learned to disregard the impression from one eye. The causes of loss of fusion sense were not known, but were supposed to be associated in some cases, at any rate, with defects of the auditory apparatus or the labyrinth and allied to nystagmus, or to be simply due to developmental error in those association bundles which are late in receiving their myeline sheaths, or in the centres which they join up. He pointed out that it was necessary to undo the mischief step by step: first, to correct the error of refraction, then to occlude or atropise the fixing eye until the power of fixation returned to the squinting eye. He found in the cases which he investigated that 75 per cent. of the squinting eyes were amblyopic, and in these cases it was advisable to occlude or atropise the fixing eye for from 12 to 18 months or until good sight had returned to the amblyopic eye. If these had not already become straight, then operative measures might be successfully employed. A classification of squint was given and some pathological conditions associated with paralytic squint with amblyopia were shortly referred to. An appeal was made to educate the public in the importance of amblyopia and its treatment. Statistics from 100 cases were given.—Mr. R. Favell showed a specimen from a case of Cæsarean Section for Accidental Hæmorrhage.—Dr. A. E. Barnes showed a Tumour of the Pons, the nature of which had not yet been definitely determined.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 2nd, Mr. W. Morley Willis, the President, being in the chair.—Mr. H. B. Tawse showed the case of a man 30 years of age with Congenital Occlusion of the Right Posterior Nares by a Bony Plate, causing Complete Nasal Obstruction on that side. He had also partial nasal obstruction of the left side of the nose due to a deviated septum.—Mr. Morley Willis then delivered his Presidential address on "The Significance of the Rigid Abdomen." He regarded this as one of the most important of all clinical signs in the diagnosis of an acute abdominal lesion. The abdominal parietes were innervated by the last six dorsal nerves, which through their sympathetic connexions supplied the abdominal viscera. Cutaneous hyperæsthesia, as worked out by Head, by its position served to help to diagnose the particular lesion. In most cases there were various other clinical signs to help the diagnosis, but very often the sole sign was abdominal rigidity. It was an early sign, and if they waited for further clinical manifestations an operation might prove unsuccessful. Illustrating his remarks, the President related the case of a boy, aged 16 years, who, four hours before being seen, was seized with sudden acute abdominal pain. The only physical sign was the abdominal rigidity. At the operation a perforation of the duodenum was discovered. In another case of a girl with a perforated gastric ulcer rigidity of the abdomen was the only sign. In any severe disease of the peritoneum reflex abdominal rigidity was at once caused. One fallacy was that in certain types of pleural disease abdominal rigidity was present. However, in these cases the temperature was usually higher and the respirations were more rapid and generally "catchy" at the end of inspiration. Finally, he laid it down as a good surgical axiom that the necessity for operation was urgent in exact proportion to the intensity of the abdominal rigidity.—A discussion then took place in which Dr. F. H. Jacob, Dr. C. H. Cattle, Dr. Parry Jones, Dr. H. Michie, Dr. K. Black, Dr. A. Stanley Green, Dr. J. A. O. Briggs, and Dr. W. Hunter took part. Several of these gentlemen related cases in which abdominal rigidity was absent, although the conditions were urgent; others had seen cases where abdominal rigidity was present, but the cases had recovered without surgical treatment.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Nov. 4th, Dr. Leonard Williams, the President, being in the chair.—Dr. N. S. Finzi read a paper on the Radium Treatment of Cancer. Having described briefly the physical characteristics of the α, β, and γ rays, he pointed out that these rays were given out in all directions even from flat surface applicators, and therefore to get the best results it was advisable that the radium should be surrounded entirely by the tissue of the growth. The intensity of the radiations varied inversely as the square of the distance, and this fact imposed some limitations in the treatment. Both β and γ rays exerted a selective action on cancer cells, so that the same dose which was innocuous to a healthy tissue would destroy the cancer cells, but the γ rays were much more selective than the β, and therefore it was necessary to use metallic filters to cut off the majority of the β rays. The latent period of the β and γ rays was different. In some cases the absorption of a primary growth led to some retrogression of metastases, but the treatment of every deposit that could be reached was, nevertheless, advisable. The class of case suitable for treatment depended on (1) the microscopical structure, (2) the position and size of the growth, and (3) the constitution of the patient. It was necessary to treat the whole tumour thoroughly with filtered rays, to use as much radium as possible, and to give one maximal dose every six weeks. In 64 completed cases of malignant growths there were seven cases in which the growth had completely disappeared. They were in the lip, breast, uterus, prostate, rectum, and œsophagus, and most of them had the diagnosis confirmed by microscopical examination. He had a further 23 cases still under treatment, of some of which he was very hopeful. Relief of pain and discharge was a marked feature even when the growth did not disappear. Rodent ulcers were practically always curable.

Reviews and Notices of Books.

Accidents in their Medico-legal Aspect by Leading Medical and Surgical Authorities. Edited by DOUGLAS KNOCKER, Barrister-at-Law. London: Baillière, Tindall, and Cox; and Butterworth and Co. 1910. Pp. 1254. Price 30*s*.

DURING recent years the amount of litigation under the Workmen's Compensation Act has developed to very large proportions. In all the cases the medical element is naturally of the greatest importance. The medical witnesses have to be questioned by members of the legal profession, and it is therefore necessary that the barristers and solicitors engaged should have some knowledge of the scientific issues involved. The ordinary medical text-books and treatises are not always easy for other than medical practitioners to fully comprehend, and if sentences are removed from their context confusion is likely to arise. Mr. Knocker has therefore made himself responsible for the volume now before us, the general aim of which is to make lawyers and medical men understand each other in their mutual relations. The labour of editing such a vast work must have been enormous, but Mr. Knocker is a barrister in active practice, and has had a large experience in the nature of the information required. He has been careful to avoid questions of purely academic interest, and has only included matters of actual importance, and by these limitations he has enormously increased the practical value of his work.

The book is divided into three sections—the legal part, the medical part, and the case guide. An index covers all three parts. The legal part has been written by Mr. Knocker himself. It is not intended to be exhaustive; all that is claimed for it is that it gives to medical men a short statement of the law on matters of interest to them. Reference is made to numerous cases, and this will afford help to lawyers by leading them at once to the line of cases they desire for various points in the law of accidents. An important matter touched upon is that of contributory negligence. It is pointed out

that circumstances of the nature of contributory negligence on the part of the injured person, which may afford a defence to an action brought at Common Law or under the Employers' Liability Act, both being actions founded upon negligence, may not furnish any defence to proceedings instituted under the Workmen's Compensation Act. Such a defence is not available under this last Act unless such negligence on the part of the applicant amounts to "serious and wilful misconduct," as defined by the cases, and even then is not available when death or serious and permanent disablement results from the accident.

The medical part of the work has been written mainly to assist the lawyer to understand the consequences of an accident to the part of the body alleged to have been injured, and to help him to follow the medical witnesses when they deviate slightly from the beaten track. It is not intended to instruct the medical expert in the details of his profession, but doubtless he may derive benefit by learning the special points to which counsel is likely to ask him to turn his mind. The various articles have been mainly written by physicians and surgeons attached to the teaching schools, and their names vouch for the soundness of the views which they express. The effect of accident on the various systems and parts of the body are considered in detail, and there are also articles on the effect of poisons, alcohol, anæsthetics, and electrical injuries. Each article is planned as far as possible on definite lines, and its contents are classified under identical and uniform headings. By reference to these headings the following questions can in each case be answered: What are the immediate consequences of the accident? What chance is there of disease supervening as a remote consequence of the injury? Was there any disease existing before the accident and aggravating its effects? Within what time will the man be physically cured, and when will he be fit to return to his former work, or to undertake some other employment? Is there any need for an operation, and if so, is it such an operation as a reasonable man would elect to undergo? Is there any likelihood of a recurrence of the consequences of the injury? In articles dealing with injuries technical terms have naturally to be employed, and at the commencement of each chapter these terms are explained, so that members of the legal profession can more easily follow the text. In the chapter on Accidents Occurring in the Tropics, we notice a diagram of what is stated to be the cycle of development of the malarial organism. It is only fair to state that the picture was not furnished by the author of this section.

The third section of the book is the case guide, in which is given a short epitome of nearly every case referred to in the legal section, with a number of other cases of personal injury. The object of this collection is stated by Mr. Knocker to be threefold: (1) to afford lawyers numerous instances of cases where medical points have arisen and been thrashed out, in order to assist them in advising upon or conducting similar cases; (2) to give, as far as possible, to all engaged in litigation some idea of the amount of damages which will probably be recovered; and (3) to assist medical practitioners in estimating the probable duration of incapacity after injury.

It will thus be seen that this work covers a large field, and members of the medical and legal professions who have had experience in cases under the Workmen's Compensation Act will readily appreciate the great value of such a book. We heartily congratulate Mr. Knocker on the success of his editorial duties and can strongly recommend the work to members of the two professions for whom it is intended. It is printed in clear type on good paper. The headlines are well arranged and the numerous illustrations add to the value of the written descriptions.

The Prescribing of Spectacles. By ARCHIBALD STANLEY PERCIVAL, M.A., M.B., B.C. Cantab., Senior Surgeon to the Northumberland and Durham Eye Infirmary. Bristol: John Wright and Sons, Limited. 1910. Pp. 159. Price 5*s.* 6*d.* net.

WE fear that the average student of ophthalmology, if he takes up this book, will view its pages, studded with mathematical formulæ, with amazement and such profound consciousness of his own shortcomings that he will lay it down in despair. Be it said at once that that is the student's fault, and not the author's. In the ideal training of an ophthalmologist he will have to take a serious course of mathematical optics, geometrical and analytical, theoretical and applied. But that day is not yet, and few students have both the knowledge and the energy to grapple with the problem exhaustively. For such as have the courage and enthusiasm no better introduction to the algebraical exposition of the subject can be found in the English language. Perhaps it would have been kinder to have tempered the wind to the shorn lamb and made freer use of geometrical explanations and proofs, but much of the subject matter of this book has been treated thus in lucid style by Dr. Maddox. Anyone who masters Maddox's Ocular Muscles and this book will have laid an excellent foundation, and he will find that his labour has not been spent in vain. Instead of rule-of-thumb methods only too commonly in vogue he will be armed with precise knowledge, which is the surest weapon in the battle for success. The book treats of accommodation, static refraction, and faulty tendencies and deviations of the ocular muscles. An optical section, culled largely from the author's treatise on optics, deals mathematically with the eye as an optical instrument, the tilting of lenses, two cylinders with axes asymmetrical, periscopic lenses, prismospheres, and so on. We cordially recommend the book and hope that it may be more widely studied than we fear is likely to be the case.

Physical Diagnosis. By RICHARD C. CABOT, M.D., Assistant Professor of Medicine in Harvard University. Fourth edition, revised and enlarged. With 5 plates and 240 figures in the text. London: Baillière, Tindall, and Cox. 1910. Pp. 579. Price 15*s.* net.

THE proper physical examination of cases and the correct interpretation of the signs elicited are matters of great importance in regard to diagnosis. They are also essentials in the proper equipment of the practitioner which can only be acquired by systematic examination of cases in the wards or out-patient department. A practical handbook on these subjects, from which the student can learn the proper methods of physical examination and be warned against errors, fallacies, and inaccuracies, is therefore likely to be of special value. Dr. Cabot's book is well adapted for such a purpose: it is of convenient size, it is practical, and also eclectic, since only those methods are described which the author has practical experience of, and no mention is made of those which he believes to be useless. It is this personal selection of methods in place of an ill-digested presentation of every method which gives this book its special character, and doubtless accounts for the appearance of four editions in the space of five years.

After the discussion of certain data relating to the body as a whole, including considerations of weight and temperature, the regional examination of the body is proceeded with and the various organs and systems are dealt with in order. The methods of examination appropriate to each are described, the information afforded is clearly stated, and the differential diagnostic value of each sign is worked out. Where possible tabulated lists of conditions giving rise to certain signs are attached to each section, and these constitute a valuable feature of the book. The physical examination of the

respiratory and cardio-vascular systems is described at considerable length. The methods of inspection, palpation, percussion, and auscultation are admirably worked out. The directions for the proper percussion of the chest and heart and for the choice and use of the stethoscope might with advantage be studied by all students on starting their clinical medical work, though we notice that Dr. Cabot has little or nothing to say of the rigid wooden stethoscope, which certainly has its uses. The individual pulmonary lesions and the various forms of cardiac disease are carefully and fully described, together with their differential diagnosis and the variations in the physical signs found in association with them. The essential features of blood examinations are given, and directions afforded for counting corpuscles, preparing and staining films, and for the interpretation of the results obtained. The examination of exudates and transudates and the recognition of parasites and their ova are also considered. In connexion with diseases of the kidney the analysis of the urine is described, and the significance of the results obtained is discussed, but neither kidney diseases nor affections of the nervous system are dealt with as fully as are those of the lungs and heart.

Dr. Cabot obviously writes from a large practical experience, and this gives a special value to his statements. He is sometimes caustic in his disagreement with commonly repeated inaccuracies. Thus, for example, he writes: "Enlarged veins about the navel, the so-called 'caput Medusæ,' are commonly found in text-books but rarely in cirrhosis of the liver." The illustrations are numerous, but not of a very high order. Those which are diagrammatic are useful, but of those which are reproduced from photographs many leave much to be desired. They are not worthy of the book, which is a useful handbook on the subject with which it deals.

Amœbic or Tropical Dysentery: its Complications and Treatment. By W. CARNEGIE BROWN, M.D. Aberd., M.R.C.P. Lond. With illustrations. London: John Bale, Sons, and Danielsson. 1910. Pp. 271. Price 7*s.* 6*d.* net.

THIS work is intended mainly for the use of the practising medical man, and one of its principal aims is to lay down precise and comprehensive directions for the treatment of the various clinical types of amœbic dysentery. The importance of the malady and its frequency among Europeans who are called upon to reside in the tropics are now fully recognised. For some little time information on the disease has been accumulating, and Dr. Carnegie Brown now furnishes an interesting general survey of the facts and opinions which have been formulated respecting this form of tropical dysentery, as well as of other protozoan infections of the human intestine.

The book comprises 24 chapters, which deal with the subject in seven parts—viz., (1) general; (2) biological; (3) clinical; (4) pathological; (5) etiological; (6) complications and sequelæ; and (7) treatment. After a short introduction the author gives the history and literature of the disease, and then goes on to discuss its epidemiology and geographical distribution. Following this, classification and the general relations of protozoa to intestinal diseases are considered. Four chapters are devoted to the entamœbæ of the human intestinal tract, after which other infections of the human alimentary canal are dealt with. The symptoms, diagnosis, and morbid anatomy of amœbic dysentery are respectively treated of in the succeeding chapters, as is also "the case for the pathogenicity of *Entamœba histolytica*." The causes of amœbic dysentery are then described, and hepatic abscess and other sequelæ receive the attention they need. A chapter is given on the prophylaxis of the malady, after which the subject of treatment is fully considered, both of acute and chronic forms, diet, drugs, local medication, as well as surgical and other methods of treatment being each in turn discussed. Lastly, the treatment and prophylaxis of amœbic abscess of the liver are described.

The various views on the treatment of amœbic dysentery are clearly set out, but the author does not altogether share the high opinion held by McLean and others as to the value of ipecacuanha, the *radix antidysenterica*, which in the past enjoyed for so long the reputation of being almost a specific for the disease. Dr. Carnegie Brown describes it, however, as "a remedy of moderate but definite practical utility." But whether we agree or not with the author in his views on this or other parts of the subject we must admit that he sets out the various kinds of treatment clearly and well, so that the practitioner who consults the book can never feel at a loss. For the practising physician, for whom the book is intended, the work cannot fail to prove of great service. The matter is dealt with in a clear and comprehensive manner. We confidently recommend the volume to those who may be called upon to treat or prevent amœbic dysentery.

Die Gonorrhoe des Mannes und ihre Komplikationen. (*Gonorrhœa in Man and its Complications.*) Von San.-Rat. Dr. HANS WOSSIDLO. Second revised edition, with 54 illustrations in the text and 8 plates, some of which are coloured. Leipzig: Georg Thieme. Pp. 337. Price M. 12.

NOT long since gonorrhœa was looked upon as a comparatively mild disease and of much less importance on the whole than syphilis, but at present it is doubtful whether, when we consider all the harm it may do and all its complications and sequelæ, it may not be looked upon at least as severe as, if not even more serious than, syphilis, especially if Ehrlich's recently introduced treatment with "606" fulfils its promises. With this enhanced appreciation of the importance of gonorrhœa there comes naturally the necessity for the more close study of the disease in order that its treatment may be more rapid, more thorough, and more certain. The first great step in advance was the recognition of the gonococcus, for before that discovery the exact connotation of the word gonorrhœa was uncertain. Recent advances have chiefly effected a wider knowledge of the extent of the lesions produced by the disease and better directed attempts to put an end completely to it as soon as it is recognised.

Of a large number of excellent works on this subject one of the most useful and practical is that the second edition of which is now before us. Dr. Wossidlo writes with a full knowledge of his subject, and he is well acquainted with what other surgeons have done in this branch of medicine. His book is systematically arranged. Commencing with the story of the gonococcus and the methods of staining it, there follows an account of those points in the anatomy of the urethra which are important in this connexion. The various manifestations of the acute form of the disease are then described and the treatment is fully discussed. Though many methods are referred to, probably the most useful portion of these chapters is that in which the author describes his own methods of treatment. In chronic gonorrhœal urethritis insistence is laid on the value of the urethroscope for the diagnosis of the exact condition present, and a large number of coloured illustrations are given showing very graphically various urethroscopic appearances. Succeeding chapters deal with the gonorrhœal affections of the prostate and neighbouring organs, and cystitis and pyelonephritis are also described. The treatment of stricture of the urethra is fully dealt with. Although a chapter is devoted to the manifestations of the disease in other parts of the body, we think that

the importance of this subject deserves rather more than the ten pages allotted to it, but on the whole the book affords a full and clear presentation of our knowledge of gonorrhœa.

The Microscopical Examination of Foods and Drugs. By H. G. GREENISH, F.I.C., Professor of Pharmaceutics to the Pharmaceutical Society of Great Britain. With 209 illustrations. Second edition. London: J. and A. Churchill. 1910. Pp. 386. Price 12*s.* 6*d.* net.

THE first edition of this well-known work was published in 1903 and has always held the position of a standard authority on the subject with which it deals. The author has not found it needful to make much alteration in preparing this second edition, but has made some additions, the chief one being a section on the more commonly recurring adulterants of powdered foods and drugs. The title is not quite accurate; the scope of the work is confined to substances derived from the vegetable kingdom, with the exception of sheep's wool and silk, neither of which can be said to come under the headings of a food or drug. With this qualification the work is both detailed and comprehensive. Beginning with a description of the various starches, their microscopic appearances and technique of preparation are minutely described; then follow sections on hairs and textile fibres, spores and glands, woods, stems, leaves, flowers, barks, seeds and fruits, rhizomes, and roots. A special feature in the work consists in the profusion of excellent illustrations, of which there are 209, all of them admirably reproduced; they are drawn to large scale, many of them by the author himself or in conjunction with M. Eugène Collin. The last section but one is devoted to a description of the adulterants of food and drug powders, these adulterants being classified and described according to their source of origin, not according to the situations in which they are likely to be found, or grouped under the substances which they are used to adulterate. It would have been helpful to the student to have described and figured under the heading of each article of food or drug dealt with any adulterants likely to be met with in its examination. A profusion of technical terms are necessarily used, especially in reference to botanical physiology; it would have been useful to have appended a glossary, as this book will be consulted by many who are not teachers or students of botany as a science.

LIBRARY TABLE.

Conquering Consumption. By WOODS HUTCHINSON, A.M., M.D. London: Constable and Co., Limited. Boston and New York: Houghton Mifflin Company. 1910. Pp. 138. Price 4*s.* 6*d.* net.—This is another of the many books which have recently been written with the object of showing that phthisis is being slowly driven from our midst and that the fight against it is a winning though slow one, victory being more sure if the battle be fought with greater courage on the part of the public. In a series of 12 chapters Dr. Hutchinson tells his readers, who are members of the public rather than of the medical profession, something about the tubercle bacillus, how it enters, what it does, and how best to resist its activities. The natural cure for consumption, he says, is the camp, and one chapter is devoted to this subject, while another gives specifications for various structures which can be easily built for home treatment when circumstances prevent the patient from leaving his residence. In a chapter headed, Cash and Consumption, the author points out that effective treatment must be expensive, especially to the poor. "Here is where the community must step in and help," he says. "The treatment of disease, if it is to be successful, can no longer be individual—it must be social. The community must provide the means for the worker to recover from his tuberculosis. It is morally bound to do so, because in seven cases out of ten it has made him tuberculous. It can abundantly afford to do so, to escape supporting his widow and educating his orphan children." The book is a powerful appeal to the public intelligence.

The Parson's Pleasaunce. By P. H. DITCHFIELD, M.A., F.S.A., F.R.S.L., F.R.Hist.S. London: Mills and Boon, Limited. 1910. Pp. 368. Price 10*s.* 6*d.* net.—This book is an account of the recreations and pastimes of a country parson whose hobby is archæology, who loves books and gardens, and who knows how to make the most of an annual holiday. It is divided into seven chapters, containing papers, many of which have already appeared in well-known magazines, on such subjects as gardens, old gardening books, rare tomes, village life, folk lore, and travel. As might be expected, the author has many stories to tell of the working of the rustic mind, especially in matters connected with the church. We may quote two. A parish clerk explained the 13 small figures at the foot of a monument as representing the number of wives which the subject of the monument had married, and replied to a lady who expressed her astonishment as follows: "Well, yes, marm, but you see it were rather a 'obby of 'is." A farmer who was marrying his fourth wife, and to whom it had been suggested that all his wives had possessed money, replied, "Yes, sir; but what with bringing on 'em in, and carrying on 'em out, there ain't no profit." The volume is embellished with reproductions of old prints and other illustrations, and will make a companion for moments of leisure to those who like to think—and not to think too deeply.

Life and Sport of the Norfolk Broads. By OLIVER G. READY, B.A. London: T. Werner Laurie. 1910. Pp. 249. Price 7*s.* 6*d.*—"I cannot believe that any other boy ever had so happy and so interesting a childhood as myself, with the sea on one side, the dear old Broads on the other, and the kindest of friends at every turn." In illustration of this prefatory remark the author describes men, beasts, and things in the land of the Broads as they appeared to him some three decades ago. In a style at once clear and picturesque he makes the reader feel the exhilarating effect of the wind and the frost, the cheerfulness of the sun's glow, and the magic of nature. Birds, gardening, games, live-stock, boyish pranks, fishing, shooting, sailing, ratting, and rabbiting,—all are treated in a way that only experience could have dictated, and the result is a readable book and, as far as medical men are concerned, an eloquent plea for an out-door life.

Low's Handbook to the Charities of London. London: Eliot Boothroyd. 1910. Price 1*s.*—This useful handbook of 248 pages has now reached its seventy-fifth year of publication and contains in an easy form for reference all the information which the general inquirer is likely to need with regard to the charities of London. A classified table of contents shows the various institutions according to their objects, while a brief account of each charity is arranged alphabetically. The preface to the handbook this year takes the form of an interesting sketch of the history of orphanages.

The Airy Way. By GEORGE A. B. DEWAR. London: Chatto and Windus. 1910. Pp. 253. Price 6*s.* net.—The way of an eagle in the air was one of the things "too wonderful" for the writer of the Book of Proverbs, and although since his day we have made much progress in our knowledge of the dynamics of flight the complete conquest of the air has still to be achieved. The author of "The Airy Way," however, deals with the subject principally from the point of view of a lover of nature and a careful observer of the ways of flying creatures, and discusses in a pleasant manner the motions of the wings of the inhabitants of the air as they appear to the sense of sight. This sense,

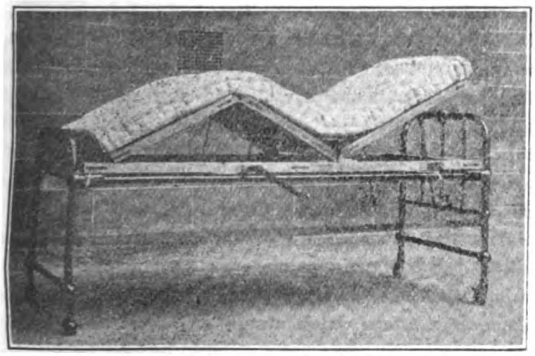
however, is very likely to be deceived, especially in the case of rapid motion like that of the wings of many birds and insects when in flight. Of this the author is aware, and he does not pretend to solve a problem towards the solution of which we are as yet in the experimental stage, but he gives us some charming descriptions of the winged feats of birds, bats, and insects which he has been watching for many years.

New Inventions.

A NEW BED-REST.

I BRING this comfortable and easily-adjusted bed-rest, especially adapted for maintaining "the Fowler" position, to the notice of the profession. My experience of several of the many bed-rests in use is either that they are difficult to manipulate or that the patient does not find them comfortable. After many trials and alterations I have found the rest which is represented in the accompanying illustration to be both comfortable to the patient and easily worked by one nurse.

The rest consists of a strong wooden frame carrying three hinged pieces for the support of the patient's back, thighs, and legs respectively. By means of a handle acting through a ball-bearing box screw the three pieces can be raised and fixed at almost any angle, so that, if desired, the patient can be brought almost into the sitting posture. Raising the thigh-piece flexes the patient's knees and prevents him slipping down the bed. No special mattress is required, for the ordinary mattress readily follows the angles of the rest, as can be seen in the figure. Enemata can be easily



administered and the bed-pan introduced by lowering the thigh-piece, while continuous saline injections can be given once the rectal tube has been inserted.

I have found the bed invaluable, not only in maintaining the Fowler position after abdominal operations, but in many other conditions. The rest can be made to fit any ordinary single bed, but should any difficulty arise it can be laid on trestles, when it acts both as bed and bed-rest. I am indebted to Mr. Woodward, clerk of works to this infirmary, for carrying out and elaborating the idea and also for the photographic representation.

PETER PATERSON, M.B., C.M.Glasg., F.R.F.P.S.Glasg.,
Glasgow. Surgeon to the Glasgow Royal Infirmary.

BRITISH MEDICAL BENEVOLENT FUND.

AT the October meeting of the committee 27 cases were considered and grants amounting to £209 made to 23 of the applicants, one case being passed over and three postponed for further inquiry. Appended is an abstract of the cases relieved:—

Widow, aged 32 years, of L.R.C.P., L.R.C.S. Edin. Since husband's death six years ago has supported herself by nursing and letting lodgings, and now asks for assistance towards the education of her two children, aged 12 and 8 years. Voted £12.

Widow, aged 50 years, of M.R.C.S. Has been incapacitated for some months owing to an accident, and is dependent on a daughter whose earnings are small. Voted £5.

Daughter, aged 68 years, of late M.R.C.S., L.S.A. No income. Is given a home in return for services, but receives no salary. Suffers from increasing deafness and general ill-health. Voted £12.

Widow, aged 46 years, of L.K.Q.C.P. Irel. Since her husband's death has maintained herself by letting lodgings and sewing, but owing to a recent illness is obliged to ask for a little help. Voted £5.

Widow, aged 34 years, of M.D. Glasg. Is quite destitute through recent death of husband and requires assistance whilst seeking suitable work. Voted £10.

L.S.A., aged 65 years. Broke down in health after the death of his wife at the end of a two years' illness and has consequently lost most of his practice and been obliged to leave his house owing to arrears of rent. Is given temporary shelter by an old patient and hopes to make a fresh start. Voted £10.

Daughter, aged 39 years, of late F.R.C.S. Has recently undergone an operation for tubercular disease of a large joint and is practically incapacitated. Relieved four times, £48. Voted £12.

Daughter, aged 40 years, of late L.R.C.P., L.R.C.S. Edin. Endeavours to support herself by nursing but finds considerable difficulty in obtaining cases. Relieved six times, £50. Voted £6.

Daughter, aged 54 years, of late M.R.C.S., L.S.A. No income and almost incapacitated by ill-health. Relieved eight times, £73. Voted £12.

Daughter, aged 61 years, of late M.R.C.S. Receives a small weekly allowance from two friends, but is unable to earn anything owing to permanent ill-health. Relieved six times, £66. Voted £12.

Daughter, aged 57 years, of late M.R.C.S. No income; supports herself by letting rooms and knitting. Health delicate. Relieved six times, £72. Voted £12.

Widow, aged 43 years, of L.R.C.P., L.R.C.S. Irel. Since husband's death has endeavoured to support herself by taking paying guests, but has had her furniture seized for rent and now contemplates emigration to Canada. Four daughters, but none able to help and two dependent. Relieved once, £10. Voted £2, and application to be further considered next month.

Daughter, aged 47 years, of late M.D. Edin. Is a daily governess, but at present has no post. Relieved twice, £10. Voted £5.

M.D. Aberd., aged 58 years. Quite incapacitated by lateral sclerosis and dependent on pensions from charitable institutions. Two children, aged 12 and 6 years. Relieved twice, £22. Voted £6.

Widow, aged 63 years, of L.R.C.P., L.R.C.S. Edin. Only income a small pension from a city company, and unable to follow any occupation on account of severe chronic rheumatism. Relieved twice, £16. Voted £10.

Widow, aged 43 years, of L.R.C.P. Edin., M.R.C.S. Eng. Supplements the help given by a stepson only earning a small salary by letting lodgings. Relieved twice, £24. Voted £12.

Widow, aged 70 years, of M.D. St. And. No income, and family only able to give slight help. Voted £12.

Daughter, aged 55 years, of late M.R.C.S. Mentally unfit to follow any occupation, and apart from a little help from a brother is dependent on three half-sisters who all have to earn their living. Relieved six times, £61. Voted £5.

Widow, aged 70 years, of M.R.C.S. Dependent on an old age pension and a daughter, who is a governess. Relieved five times, £62. Voted £12.

Widow, aged 43 years, of M.R.C.S. who for many years held a teaching post at a medical school. Endeavours to support herself by letting lodgings. Three children, all at institutions. Relieved once, £15. Voted £10.

Wife, aged 61 years, of L.F.P.S. Glasg. who has been in bad health for three or four years but has just obtained a ship's surgeoncy. Applicant lets lodgings but cannot make sufficient for maintenance. Relieved once, £12. Voted £1 and case to be considered again after further inquiry.

Daughter, aged 75 years, of late M.R.C.S. who was a surgeon in the Scots Guards. Was well provided for but lost most of her capital through the defalcations of the family solicitor and the rest through unfortunate investments. Now dependent on an old-age pension, with occasional help from relations. Relieved once, £18. Voted £15.

Widow, aged 56 years, of L.S.A. No income, and dependent on a son earning a small weekly wage. Relieved nine times, £102. Voted £12.

WATERWORKS IN HAVANA.—*La Prensa Médica*, a new medical journal which is published monthly in Havana under the editorship of Dr. Enrique Núñez, is very strongly of opinion that the subject of the water-supply should not be allowed to fall into the hands of private speculators, but should be carried out after full consultation with the medical practitioners of the capital, who are urged to form themselves into a committee for the purpose of impressing their views on the municipal authorities.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Moine, formerly inspecting medical officer in the French Military Medical Service.—Dr. Melchior Willim of Breslau, who married in 1880 a princess of the Royal Family of Würtemburg, who was obliged to resign all her dignities before being allowed to wed a bourgeois doctor. They have a son who is an ophthalmic surgeon.—Dr. De Forest Willard, formerly professor of Orthopædic Surgery in the University of Pennsylvania, Philadelphia.—Dr. James Nevins Hyde, professor of dermatology in Rush Medical College, Chicago.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 12, 1910.

The Practitioner and the Prescription.

THE article and letters[1] which we have recently published as to the rights of property or of control which exist, or which physicians might wish to see existing, with regard to prescriptions given by them to their patients call attention to a subject of real importance. The position is that conditions prevail in connexion with the property in and control over prescriptions which are undesirable in the public interest and in that of the medical profession; that these conditions can hardly be altered except by the intervention of the legislature; and that the likelihood of any effective legislative interference is remote. The undesirable conditions are not restrained or corrected by the law of copyright in any important degree. It is conceivable, and we believe that in the past it has been either attempted or threatened, that someone obtaining possession of books containing copies made by pharmacists of prescriptions dispensed by them, might fill a volume with prescriptions arranged under what he conceived to be appropriate headings for popular sale and distribution. To prevent the bringing out of such a work with the names of the prescribing medical practitioners attached to their prescriptions might present little difficulty, but it would be otherwise if no such ground of interference existed, and if it were necessary to depend upon establishing the copyright of individual physicians in prescriptions published anonymously. If such copyright does exist its ownership would no doubt be governed by the principles indicated by Mr. WIPPELL GADD, and illustrated by him from the analogous cases of the architect's plans, the photograph, and the analytical chemist's report. Without, however, going so far as to say that a physician's prescription is in no case a subject of copyright, we are of the opinion that it would be found difficult to establish the necessary element of original invention in many.

However, the danger of appropriation and publication in such a manner as we have suggested above is remote, or not likely to occur frequently, and the real question is whether any practicable means can be devised to prevent effectively the repeated dispensing of the same prescription to an unlimited extent either to the patient himself or to the friend to whom he may choose to give it. In referring to the patient's friend we have before us what we believe to be the by no means uncommon case of the man who says to another who has been telling him of his ailments, "I believe you are suffering from just what I had six months ago; I have got Dr. Blank's prescription, and I'll lend it to you. He's a first-rate man and he cured me in a week. Take it, my dear fellow, and welcome; it will save you two guineas." We have cited here men as the offenders, but women are every whit as meanly imprudent. The practice indicated is an objectionable one from the point of view of the medical practitioner and also from that of the members of the public who are prone to try dangerous experiments upon themselves. As Mr. WIPPELL GADD puts it: "In the best interests of the patient, the use of the prescription should be limited, as the very efficiency which it may possess in the morbid condition of the person for whom it was written may render it noxious or even toxic to the same person when in a state of health, and still more so to other persons of different age, sex, or habits of life." If, however, we concede that it is a practice not affected by the law as it stands, and consider the possibility of devising some means of interference which Parliament might reasonably be expected to grant, we must bear in mind the general policy in such matters of the Government under which we live. The law does not forbid the sale of any supposed cure for any existing or imagined disease, or the giving of advice of a medical character either gratuitously or for reward by any person. The prescription which a medical man may have written for a patient suffering from some form of dyspepsia which he has carefully diagnosed, may be entirely unsuited for the ailment of some other person whom he has never seen or heard of. It is, however, not likely to do him more harm than some advertising quack's "liver pill" or "kidney purifier," which the public is free to purchase and consume in any perilous quantity, and there is, therefore, no very tangible ground for inviting the legislature to interfere with the liberty of the subject in one instance more than in the other. If, however, Parliament were ever induced to remodel the whole of the law relating to the practice of medicine, and to check for the sake of the public the practice of the quack and the advertising "remedy"-monger, then it might be possible to frame regulations which would check, if they could not prevent entirely, the misuse of prescriptions in the manner indicated.

Mr. WIPPELL GADD has suggested recourse to the disciplinary powers of the Pharmaceutical Society, which might be asked to remove from its membership, as for an act subversive of the interests of the Society, a pharmacist dispensing a prescription if in so doing he disregarded a direction written on the face of it by the prescribing physician. This plan could be adopted without any statutory change by means of a by-law which is already in existence. As an alternative it is often suggested that prescriptions should be written under a printed heading to be filled up by the medical man with dates or other particulars, these being worded so as to limit its use; and the same heading might contain a warning easy to be read and plainly worded to the effect that the prescription is written to meet the case of the individual named upon it and is not likely to prove beneficial to anyone else. The whole question, however, is one of difficulty. Its solution by means of legislative change has hitherto not appeared within the range of practical politics. But a joint committee is now

[1] See THE LANCET, Oct. 1st, pp. 1019, 1030; Oct. 15th, p. 1168; and Oct. 22nd, p. 1241.

sitting of medical men and pharmacists appointed by the British Medical Association and the British Pharmaceutical Conference respectively, for the purpose of considering the relations as regards prescribing and dispensing of the two professions, and also the traffic in secret and quack remedies. Two members of this committee are members of the English Bar, so that the questions involved will be discussed with a due appreciation of the points of law involved.

Rapidity in Operating.

THE introduction of the employment of anæsthetics into surgery had results in addition to the prevention of the feeling of pain by the patient, which was the essential object of the invention. One great by-result was the extension of the operation to parts of the body which had previously not been considered accessible. But the introduction of anæsthesia had another effect, for it led to the lengthening of operations, as the surgeon had no longer to take into consideration the infliction of pain on the patient, and the speed of operating definitely decreased. In the ancient writers on surgery there is little reference to speed in operating. CELSUS appears to have been the first writer on surgery to mention the speed of operating, and he lays stress on the importance of not being moved by pity for the patient's pain to hurry the operation, and doubtless he meant that the due carrying out of the work required is of more importance than mere speed. AMBROISE PARÉ expressed himself as in favour of rapid surgery, but only when joined with experience. HEISTER in the seventeenth century claimed that the operator should be rapid but should not hurry. MORAND in 1772 urged that the phrase, "cito, tuto, et jucunde," should apply not to medicine only but to surgery also.

In the 50 years preceding the introduction of anæsthesia there was a tendency to increase the rapidity with which operations were performed, and in the hands of a few surgeons, especially skilful and dexterous, the rapidity with which an operation, even a major operation, could be performed was marvellous. Perhaps there was none who surpassed ROBERT LISTON in this respect, and when he performed in 1846 the first operation in this country under anæsthesia he amputated a thigh in less than two minutes from the commencement to the finish of the operation, for he did not expect much from the hitherto untried anæsthetic. The natural tendency, when the fear of causing pain to the patient was no longer present to incite the surgeon to rapidity, was to prolong the operation, and there has been a proneness since the introduction of anæsthetics rather to despise the rapidity with which the surgeons of a past generation operated. This feeling may go too far. There may have been a tendency at one time for surgeons to pride themselves on rapidity and to a certain extent to disregard the effect on the patient, but there can be little doubt that the tendency of the present day is to err on the other side. Many surgeons are far too slow at operations. They devote an unnecessary amount of time to small unimportant details, so that the duration of the operation may be twice that which was really needed, and the patient suffers. When the older surgeons performed their operations with lightning celerity they were thinking mainly of the feelings of the patient, but the rapidity with which the operation was done had another and even more important beneficial effect. The duration of the shock to the patient was greatly decreased. Nowadays, when the patient is under the influence of an anæsthetic, that portion of the shock which was directly due to the damage to the sensorium caused by painful impressions has been abolished, but the shock which is independent of sensation remains, and much of this is directly proportional to the duration of the operation. Even at the present time speed in performing an operation is no unimportant factor in the result. In so many cases the success or failure of the operation, its termination in the life or the death of the patient, rests on a very narrow edge, and small influences may precipitate the result on one side or the other. We have no doubt that lives may be, and are, lost by unnecessary dawdling during the operation. Even the prolongation of the anæsthesia is in itself productive of harm, and may help, in its turn, towards an unfavourable result.

We have quoted some of the references here given from an interesting article by Dr. R. T. MORRIS of New York, in "The Fourth Era in Surgery," in which he advocates strongly the need for rapid operation, and his earnest advocacy is, we think, needed at the present time. Speed is not everything. Accuracy is essential, and the operation must accomplish what it is intended to do. If a tumour and its adnexa are to be removed, removed they must be. If a limb has to be amputated, that which is necessary must be done, but much time may be wasted in unnecessarily doing more than requires to be done. All prolongation of an operation, even though it may be only measured by minutes, is an unnecessary prolongation, and though it may not lead to a fatal event its influence must be harmful. Safety lies in so adjusting the speed and the accuracy of an operation that neither is sacrificed. Much of the shock produced by an operation is beyond our control, but much rests within our hands, and that portion of the shock which is directly due to the length of the operation is that which it is in our power especially to minimise.

The Story of Pharmacy.

MODERN medicine and research are so fruitful, complicated and engrossing that medical men have on the whole little time for studying the records of the past, and the subject of the history of medicine and her allied sciences has been much neglected. But of late years a great stimulus has been given to the study of medical history by the foundation of the Fitz Patrick Lectures of the Royal College of Physicians of London, as those must feel who are reading in our columns the erudite and distinguished discourses of Sir CLIFFORD ALLBUTT. In addition to the Fitz Patrick Lectures, which have been delivered in previous years by Dr. J. F. PAYNE, Dr. NORMAN MOORE, and Dr. LEONARD GUTHRIE, we have seen produced recently such papers and essays as those of Dr. GUTHRIE on the Medical History of John Evelyn, of Mr. D'ARCY POWER on the Medical History of Pepys' Diary, together with his scholarly edition of John Arderne, and of Dr. RAYMOND CRAWFURD on The Last Days of Charles II. There are also various memoirs by the Regius professors

of medicine at the two Universities of Oxford and Cambridge, such as Professor OSLER'S papers on LINACRE, SERVETUS, and Sir THOMAS BROWNE, and those of Sir CLIFFORD ALLBUTT on Medicine and Mediæval Thought, to name only a few. Nor must we forget Dr. R. O. MOON'S interesting little book on the Relation of Philosophy to Medicine. All this work, and we make no attempt to compile a comprehensive catalogue of it, has begun to familiarise medical men with medical history, and into the category of such books fall the valuable volumes on pharmacy[1] by Mr. A. C. WOOTTON, who died before his work made its appearance. The proofs were revised for publication by his friend Mr. PETER MCEWAN, the editor of the *Chemist and Druggist*. The book, whose title, "Chronicles of Pharmacy," is, as the author acknowledges in his preface, somewhat misleading, was originally intended "to trace back to their authors the formulas of the most popular of our medicines, and to recall those which have lost their reputation. ..... But I have not succeeded in this design." Instead, however, we have a book full of learning, of the results of laborious research, of out-of-the-way knowledge, and of facts bearing upon a universally diffused aspect of human nature, in which incredulity and trustfulness are singularly mingled.

From the dawn of history the universal desire of the sick has been to "take medicine." And medicine, it should be remembered, does not in its strictly etymological meaning imply simply a drug or an application, but any form of treatment applied or supplied by the medicine man—i.e., the wise man or he who knows. The Latin words, *mederi*, *medicus*, *medicina*, go back to a root meaning "wisdom," and the same root appears in Medea, the witch or the wise woman. The Greek word from which our word pharmacy is derived—namely, *φάρμακον*—means a charm or a counter charm, and is etymologically connected with a Lithuanian word, meaning "to sing," like the Greek *ἐπαοιδή*. The earliest method of treatment, whether for good or evil, was a song, such as the well-known example in the Odyssey, XIX., 457, where the blood from ODYSSEUS' wound was stayed by an *ἐπαοιδή*; and the power of music to charm away physical ill is a belief to this day among primitive peoples. The knowledge of drugs and medicinal herbs was probably acquired much later in the history of the human race than when medicine consisted chiefly in magic. As to how it was first obtained it is useless to speculate, but once the knowledge had been acquired that certain plants and herbs possessed certain properties the beginnings of pharmacy were at hand. The extraordinary collection of animal remedies in which our ancestors delighted most likely arose from the doctrine of similars. Thus, the flesh of a lion made the eater brave; the fox was a swift animal, therefore its lungs were good for diseases of the lungs, and so on. But in some of the prescriptions there was a certain amount of sense and sound physiology, accidental though this may have been. Thus, a favourite mediæval treatment for dropsy was for the patient to drink his own urine, and it is not so many years ago that urea was introduced as a diuretic. The essence of urine, which Mr. WOOTTON quotes Madame DE SEVIGNÉ as taking, probably owed its virtues to ammonia salts. With all the changes in medicine and pharmacy, the names of some preparations have remained practically the same, for we still use the terms cathartic, trochiscus, cataplasma, and emplastrum, although such names as hiera, arteriaca, and tiriaca are practically obsolete. ISIDORUS HISPALENSIS, a seventh century encyclopædist, gives an account of medical preparations as existing in his time and why they were called by varying names. The passage is in the fourth book of his "Liber Etymologiarum." A large number of pharmaceutical preparations formerly began with the word "dia," which has survived to this day in the term diachylon. "Dia" meant from, or of, and ISIDORE gives examples such as "diaspermaton," which is so called because it is made from seeds. As time went on it came to be considered that the value of a preparation consisted chiefly in the number and variety of the drugs which it contained, and down to 1746 the Four Officinal Capitals were still recognised: they were Mithridatium, Venice Treacle, Philonium, and Diascoridium, which contained upwards of a hundred ingredients. After reading of such amazing prescriptions it is with satisfaction that we learn they are now represented by pulvis catechu compositus, which, however shorn of dignity, may still compare in value with its predecessors.

No one in reading these records of the past, to which we have just made completely desultory reference, can fail to be struck by the complicated composition of ancient remedies, a complication which naturally went hand in hand with the idea that medicine was a mystery which should not be communicated but to the initiated. Nowadays the tendency is all the other way. The simplification of pharmacy and the mass of "elegant" and easily-taken pharmaceutical preparations has certainly been no small factor in the fashion of self-medication, and the most powerful drugs can be and are daily bought in open market by the public, who drug themselves and their friends with a sublime disregard for any untoward circumstances which may ensue. That the medical profession should be a loser pecuniarily by this custom is at least one of the evils arising from the practice. It is also open to question whether the tendency in modern prescribing to set aside the canons of the older method regarding adjuvants, correctives, and the like can be altogether approved. Polypharmacy is an abomination, but it is a fact that a judicious combination of drugs often acts far better than any individual drug employed by itself. Dover's powder, Griffith's mixture, Gregory's powder, and black draught are examples of old-fashioned pharmacy which have held their ground against all adversaries. A study of Mr. WOOTTON'S book will remind the thoughtful reader that if there was much in the practice of our ancestors to be avoided, there was also much to admire.

[1] Chronicles of Pharmacy. By A. C. Wootton. London: Macmillan and Co., Limited. 1910. Two vols. Pp. 428. Price 21s. net.

THE Richard Middlemore Lecture for 1910 will be delivered at the Birmingham and Midland Eye Hospital on Thursday, Dec. 1st, at 4 P.M., by Mr. Sydney Stephenson, ophthalmic surgeon to the Queen's Hospital for Children, London, who has taken as his subject, "The Consequences of Eye-Strain." All qualified members of the medical profession are invited to be present.

Annotations.

"Ne quid nimis."

THE FIFTH INTERNATIONAL CONGRESS FOR THE BLIND.

THERE are many scientific congresses held which supply a pretext for a journey, and of all such congresses it would be difficult to find one with more inducements to medical men than an international congress to consider the amelioration of the lot of the blind. The Fifth International Congress with this object is to meet at Cairo from Feb. 20th to 25th, 1911, under the distinguished patronage of His Highness the Khedive. The business sittings will be held at the University buildings under the presidency of the Minister of Foreign Affairs, but the Congress will be inaugurated by the Khedive in person. There are eight questions inscribed for discussion, namely: 1. When can a person be considered as blind? 2. How to prevent the spread of ophthalmia? 3. Has Esperanto been of any use as a universal language for the blind? 4. What is the best method applicable to all languages of teaching stenography to the blind? 5. What are the best trades and professions for the blind? 6. What are the best games and bodily exercises for blind school children? 7. Can the Braille method be improved? 8. Could the blind be employed in telegraph and telephone exchanges? These questions will be discussed in the mornings, and only short speeches are to be allowed. Reports must be sent in by Dec. 1st, so that they may be printed before the Congress meets. In the afternoons the members of the Congress will be conducted to the Museum of Egyptian Antiquities, to the mosques, to the Delta barrage, to the Arabic Museum, and the mosque of El-Azhar. There will be an excursion to the Pyramids of Giza and a lunch and a banquet. The entrance fee is the usual one of 20 francs, or 16*s*., and intending members should write to the secretary-general of the Congress at the University buildings. The card of membership entitles the bearer to a 50 per cent. reduction of the fare on the Egyptian Government railways, free admission to museums, monuments, and reduced rates at some hotels and on some of the steamships from Europe to Egypt. This then is an excellent opportunity of seeing Egypt under economical conditions, and at the same time of rendering some service to the blind. Indeed, those who are seeking a pretext to avoid the rigours of a northern winter will be tempted to persuade themselves that they have taken a special and life-long interest in the conditions of the blind. Egypt, of all countries, suffers most from eye diseases and blindness, therefore a visit to that country will create interest in the question among those who had not thought much about it before. We therefore wish the Congress every success, both as to the outcome of its deliberations for the amelioration of the conditions of the blind and as to the enjoyment of its members.

SCENT IN TOBACCO.

WE may well inquire on what ground the great bulk of the tobacco smoked by the people is scented. Foreign flavours are present sometimes in nauseating excess and the fragrance of pure honest tobacco is to most smokers a mere memory. We are quite prepared to be told that the public like, or even prefer, a scented tobacco, and therefore the trade must be ready to meet the peculiarities of its customers. If that is the case, the palate of the public, for some reason or other, must have gone astray, which is a pity, since a vitiated taste quickly invites bad trade practices. It is pretty certain, at any rate, that if the real demand of the smoker is in favour of a highly scented tobacco it matters very little what the quality of the tobacco is. He does not seek the pleasing qualities of the tobacco itself, unadulterated, unoiled, unscented: he is satisfied with an added scent which is not due to tobacco at all. To him tobacco merely serves the rôle of a smouldering vehicle, his choice of a brand being based upon a scent which is foreign and artificial. Depraved taste may be traced, we think, to the action of the trade in the first instance, and to the meek and weak attitude of its patrons. The matter is one of some importance, because a consideration of it naturally suggests the possibility of foreign materials in tobacco which may give additional risks to the smoking habit. The word adulteration may be objected to, but it is difficult to avoid its use in view of the fact that large quantities of foreign scents, besides oils, glycerine, formaldehyde, or other preservatives, are added to tobacco. Our view is that it would be better if the tobacco manufacturer kept no account with the drysalter and chemist.

PROGRESS IN KOREA.

UNTIL the last few years but little was generally known about the "Hermit Kingdom" of Korea, called by its inhabitants the land of the "Morning Calm." Since the conclusion of the Russo-Japanese war the vigour and activity of the Japanese nation have been manifested in many ways, but perhaps in none more striking or more beneficial than in its relations with Korea. For many years previously Japan had been trying to induce her neighbour to adopt modern methods of administration, and in 1905 a convention was concluded by which a Japanese Resident General was stationed in Korea, with practically complete control of the administration of the country, Japan undertaking to maintain the welfare and dignity of the Korean Imperial family. Since that date the progress of the country has been remarkable. In place of an almost universal system of corruption in the central and local governments, with complete stagnation as regards productive industries, improvement of means of communication, education, and sanitation, we now find a complete change. The policy of the "open door" has been adopted; the mineral resources of the country are being developed with the aid of foreign capital; railways, roads, and bridges have been constructed; a postal, telegraph, and even telephone system installed, including also a complete system of post-office savings banks. Nor has the public health of the country been neglected. Within a few months of taking over the internal affairs of the country vaccination was introduced, some 50 Japanese physicians being distributed through the various provinces to carry this out; the number of small-pox cases has decreased, but it is too soon yet to form any accurate estimate of the improvement that has been effected. During the last year a large distribution of vaccine prepared at the Government laboratory has been made; and female vaccinators are being trained to meet the objection on the part of Korean women to contact with strangers of the male sex. General sanitation in Korea had been absent. There was no system of refuse disposal, and well waters were everywhere polluted. Municipal organisations were set on foot, that at Seoul, the capital, started in 1907, being a joint undertaking of the municipality and the Japanese settlement. It seems that already a considerable improvement has taken place, the city presenting quite a new aspect. In the same year several charity hospitals were established. A Government hospital and medical school on a comparatively large scale have been inaugurated at Seoul, the most healthy location on Madzusan Hill having been selected for its site; provision has been

made for gynæcological cases, diseases of the eye, ear, and throat, in addition to ordinary hospital wards; also isolation accommodation has been provided for infectious diseases; a charge is made to those who can afford to pay, and free treatment is given to those who cannot. A medical school is attached, the staff consisting of Japanese and Korean medical men and one American physician. At the present time waterworks are in course of construction for Chemulpo, the port of Seoul, and at Fusan, on Broughton Strait, the principal port of communication with Japan. These undertakings are expected to reach completion at the end of the present year. Perhaps no more striking example of material improvement on scientific lines, skilfully designed and energetically carried out, has ever been afforded, even in the history of British or American enterprise. We are justified in hoping that the state of Korea will now in great measure be free from the devastating plagues that are the common lot of many oriental populations at periodic intervals. It is no exaggeration to say that civilisation owes a debt of gratitude to the Japanese nation for using their strength not tyrannously, but for the good of the people committed to their charge.

TOXICOLOGICAL TESTS FOR COLCHICINE.

THE small amounts of organic poisons recoverable from bodies after death in some cases of poisoning render the tests for these substances and their delicacy matters of very great importance in medico-legal practice. Some vegetable poisons, such as strychnine, veratrine, atropine, and physostigmine, are more or less satisfactorily recognisable by chemical tests alone, whereas for others, such as curarin, muscarin, nicotine, aconitine, abrin, and ricin, chemical reactions are not by themselves sufficiently characteristic for small quantities, and it is necessary to have recourse to biological tests. For the chemical tests a larger quantity and a greater degree of purity are necessary than is the case for many biological reactions. Colchicine is a substance with very definite toxic properties, and it is therefore of importance to study it from a toxicological point of view. It gives certain chemical tests, which are characteristic if a sufficient quantity of the substance is available. An interesting paper on this subject appears in the *Archiv für Experimentelle Pathologie und Pharmakologie*, Vol. LXIII., p. 356, by Dr. Hermann Fühner. He finds that colchicine occurs in varying quantities in different parts of the colchicum plant. It is most abundant in the seeds, where it is present in quantities varying from 0·2 to 0·4 per cent. The corm contains from 0·08 to 0.2 per cent., and the flowers and leaves from 0·01 to 0·03 per cent. In regard to the toxicity of colchicine 3 milligrammes in a single dose have proved fatal in man. Herbivora are more resistant to its action than other animals. Jacoby gives the toxic doses by subcutaneous injection of crystallised colchicine (containing 30 per cent. of chloroform) as 7 milligrammes for rabbits, 1 milligramme for dogs, and ½ to 1 milligramme for cats per kilo of body weight in each case. Frogs show an extraordinary resistance, since they can bear as much as 60 to 100 milligrammes. This is, however, only true of pure colchicine. Commercial colchicine often contains a substance called oxy-dicolchicine, the result of the action of light and air upon it, and frogs are more susceptible to this substance. Certain observations by Obolonski and Ogier show that colchicine resists for several months the putrefactive processes occurring in dead bodies containing it, a point of considerable importance medico-legally. It is, however, stated that certain putrefactive products may show chemical colour reactions similar to those given by colchicine. Dr. Fühner therefore maintains that it is necessary to apply biological tests as well as chemical in order to demonstrate conclusively the presence of small quantities of this substance. The most important colour reaction of colchicine is that given with concentrated nitric acid; violet and green colours appear, then gradually fade and pass into yellow. This yellow solution with an excess of caustic potash gives a cherry- or orange-red. Dr. Fühner describes a modification of this reaction which is sensitive for quantities between 1-100 and 2-100 of a milligramme. The solution containing colchicine is evaporated to dryness in a glass and the residue is dissolved in three drops of concentrated sulphuric acid, which gives a yellow solution. A glass rod which has been dipped in concentrated nitric acid is drawn through this solution, when the characteristic violet colour appears. If only small quantities of colchicine are present the colour soon fades completely. Caustic soda or potash is then added, and at the junction of the two fluids a cherry-red colour appears. Zeisel's ferric chloride test was found to be less delicate than this; however, a modification employed by Dr. Fühner gave satisfactory results, but its limit of sensitiveness lay between 2 and 5 milligrammes. The method consists in heating from 3 to 5 cubic centimetres of the solution to be tested with five drops of dilute sulphuric acid in a hot-water bath for half an hour, and then adding ferric chloride solution, drop by drop, so long as the green colour which results becomes darker. The fluid is then cooled and a third of its volume of chloroform is added. On shaking, the chloroform becomes coloured from yellow to garnet-red, according to the amount of colchicine present. After injection of colchicine into cats symptoms do not appear until several hours, and death does not occur until at least six or seven hours after injection. For the small quantities recoverable from bodies after death Dr. Fühner suggests the use of white mice, the fatal dose for animals between 15 and 20 grammes weight being between 1/50 and ½ a milligramme. The symptoms of poisoning by colchicine consist in sickness and diarrhœa, death resulting from respiratory failure. Dr. Fühner also found that the susceptibility of frogs to this poison was much increased by raising the temperature at which they were kept.

QUARANTINE AT MALTA.

FROM statements published recently in the *Malta Herald* it appears that serious complaint has been made against the Government for conniving at evasion of the existing quarantine regulations by certain officials and privileged persons. Special prominence is given to the case of an English military officer and his wife who travelled from England through Italy by rail to Naples, where they took ship for Malta. On arrival at their destination they at once received free *pratique*, although their fellow passengers, including at least one Maltese officer, had to comply strictly with the five days' quarantine imposed on all arrivals from Naples. The Maltese opinion is that this officer and his wife, by evading the forced detention for the prescribed period, exposed the inhabitants of the island to the serious risk of having cholera introduced among them. In this view, however, we are unable to concur, for we do not believe that cholera can be kept out of Malta or anywhere else by quarantine. It is to perfect sanitation that we must look, so that if the germs of the disease are conveyed to the island they may not find a soil on which to multiply and produce their epidemic crop. Five days' detention, for instance, will not prevent a chronic carrier of cholera from bringing with him the microbes of the disease into Malta, but proper sanitation will prevent his discharges from contaminating water and food-supplies. Hence we believe that the modern method of medical inspection of fresh arrivals from infected ports, together with the taking of names and addresses to which the passengers can be

followed, and their health supervised if necessary by the local authority during the necessary period, will meet all requirements—so long, that is, as the sanitary circumstances of the locality are satisfactory. We are well aware that these precautions just mentioned, which have been now adopted by most of the Great Powers, are characterised in Malta as "derisory measures" in which no confidence can be placed. Apparently it is still believed by the Maltese people that cholera is carried about the person or by the clothing, and that detention, with all its discomforts on board ship or in a lazarette, followed by fumigations of wearing apparel, is absolutely necessary to prevent the spread of the disease. The Malta Government, it may be mentioned, when asked for its explanation of the reported evasion of the quarantine regulations by the officer and his wife, replied through the Acting Lieutenant-Governor that it reserved to itself the right to deal with such cases on their merits according to circumstances, and that the presence of the officer in question was urgently needed in connexion with his military duties. It cannot be denied that in some few instances medical inspection and the taking of names and addresses may not suffice, but for these cases special provision can be made. Dirty deck-passengers, for example, or panic-stricken pauper refugees fleeing from a cholera-infected district, might require special attention before being allowed to land on the island. Such persons probably would not be in a position to furnish trustworthy addresses to which they could be traced or where the local authorities could keep them under surveillance. For these, therefore, stricter measures may be needed, and for them some detention might be desirable. But for military officers, public officials, professional men, well-known residents, or visitors of responsible position, proceeding to addresses that are well known to the authorities, more particularly when such fresh arrivals have travelled first-class and have merely passed *en route* through an infected port, having had no chance of contracting infection, we regard five days' detention as not only wholly unnecessary, but also as vexatious and valueless. We trust, however, that the day is not far distant when the Maltese people, who have hitherto been too prone to panic, will see the folly of their present ways; and we hope that they will seek salvation in sanitation, forsaking finally the exploded and obsolete methods of mediæval quarantine.

TREATMENT OF HÆMORRHAGE IN THE NEW-BORN BY DIRECT TRANSFUSION.

IN the *Boston Medical and Surgical Journal* of Sept. 15th, Dr. F. S. Newell has reported a remarkable case in which hæmorrhage in the new-born was treated by direct transfusion. A female infant, the second child of healthy parents, appeared to be normal for the first 24 hours after birth. She then vomited half an ounce of bright-red blood. Three hours later, at 8.30 P.M., she vomited about 2 ounces of blood. Two other hæmorrhages occurred, and at 9.30 a large motion of meconium mixed with blood was passed. She was pale, but apparently in good condition, the pulse ranging from 130 to 135. It was thought probable that the hæmorrhages would not stop spontaneously and that whatever was to be done had better be done while the child was in good condition. It was decided to perform direct transfusion from the child's father, which was done by Dr. J. C. Hubbard. Owing to the small size of the child's veins the operation was difficult. The left popliteal vein was first exposed, but was found to be too small to permit union with the father's radial artery. The internal saphenous vein was then dissected out, and with considerable difficulty union was secured by the Elsberg cannula. The connexion was allowed to persist for 25 minutes, and the wounds were sutured and sterile dressings were applied. During the transfusion the child passed three large motions containing old and bright-red blood, but after this no further hæmorrhage occurred. The operation was so difficult that it took two hours before connexion of the vessels was established. After the operation the child's state much improved, the colour and the pulse being better. On the following day she seemed weak and listless, but otherwise was in a satisfactory condition; the temperature was 103° F. and the pulse 120. On the third day after the operation the temperature fell to normal. As the mother had no milk the child was fed on whey, which was gradually increased in strength until a full-strength milk-whey mixture was given at the end of three weeks. She was discharged from the hospital five weeks after delivery, weighing 9 pounds. Dr. Newell emphasises two points—the great difficulty of performing transfusion in the new-born on account of the small size of the vessels, and the prompt checking of the hæmorrhage as soon as the effect of the father's blood was noticeable. It was extremely difficult to keep the wound in the groin from being constantly contaminated by urine and fæces. Recorded cases seem to show that early cases of hæmorrhage in the new-born can be successfully treated by transfusion. On the other hand, the results have been unfavourable in cases of late hæmorrhage—i.e., in those occurring after the first week. This points to a pathological difference between the two conditions, and suggests that the late cases may be due to some septic process, in which case transfusion cannot be expected to be successful. The difficulty of the operation is such that it should be undertaken only by an expert surgeon.

"PERSECUTION MANIA."

A FREQUENT correspondent writes from Rome:—Only the pen that described for us Quasimodo's behaviour from the height of that basilica towards the tumultuous crowd below could do justice to a recent "sensation" in Rome—the siege of a madman in his own house, from which, for well-nigh 48 hours he defied the police, the fire brigade, and even the military to dislodge him, keeping up an intermittent discharge of musketry on the besiegers and the crowd that thronged the street, till at length, the water-hose having been plied in vain, he was "fumigated" into impotence like a wild beast in its cage, and consigned, in a strait waistcoat, to the "manicomio" of the Santo Spirito! Francesco Moncada, aged 45 years, a pleader of some distinction at the Roman bar, was a fair specimen of the Sicilian physically, intellectually, and morally, with the characteristics "good and not so good" of his fellow-islanders. With his wife and three children he had lived for some years in the Via Ottaviano, but of late his professional practice began to dwindle, to the manifest discomfort of his family and the depression of his spirits. On Sunday, Oct. 9th, he betrayed the first symptoms of the "mind diseased," announcing that he had been the prime agent in bringing about the fall of the Portuguese monarchy and that, from one minute to another, he was expecting the telegram which was to proclaim him President of the Republic. As the time wore on, he protested that there was a plot to get rid of him by poison, in dread of which he kept the house, wandering from room to room, armed with rifle, revolver, and "bastone animato" (sword stick). His wife and children tried to calm him, but in vain. He became furious and ordered them out of the house, suiting the action to the word. This was on Monday evening (the 10th). Madame Moncada had by this time informed the head of the Pubblica Sicurezza, who happened to be a friend of the family, and who tried by addressing him through the keyhole to bring him to reason,

but without effect. On the following day Signor Moncada pushed a letter under the door, which, on being picked up on the landing, was found to be addressed to the head of the Pubblica Sicurezza, and to convey among a tissue of rambling phrases the announcement that he had been condemned to death and that his life was threatened by the "rabble." The news by this time had spread far and wide that a dangerous lunatic had barricaded himself in his own house and the inevitable crowd was thronging the street below when suddenly it scattered in all directions to the cry, "il pazzo spara" (the madman is firing), women fainting, and the shops hastily shutting up as the "besieged resident" continued to discharge his rifle. Among the fallen was picked up a woman with a shot through the right temple, from which she died shortly after removal to the hospital, while two other women were hit and seriously hurt, and a carabineer had his coat perforated by a bullet. The fire brigade after perforating an upper floor of the tenement at various points pumped in jets of water which gradually made upon the madman, but still he was able to discharge rifle and revolver from the window, which he continued to occupy all night. Evidently the water did not incommode him, and so another plan was adopted. Strong fumes of sulphur from various holes in the roof were projected into the apartment, till through a chink in the wall he was seen to become stupefied, recovering himself, however, from time to time so as to be still "dangerous to be approached," as was found by two of the police who made their way into the room and barely escaped a couple of shots. Before he had time to reload, however, they threw themselves upon him, wrested his rifle from him, and after a desperate struggle overpowered and secured him. On appearing in the Via Ottaviano with their captive they were loudly cheered by the immense throng of people, through whom they passed with some difficulty, in a motor-car to the Santo Spirito. There, under treatment, the man has since come to himself, and on being told the incidents of the 48 hours of siege was filled with astonishment, protesting that he had "never fired a shot"! In fact, his mind was a *tabula rasa* for all that terrible time. Later in the day it was found advisable to keep him still in the "camicia di forza" (strait waistcoat) and to place him in a ward for the "furiosi" (violent patients), previously to removing him for further treatment to the Asylo Provinciale. No such case has been recorded in Rome since 1870, and that on a less tragic scale; the case, to wit, of a Papal Zouave who, under a similar hallucination, barricaded himself in a room in the barracks of the Campo dei Fiori from which he was not extricated till he had fired 50 rifle shots and wounded, though not fatally, many of his comrades.

VIEWS UPON HÆMOGLOBINURIA.

THE conditions in which hæmoglobin is passed in the urine have for many years attracted considerable attention. The pathogenesis especially has given rise to much discussion, and many theories have been propounded to account for the destruction of the red blood corpuscles. The disease is described briefly in text-books on general medicine, and numerous contributions on the subject are found scattered through medical literature. We have received a small work with the title "Hæmoglobinuria," by Dr. A. E. L. Charpentier,[1] in which an excellent *résumé* of the present knowledge in reference to the disease is given. Dr. Charpentier bases his observations on four cases of paroxysmal hæmoglobinuria which were under his own care, and in addition he has made a thorough search for the experience and conclusions of other writers as given in various medical publications. He adds to his book a comprehensive bibliography which should be of assistance to those who are interested in the many aspects of this morbid condition. After a careful review of the principal investigations which have been made more particularly into the symptomatology and pathogenesis of paroxysmal hæmoglobinuria, Dr. Charpentier gives a summary of the conclusions at which he has arrived as follows. He contends that a paroxysm of hæmoglobinuria occurs in a man whose blood is altered by syphilis, malaria, or some other condition, causing his blood to contain a potential toxin. The toxin in the serum consists of two parts—an intermediary body and complement, which only becomes active at a lowered temperature and subsequent body heat. Dr. Charpentier then remarks that some authors maintain that in these patients the circulation is slower than normal, and they have greater difficulty in keeping up the surface warmth; hence, on exposure to cold, the blood in the skin capillaries becomes cooled, a certain amount of stasis also takes place, when the complement and intermediary body unite with the corpuscles, which immediately undergo a rapid phagocytosis, the hæmoglobin being set free in the vessels. He thinks it is probable that the exposure to cold of the skin also causes the arterioles to be constricted by means of the "vaso-motor arc," and at the same time it is likely that either the presence in the blood of the toxin or of the free hæmoglobin will influence the system at large by means of the hormones. If the free hæmoglobin is above a certain proportion, the symptoms of hæmoglobinuria of varying intensity are induced, including the passage of hæmoglobin through the kidneys. Dr. Charpentier then points out that in these processes an enormous number of erythrocytes are destroyed, but are very rapidly reproduced. The kidneys, in excreting the hæmoglobin, become congested by the irritation, so intensifying the symptoms. The amount of pigment and urea is largely increased by the hæmolysis, and also adds to the disturbance of the functions. Warmth and rest, he says, allow time for the kidneys to recover, and probably for an antigen to form, when the hæmoglobin is excreted and the organs resume their natural functions. This little volume contains much that is interesting upon rather an obscure and rare condition, and Dr. Charpentier has rendered a service to medical literature in collecting and arranging the material which has hitherto been so widely scattered in books and publications in many countries.

[1] London: Baillière, Tindall, and Cox. 1910. Pp. 111. Price 3s. 6d.

THE SANITATION OF MADEIRA.

Dr. Michael C. Grabham, author of "The Climate and Resources of Madeira," writes us the following note which will be of interest to many of our readers and their patients:—The outbreak of typhoid fever which, it may be remembered, happened during the height of last season at Madeira, subsided as mysteriously as it commenced, no fresh case having been notified since the early days of the month of March. It will therefore be reassuring to both the visitors who from now onwards crowd the hotels and villas of these mountain slopes, and to their friends at home, to know that the island is once more healthy and inviting, and moreover, that drastic improvements have been accomplished during the recent months. New drains, new kitchens, and food-storage arrangements figure prominently among the latest developments, but pre-eminently to be mentioned is an adequate supply of mountain water, drawn in iron pipes at an elevation of 3000 feet from a region far above cultivated ground and human habitations. Messrs. Reid, the principal proprietors, have also started a special dairy for the supply of milk to their hotel guests which will add to the general security against disease. It is important to add that the new Republican *régime* has been accepted locally with even less

excitement than is usually evoked by political party change, and that the claims of Madeira, long neglected, will now be pressed upon the new Executive in the international interest of the place as a health resort, whose winterless and perennially vernal climate has now been brought within three days' journey of England by the sumptuous liners of the Union Castle Company. The overflowing revenue and prosperity of Madeira are truly due to these influences, and they cannot be too sedulously fostered in the interest of Portugal. Latterly Madeira has been by no means frequented by health-seekers exclusively, but the island is becoming more and more the resort of the tired and overworked—not of the average tourist, but of those to whom complete intellectual rest is impossible at home, who desire light and sunshine, and who seek distraction in fresh interests and new environment.

COCOANUT "MILK."

NOT a few people have wondered what kind of stuff the "milk" of the cocoanut is. The inducement held out to buy the nuts or "shy" for them is generally that they are "all milky." Recent analyses, however, have dissipated the delusion that the fluid has anything in common with real milk. It contains only 4 per cent. of solids, consisting chiefly of sugars 2·8 per cent., the balance being made up of mineral matter and tartaric acid. It is interesting to record that more than half of the sugar present is mannitol, the sweet principle of manna which is sometimes found also in wine as a product of normal grape sugar. The question has been discussed as to whether it would be profitable to extract the cocoanut water for the sake of its cane sugar, but as this amounts to only $\frac{1}{10}$th per cent. the process would not be commercially successful, in spite of the water being a waste product. Even if the water contained 5 per cent. of sugar, as some specimens appear to have shown, the recovery of this amount would be unprofitable. The juice of the sugar cane yields nearly 20 per cent. of sugar.

MATERNAL INFLUENCE IN MENTAL DISORDERS.

IN the annual report of the East Sussex County Asylum Dr. F. R. P. Taylor, the medical superintendent, records, as a result of inquiries made into the family histories of patients under his charge, that in 247 of 277 direct admissions a family history was obtained, and that heredity was ascertained in 28 per cent. of the males and 43 per cent. of the females. It would be both of interest and practical importance to learn if these figures are similar to those obtaining in the statistics of other institutions. It is perhaps natural to expect that a tendency to insanity in the mother is more likely to appear in her offspring than is a tendency to insanity in the father likely to appear in his. The nervous system of the child is in part elaborated in utero in a period during which the mother herself is peculiarly liable to mental disorder, sometimes slight, sometimes serious in its manifestations, and in part during those early years when the maternal influence is paramount. If that influence, whether within or without the womb, is good it is well with the child, but if, on the other hand, it is for some reason not good the offspring, *pari passu*, is affected. The life-history of women is bound up to a far greater extent than is that of man with matters of generation. It is a common observation among physicians, and indeed amongst lay folk as well, that the menstrual flux is very frequently preceded by, accompanied with, and succeeded by peculiarities of mentality, and that therefore in many women mental equilibrium is scarcely known, and is replaced until middle life by tones of feeling, effectivity, and thought in perpetual see-saw. It is scarcely to be doubted that such states as these exercise subtle educative influences and may result in just those failures in mental balance which may subsequently dispose the offspring to mental breakdown. From another point of view it is to be remembered that certain affections seem to be transmitted through unaffected female progenitors to male offspring, and it is at least legitimate to regard it as possible that in other disorders a like tendency exists, while it would be interesting to investigate the characters of the insanities which appear to be of maternal origin and to compare them with those which appear to be of paternal origin. There can be no doubt that within a comparatively few years our generation has seen a metamorphosis of the character of the lives led by women; such a change indeed as history does not record. It is full early to pronounce on the effects which are likely to accrue, but it is plainly of vital importance that we should watch the direction of the drift of those few straws which too often are our only guides, and we should regard with satisfaction a further development of Dr. Taylor's observations.

THE TREATMENT OF TUBERCULOSIS ON THE MEDITERRANEAN COAST: HELIOTHERAPY.

AT a meeting of the Académie de Médecine of Paris on Oct. 11th M. Debove made a report on a paper by Dr. Révillet of Cannes, entitled "The Treatment of Tuberculosis in Children on the Mediterranean Coast by Sea and Sun." Though the topic may seem trite the results are so remarkable as to demand attention. They are more trustworthy than the usual "excellent results" of therapeutics, for the undue optimism which, however honest, seems inseparable from writers who are describing the results of their own methods can be excluded. Here the patients were Swiss children sent from Geneva to Cannes by a philanthropic society. Before departing and on returning they were examined by Professor d'Espine, and the results are given in an annual report. It is noteworthy that, in spite of the proximity of their own renowned mountain sanatoriums, the Swiss should prefer to send these children to the Mediterranean. Cannes possesses great advantages which has led Professor d'Espine to recommend it, but these exist almost equally all along the coast between Hyères and Vintmille. It has a sloping sandy beach protected from cold winds on the north, east, and west by mountains and open only to the south—an ideal condition for the treatment of tuberculous children by sea, air, and sun baths. The band of Swiss children arrives each year in the middle of October and remains until about the middle of June. Any who show signs of "open" tuberculosis are rejected because of the danger of contagion. At the time of arrival the sea is warm, having a temperature of about 64° F. As winter approaches the temperature falls to 46°. The children bathe daily and do not notice the fall of temperature. The sea bath is always short, lasting from one to three minutes at most. A marked cutaneous reaction always results and there has never been the least accident. The bathing is continued through the winter even during the coldest month. The greater part of the day is devoted to heliotherapy; the tuberculous part is exposed naked to the rays of the sun. Sunless days are so few in this fortunate clime that sun bathing is possible for 190 out of the 240 days of the children's sojourn. The reverse holds in mountain climates; sunny days are the exception. The effects were striking. Pale, emaciated children, many of whom were subjects of severe disease, underwent a veritable resurrection. Appetite, colour, and spirits returned. The average gain in weight was 4 kilogrammes. For superficial tuberculous glands insolation proved most efficacious; it dried up suppuration and reduced the keloid-like projections and depressions. Progress was rapid and the surface became covered with a

supple scar which assumed the colour and characters of normal skin. Old glandular sinuses, which resisted all previous treatment, rapidly closed. Of 63 children suffering from Pott's disease 27 were cured, 26 were improved, and 6 remained stationary. Four died—three from an intercurrent disease and one from exhaustion the result of prolonged suppuration complicated by amyloid kidneys. Of 94 children suffering from hip disease and "white swellings" 38 were cured and 50 were improved. Professor d'Espine found that a certain number of children suffering from hip disease were completely cured after treatment for eight months at Cannes—a result exceptional at other latitudes. The results were not less brilliant for "white swellings," in the treatment of which immobilisation was avoided. Dr. Révillet considers that rest treatment is much abused and is the cause of ankylosis and muscular atrophy. In a number of cases "spina ventosa" was rapidly cured by exposure to the sun. In tuberculous peritonitis effusion and meteorism rapidly disappeared; in 7 cases 3 patients were cured, 3 were improved, and 1 died from perforation. In 11 cases of lupus, 8 patients were cured and 3 were improved. The diseased surface was gradually exposed to the sun until a stage was reached when the treatment could be continued for the greater part of the day. Progress was rapid; nodules were effaced, crusts fell, slight desquamation was produced, and islets of white skin were formed. Finally, a smooth supple scar, never keloidal, was produced. To sum up, in 888 cases of tuberculosis positive results were obtained in 93 per cent., and cures in 52 per cent. It is to be noted that these results are not merely the statement of Dr. Révillet about his own methods, but are vouched for by Professor d'Espine. What lesson do they teach? In this country the open-air treatment of tuberculosis has become a commonplace, but we think that the value of heliotherapy, particularly of exposure of the diseased part to the sun, is not sufficiently appreciated. Though for this purpose England is inferior to the Mediterranean littoral, it should not be forgotten—and our frequent meteorological notes prove it—that we have many places on our southern shores where the daily aggregate of sunshine is considerable.

THE HISTOLOGY OF THE SCARLET FEVER RASH.

THE histological characters of the exanthem of scarlet fever form the subject of an interesting paper contributed to *Medicinische Blätter* of Oct. 22nd by Professor J. Hlava of the Bohemian Pathological Institute of Prague. He states that the most important previous observations on this subject are those of Neumann and Unna. Neumann described swelling of the cells of the rete and the formation of gaps and networks in which wandering cells were enclosed. Unna maintained that the swelling of the skin resulted from the hyperæmia of the vessels of the corium, and that the changes in the epithelial layer were but slight. Professor Hlava's observations were made upon the skin of 18 fatal cases, and also on small pieces removed *ex vivo* in seven other cases. He concludes that the chief changes occur not in the horny or granular layers of the epidermis, but in the cylindrical and prickle layers and in the corium. There is a hyperæmia associated with œdema. The œdema extends into the epithelium and may penetrate through the granular layer to form small vesicles in the horny stratum. In the epithelium small areas of softening may result from imbibition or from necrosis. These areas may involve groups of prickle cells, the disorganisation starting at the periphery of the cells and extending in towards the nuclei, which become disintegrated. The central cells of these areas of softening may show the changes to a lesser degree, the protoplasm being simply homogeneous and the nuclei pyknotic. A few polymorphonuclear leucocytes may occur in and around these softened areas, but this leucocytic invasion is at most slight. Some dilatation of the lymph channels of the papillary layer with enlargement of the endothelial cells can be seen even before the appearance of the rash, and they may contain some débris of red blood corpuscles. On the first day of the eruption mononuclear cells with a few polymorphonuclears occur around all the blood-vessels of the corium, but even by the fourth day there is very little proliferation around these vessels. No changes of any kind are discernible in the sweat or sebaceous glands. The appearances in fatal cases are somewhat different. The epithelial cells contain more pigment; hæmorrhages and connective tissue cells containing pigment are much more common in the corium, and the cell proliferation around the blood-vessels is more marked. These differences are probably referable to the hæmorrhagic character of most of the fatal cases. Professor Hlava concludes that the hyperæmia, the serous effusion, the leucocytic changes, and the later cell proliferation about the blood-vessels are in favour of the inflammatory nature of the process rather than of the view that it is a simple toxic œdema.

THE Lord Mayor has become chairman of a Mansion House committee formed to promote the raising of a fund for the erection of a new building for the Royal Society of Medicine, which already possesses a splendid site.

A POWERFUL claim has been made by the Society of Tropical Medicine and Hygiene for the endowment of the study and prevention of tropical disease as a memorial to his late Majesty King Edward VII.

THERE has been praiseworthy activity during the week in the districts where plague-infected rats have been found, but evidence of a spread of the infection has been forthcoming.

WE regret to announce the death of Professor Lancereaux, which has just occurred at the age of 80.

ROYAL MICROSCOPICAL SOCIETY.—The next meeting of this society will be held on Nov. 16th at 8 P.M., when there will be an exhibition of specimens of British mycetozoa by Mr. A. E. Hilton.

THE NOTIFICATION OF OPHTHALMIA NEONATORUM.—The Midwives Act Committee on Nov. 8th asked the London County Council to take action with a view to the more effectual prevention of blindness or impairment of vision caused by the want of prompt and efficient medical treatment among newly born infants, and recommended the compulsory notification of all cases of ophthalmia neonatorum. So far as the practice of certified midwives was concerned, the committee stated, a method of notification already existed, as one of the rules of the Central Midwives Board required every certified midwife to advise that medical assistance should be obtained in every case of inflammation of the eyes, however slight. If the Council made the order the information obtained would enable the medical officers of the sanitary districts to make known to those concerned the opportunities available in necessitous cases. It would be found of value where the infant was taken to a hospital, where the medical practitioner perhaps would not have an opportunity of keeping the infant under treatment, and it would serve a useful purpose incidentally in bringing to light cases attended by midwives concerning which they had omitted to advise that medical aid was necessary, and to inform the Council accordingly. Notification would render more complete the arrangements for securing continuous and efficient treatment of the child. The order would be advertised and a copy sent, as directed by the Public Health Act, to each qualified medical practitioner residing or practising in the county. The Council decided to make the compulsory notification order.

THE SCHOOL CLINIC AND THE LONDON COUNTY COUNCIL.

(FROM A SPECIAL CORRESPONDENT.)

THE debate at the London County Council on Nov. 1st concerning the medical inspection of school children and the letter of the Board of Education thereon turned very largely upon the question of treatment. The article on the medical inspection of London school children published in THE LANCET last week mentioned that the Council appeared ready to revise its present system of medical inspection and treatment, and this is certainly so. The necessity of the school clinic was touched upon by every speaker on the Progressive side, while from the Moderate side only Mr. Cohen and Mr. Cyril Jackson essayed to speak in favour of the hospital system of treatment. Mr. Cohen buttressed his defence of the Council's method by calling in evidence generalities about the charitable motives and good emergency work of the hospitals, but the relevancy of his remarks was somewhat vitiated by the fact that it was not the hospitals, but the Council's arrangements with them, which formed the subject of criticism.

The defence of Mr. Cyril Jackson, chairman of the Education Committee, was remarkable for its moderate tone. Mr. Jackson did not endeavour to deny that mistakes had occurred in the working of the hospital treatment scheme, but suggested that similar mistakes would have been inevitable even had a system of school clinics been established. And the further interesting suggestion was made, in the form one could not help thinking of a broad hint, that when the present hospital arrangements come to an end this year, the whole matter will come up for reconsideration.

The arrangements made by the London County Council embrace, among others, Charing Cross, Great Ormond-street, the London, and King's College hospitals, but exclude such important institutions as St. Thomas's, Guy's, St. Bartholomew's, Westminster, and University College. Quite apart, therefore, from the question of whether hospital treatment is suitable for school children as such, the County Council's arrangements were almost inevitably bound to be subject to serious faults in working. For instance, children living practically under the walls of a hospital with which no arrangements have been made by the Council have been sent miles away to another hospital for treatment under the scheme. Then some parents who have taken their children to a hospital directly after a medical inspector had indicated to them defects which required remedy, have been given an emergency treatment and told to apply to the head teacher of the school for a London County Council voucher entitling to further treatment. But the head teacher is not supplied with these vouchers, which are only issued after a delay of some weeks by the Education Office. The delay has the purpose of allowing the parent to provide treatment by his own endeavours, but in the cases cited it has the practical effect of considerably delaying treatment, frequently of rendering the emergency treatment futile, and of exasperating the parents and teachers alike.

The question of payment further complicates matters. The parent of every child treated at a hospital under the London County Council scheme must be assessed to pay for the cost of such treatment. So that after having been first delayed and subjected to waste of time and annoyance, the parent is secondly presented with a bill for treatment at a hospital at which his children formerly attended free, and at which they still attend free if under or above school age. And the parent is asked to pay notwithstanding any contribution he may have made to the hospital through his club, place of business, or personally, and despite any gift which he may make to the contribution boxes while actually attending the hospital.

Miss Adler, in a well-balanced speech, made this injustice clear and suggested further that the fee charged to parents was too high, and, in the case of a parent with several children needing treatment, more than a weekly wage-earner could be expected to pay without serious hardship. Another of the points made in the discussion was that some at least of the defects and diseases discovered by inspection are not such as the hospitals can conveniently tackle. The treatment of discharging ears, needing constant syringing twice or thrice a day by a nurse, is not a treatment for which the hospitals have either time or staff, while the treatment of discharging ears at home is admittedly liable to irregular intermissions, disregard of aseptic precautions, and lack of efficiency generally. Then there is the question of the operation for removal of tonsils and adenoids. This operation is rarely performed by the general practitioner on any but the wealthier among his patients, whereas the hospitals have more of this particular work than they can conveniently manage. In consequence there arise from time to time, cases where the children, after operation, have to be sent home by tramcar or omnibus in a condition, as Miss Adler said, unpleasant to themselves and to all who see them.

Both of these groups of defects and diseases appear to call for treatment in special school clinics. Much the same considerations apply to dental treatment, ringworm and other skin diseases, and also to those slighter degrees of dulness, nervousness, anæmia, and digestive troubles which are serious from the point of the teacher and school medical officer, but which, by comparison with the more acute and severe affections, do not, from the hospital point of view, warrant detailed and continuous treatment. A further consideration arises when the question of continuity of treatment in general is considered. There is, to begin with, no method of correlation of the hospital treatment and the school medical officer's inspection. The hospital does not accurately know what has been diagnosed by the school medical officer, nor in relation to what special school conditions. Nor does the school medical officer know in what way his diagnosis is being followed up by treatment.

Although the London County Council pays the hospitals, and the parent may have to pay the London County Council, there exists no way in which the parent can be compelled to continue regular attendance at the hospital with his child until the child is discharged cured. No organisation but that of a school clinic where the medical information gathered in school will be at the disposal of the physician or surgeon of the clinic, and where the attendance of the child can, if necessary, be compelled by use of the school authority, can get over these difficulties. This is particularly obvious when we examine the cases of the children of destitute or demoralised slum-dwellers who present a large proportion of defects. Among this class of case regularity of attendance at a hospital is a great rarity, even in severe cases. The parents will not, or often cannot, afford the time necessary to attend an ordinary out-patient department. For this reason children have been found in the schools suffering from tuberculous disease of the hip, with discharging sinuses, severe middle-ear disease, extensive (if under the clothing) skin disease, phthisis, and heart disease. Under existing conditions the children of this demoralised slum class do not and cannot get adequately treated, however great the efforts of individual hospitals and individual surgeons and physicians.

The debate at the London County Council on Tuesday made it abundantly clear that the treatment of the mass of defects and diseases discovered by medical inspection must be the work of a school clinic. Mr. Hobson, in addition to his carefully critical speech on the inspection question, Mr. Frank Smith, and every other speaker on the Progressive side, emphasised this point of view.

In connexion with any system of school clinics organised in London the hospitals must necessarily play a large part. There will be, in the first place, those cases discovered at school, which are too acute, or too severe, or require too specialised a treatment to be dealt with at the clinic. There will also be those cases where the parents of the child prefer to make their own arrangements with a hospital. Again, some of the special hospitals and special departments of hospitals could be arranged with so that what, in fact, would be clinics for school children within the walls of the hospital building could be organised. This applies to refraction, dental, nose, throat and ear, and chest cases. Where a special hospital or department exists in a district conveniently situate as regards surrounding schools, there seems every reason to think that suitable special arrangements could be made within the limits of the school clinic organisation, and as a part of that organisation.

The effect of the setting up of school clinics would be materially to disembarrass the out-patient departments of the hospitals, while more effectually treating the diseases found in school children. The effect on the private practitioner

would be in any case slight, as the organisation suggested amounts only to a redistribution for treatment purposes of the hospital population. It is even probable that in the redistribution the private practitioner would gain more than he would lose, while the school clinic would be a local organisation of service to him in cases requiring more continuous treatment than he could give, as in cases of discharging ears or minor surgical operations which it is impossible to undertake in poor homes and which now go to hospital.

THE MOTOR EXHIBITION AT OLYMPIA, LONDON.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

(*Concluded from p. 1364.*)

THE Ninth International Motor Exhibition is one of the finest representations of cars and accessories that have been held; but from the reporter's point of view it does not come up to the exhibition of 1908, in so far as that there is no striking new "copy-producing" feature such as the bomb which the Silent Knight engine then exploded on the public. Still, the show is certainly a worthy successor of the excellent ones that have preceded it. Buying a motor mount is, of course, not the same as the purchase of, say, a Gillette razor, for with the latter the blade, on account of its cheapness, can be thrown away when worn out. Such is not usually the case with a car, and it is therefore an advantage for intending purchasers to visit the exhibition, where they can see the many types of vehicle fitted for professional use, and consider the difficult question of which one is most suited for their individual needs. And yet, though I advise would-be buyers to go there to choose a car, I rather pity the layman who attempts to do so, because so many makers are represented by such good agents, and so many cars are so excellent, and are said to be so suitable for doctors, that the selection must indeed be a difficult matter. The one point above all others that should, I venture to submit, be kept in view by those who belong to what is known as "the motorists of moderate means class," is that the expenses of motoring are largely dependent on the load that is carried, and that there is much in favour of the light two-seater with hood and front wind-screen, at any rate for the doctor who is his own chauffeur. As to the number of cylinders, the tendency is in favour of four. Of course, there are many six-cylinders: probably more than there were last year. But for power, fair silence, and simplicity and efficiency the four-cylinder comes up to the requirements of most people, and a good many, I think, might with advantage, anyway in their early motoring days, be content with a single "lunger" like the De Dion, Rover, Swift, or Cadillac, though, of course, they do suffer in the matter of engine vibration on comparison with a four-cylinder.

Mr. Lloyd George has done good to motoring and motorists. His taxes on horse-power based on the bore and discarding the stroke are responsible for the number of smaller powered cars and the diminution in bore, coupled with increase in the length of the stroke. The popular size is undoubtedly 80 mm. bore by 120 mm. stroke, which comes for doctors within the £2 2*s*. tax. Such an engine, too, gives all the power likely to be required, and, of course, is economical in the matter of petrol.

A good many still cast their engines *en bloc*. Some makers, however, like the Darracq firm, have reverted to casting the cylinders in pairs. Except that this makes it easier to replace the engine covers, I do not think that it matters. If good oil is used for lubrication, and not too much, it will be of rare occurrence that pre-ignition will make a cleaning of the engine essential. Carbon deposits, too, are said to be removeable by the use of a chemical decarboniser, but opinions are divided as to its advisability. On another occasion I hope to be able to give the results of my own experience of this compound.

A large number of makers are using the Silent Knight slide-valve engine. The Daimler and Minerva companies started it, and now the Rover, Panhard, and Mercedes-Daimler are all building this type. Of course, when any engine is run hard, fast, and under load, it is not absolutely noiseless and without vibration, and probably the newer form may claim an advantage in these respects. Anyway, at present the poppet valves can be more easily repaired and adjusted than the slide valve, which seems an important point in favour of the former. Still, both are now so well made that breakdowns on either form are not likely to occur, and if they do—well, personally I should prefer the poppet engine. Some engines, like the Bentall, have overhead valves operated as on this type by an overhead cam-shaft, and other valves are operated by overhead rockers and by the usual crank case contained eccentric shaft. I do not quite see the advantage of the overhead valves, when they are lifted through rocking pieces that need long rods working in guides to reach the lifting cams in the crank case. However, as long as the moving parts are hardened it will be a long time before they wear enough to alter the lift of the valves, and if all the valves are on one side this method permits of larger valves being fitted, and the larger the valves the greater amount of charge, and thus an increase in power. To help to reduce noise the lift of the valves is reduced and the area increased, and that is why on some engines the inlets are on one side and the exhaust on the other, as with the White and Poppe and Austin engines. This, of course, means an extra cam-shaft. On many cars, too, to further deaden sound, the valve-lifting parts are covered in by easily detachable covers, as on the Napier and Austin.

The general tendency seems to be in favour of high tension magneto ignition, and this is now so satisfactory that many of the smaller cars rely solely on this method of exploding the mixture. Personally, however excellent it is, I prefer the knowledge that a second method is ready at hand, and the various forms of dual ignition shown by Messrs. Bosch, the Simms Co., and Messrs. Hall are all good, and medical men ordering cars could easily have one of them fitted in lieu of the single method or, what is as good, an already timed spare magneto can be carried. If this is decided on it is as well to see that the magneto is easily removable, and those held in position by a band are the best. On most cars it will be noticed that they are thus fixed.

Cooling is still on a good many cars assisted by a pump, but as this is now in all cases gear-driven trouble with this portion of the car's anatomy need not be anticipated. On many of the smaller cars thermo-syphon cooling is found sufficient. One good feature in the show is that on most cars the water-circulating pipes are of good size and on nearly all the radiator is helped by a circulating fan.

Lubrication is now in many cases maintained by some simple and out-of-sight form of pump which keeps a constant level of oil in the troughs under each big end. In some cases, as on the Daimler, the height of the oil in these troughs is varied with the speed of the engine, the throttle being connected, so that as it is opened they become deeper and, as closed, shallower.

Simplicity coupled with efficiency in carburetters seems the rule, and there are some excellent multiple jet arrangements. But still the single jet gives such good results that, generally speaking, the multiple jet form seems a needless complication. The spring controlled extra air valves also seem popular, which I believe accounts for the ability of the modern small engine to pull so well at low engine speeds.

Of clutches there are many, and the battle still rages between multiple disc and the leather cone. Personally, I prefer the latter, providing that some simple method to ensure slow engagement is fitted. Of course, accuracy of workmanship has more to do with the satisfactory working of a clutch than its form, and most cars by good makers have clutches that are excellent, whether they be multiple disc, leather cone, or expanding. The Metallurgique clutch is a good example of an internal expanding type, and on the Mors will be noticed an external form similar to the ordinary external band brake. The Austin fit a neat kind of leather cone, in which the leather is put on in segments, and on the Darracq too the cone is split radially at intervals round its edge, which also assists gradual engagement, and thus obviates fierceness.

Ball-bearings are universal for every part except the crank, and some makers, such as the Napier and Darracq, employ them also for the crank. The Hoffman, "F. and S.," and the Timken seem the favourite kind, and all are certainly of very superior make and likely to give satisfaction

Most gearboxes also are made with ball-bearings. On the F. and S. stand a crank is shown running by its own weight, and the way it spins when once set going is certainly a proof of the advantage of this method of reducing friction. Still, the multiplying of ball-bearings is simply a craze, for since a year I have driven a car with plain bearings without any trouble, and provided a plain bearing is well lubricated at the beginning worry in that quarter will not take place. However, the public are now keen on ball-bearings, and as makers are anxious to meet the wishes of possible clients the majority of cars are now so fitted—in fact, some cars perfectly bristle with ball-bearings.

The live-axle is now established, and the fight is not between chains and propeller shafts, but between bevel and worm final drive. The latter is becoming more common, and, provided it is well made, this form, which was first introduced by the Lanchester Company and Messrs. Dennis, has certainly the advantage of silence over its rival. It is, however, more expensive to turn out, and, of course, it increases the angularity of the propeller shaft. Practically every car has now one direct drive, and this year a large number of cars, and even small ones, are made with four forward speeds instead of the usual three, which is an undoubted improvement, especially on the lower-powered cars. At one time there was a tendency to make the direct drive the third speed, and to gear up the top one; but as all drivers naturally like, whenever possible, to be on the top, this method was not popular, as the top was not as silent as the third.

The majority of cars have still the foot-brake acting on the propeller shaft, and the hand-controlled one on drums on the back wheels. On some cars this is very wisely reversed, the foot-brake acting on the back wheels, as on the Stoewer car. On others both sets of brakes operate on the back wheels, as on the Straker Squire. On an increasing number of cars front wheel brakes are fitted—as, for instance, the Allen Liversidge, the working of which was described in THE LANCET last year, and is well shown on the stand of that firm in the gallery. Messrs. Crossley and the Argyll Company are amongst those who fit this kind of brake, which is undoubtedly superior as well as more safe on greasy, skiddy roads. They must, however, be employed with care to avoid interference with the steering.

The steering gear has of late years received more attention, and now undoubtedly is satisfactory—a very important matter, considering the danger that might result should this mechanism fail.

The springing of cars is certainly better than of yore, the general tendency being to make the springs flatter and to provide for their lubrication, with the result that there is now undoubtedly comfort without undue flexibility.

The tyres on most cars might still be more proportionate to the weight, and as an example of the advantage of heavier tyres it is to be noted that on the latest car built for the King tyres 965 mm. by 175 mm. are fitted. Of the tyres themselves, the Continental Tyre and Rubber Company, Limited (Stand 308), the Collier Tyre Company (Stand 296), the Dunlop Pneumatic Tyre Company (Stand 302), Messrs. George Spencer Moulton and Company (Stand 305), the North British Rubber Company (Stand 286), Messrs. Goodrich, Limited (Stand 300), the Michelin Tyre Company (Stand 307), the Palmer Tyre Company, Limited (Stand 181), and the Stepney Spare Motor Wheel Company (Stand 280), all show good examples of plain and non-skid productions. One improvement, however, I think we all would welcome is in the matter of price. As far as quality goes, there is marked alteration for the better. The combination of rubber with metal studs seems a good idea, but personally I believe the all-rubber non-skids, such as the Stepney or Kempshall, are the more efficacious and certainly last longer than the steel kind.

Among accessories the most striking novelties seem to be in the matter of electric lighting, which has great advantages for the motoring doctor. Messrs. Charles Jarrott and Letts, Messrs. Peto and Radford, Messrs. Fuller, and the C.A.V. Company all show interesting kinds of this form of illumination. In connexion with the dynamo lighting, it is possible for medical batteries, such as those used for X ray work, cautery, or electrolysis, to be recharged in the day-time while the car is in use, the dynamo current being taken direct to such batteries, thus charging them while the engine is running. Messrs. Longstreth's and Brown Brothers also show a good assortment of motor head, side, and tail lamps.

In the coachbuilding exhibits there is one satisfaction—the English builder competes well with foreign competitors. All types are shown, from the modest two-seater to the sumptuous landaulette, and the various creations of such firms as Barker, the Gordon Carriage Works, Holland, Hora, Lawton, Maythorn, Mulliner, Morgan, Salmons, W. and F. Thorn, and Thrupp and Maberly show well the present-day improvements in contour and comfort. Those who rode 12 years ago in the old Benz cars, with their dog-cart bodies and solid tyres, will appreciate the change. As examples, one has but to look at such little two-seaters as the Swift, Darracq, or De Dion, or the Medicann closed-in two-seater, as well as the torpedo, limousine, and landaulettes which abound in the Long Acre part of the show. High fronts, side doors, and adjustable wind-screens seem the rule, and all add greatly to the comfort of driving in the variations of weather that we have to put up with in this country. The only grumble that I can make is that when the Cape-cart hood is up some wind-screens make getting in and out of the car rather a difficult performance.

In continuation of my short notes last week about particular exhibits, there are a few more which deserve mention. The Tribet Car is shown by the Motor Mercantile Co., Limited, of Duke-street, W., on Stand 4, and is well fitted for a two-seated cabriolet body. The four cylinders are cast in pairs, and have a bore of 70 mm. and a stroke of 100 mm. The valves are on each side, and are interchangeable. The carburetter is a Claudel-Hobson, and ignition is by Bosch magneto. The radiator is of the grilled pattern, and the circulation is assisted by means of an efficient pump. The gearbox provides for three forward speeds and a reverse operated by a single lever, and the transmission is by cardan shaft and the usual bevel gears. The brakes are of the internal expanding type, and the car is in every way of sound up-to-date construction.

Messrs. Armstrong, Whitworth, and Co., of Blenheim-street, New Bond-street, W., on Stand 60, show two useful sized models, of 15·9 h.p. and 17·9 h.p. The latter has an engine 85 mm. by 120 mm., a multiple disc clutch, dual ignition, tyres 815 mm. by 105 mm., and detachable wire wheels. The pressure-feed to the petrol tank is operated by a mechanical pump, and all the valve mechanism is enclosed. These cars are sold with a comprehensive insurance policy that covers not only third-party claims and accidents, but mechanical breakdowns also.

Not only is there a fine array of cars on Stands 129 and 71, where Messrs. Crossley Bros., of Manchester, are exhibiting, but their cars are especially interesting in view of a very ingenious method of front-wheel braking which should certainly be inspected.

The Gladiator Company, of Great Portland-street, W., now only build two models—a 12–14 h.p. and a 35–40 h.p. The smaller has genuine good workmanship and is fitted for either a two-seater or a small four-seated body.

Messrs. Humber of Coventry have always been popular with the profession, and their 1911 four models are bound to maintain the reputation of their predecessors. Among many features are chain-driven cam-shafts and the use of the propeller shaft casing as a torque rod. Detachable wire wheels are fitted, and though their prices are somewhat advanced, I do not think that this will in any way affect their popularity.

The cars that are "made like a gun," by the Enfield Company, of Sparkbrook, Birmingham, are just to the right of the Hammersmith-road entrance on Stand 90. The 12 h.p. has a four-cylinder engine, 75 mm. by 100 mm., with enclosed valves and tappets on the near side, cooling being by thermo syphon, and ignition by gear-driven magneto. The clutch is a leather-faced cone. There are four forward speeds, controlled by the usual gate. On the 20 h.p. either the third or fourth speed can be supplied as direct.

On Stand 56 Messrs. Rolls-Royce, Limited, of Conduit-street, W., merely show the chassis of their only production, a six-cylinder, the price of which is, roughly, £1000, and yet, in spite of this figure, I understand that a very large number of orders have been booked by this firm. The engine should certainly be seen, as it represents all that is latest and best in the matter of a six-cylinder.

The Sizaire-Naudin Car, made by Messrs. Jarrott and Letts, of Great Marlborough-street, W., is on Stand 71, and is chiefly famous because the change-speed mechanism is incorporated in the back axle-casing, and by the engaging of different small bevels with the crown wheel all the speeds are

direct. This car, which was described in THE LANCET of March 27th, 1909, can now be had with either a single- or a four-cylinder engine.

Messrs. Clement-Talbot, of North Kensington, are on Stand 51, where they show specimens of their four models, as well as an enormous number of medals—a proof of the many successes they have obtained in competitions with their cars. This firm have been the earliest advocates of the now popular four-speed gearboxes, and the automobiles shown are in every way worthy of their name.

REPORT OF THE COMMISSIONERS OF PRISONS AND THE DIRECTORS OF CONVICT PRISONS FOR THE YEAR ENDED MARCH 31ST, 1910.

THE Prison Blue-book for the year 1909–10, in accordance with the practice adopted some years ago, has been issued in two parts, the first containing the reports of the Commissioners and of the several inspectors, together with the usual statistical tables referring to the general prison population, while the second part gives detailed information regarding the different local and convict prisons, Borstal institutions, and State inebriate reformatories.

The total number of prisoners received into local prisons during the year was 216,148—173,800 males and 42,348 females, these figures showing a slight decrease on the numbers for 1908–09. There were 82 deaths from natural causes during the year, giving a death-rate of 0·38 per 1000 prisoners received, the average rate for the last five years being 0·42. Nine deaths were due to pulmonary tuberculosis, and it is remarked that the disease existed prior to reception in all the cases save one. Five prisoners committed suicide. Sixteen cases of infectious disease were reported during the year, the infection having in most instances been contracted prior to the prisoner's admission.

The number of prisoners certified insane in local prisons last year was 118—viz., 106 males and 12 females. The medical inspector remarks that, though there has been a slight tendency to a decrease in the number of these cases, the fact is not an indication of any increase of discrimination on the part of the committing magistrates, for the ratio of prisoners found to be insane on reception to the total number certified has remained fairly stationary. It would appear, therefore, that there is still room for improvement in regard to the investigation of the mental condition of accused persons, and that if more care were exercised by magistrates it would be possible to avoid, or at all events to abate, the scandal of sending lunatics to prison. As evidence of what might be done by a more liberal use even of the existing machinery, the medical inspector points to the excellent results of the growing practice in the larger centres of remanding prisoners of doubtful mental condition for the expert examination of the prison medical officer. This is done very freely in the metropolis, where the medical officers of the two prisons, Brixton and Holloway, which receive prisoners on remand, were called on last year, for instance, to report to courts of summary jurisdiction on the mental state of nearly 900 accused persons, a considerable proportion of whom were found to be certifiably insane. Moreover, of course, all prisoners committed to these prisons for trial at assizes and quarter sessions are specially examined with regard to their mental condition, and evidence on the point is furnished to the courts. The good effect of this sifting process is seen in the fact that in the metropolitan prisons the proportion of cases in which insanity is not recognised till after the sentence is much below the average for the country at large. Thus during the last five years the three London prisons for convicted males—Pentonville, Wandsworth, and Wormwood Scrubbs—which receive over 28 per cent. of male convicted prisoners in England and Wales, have only contributed 16·1 per cent. to the total number of prisoners certified insane after conviction. And similarly Holloway, though receiving more than 30 per cent. of the women sent to prison in this country, has in the same period furnished less than 13 per cent. of the cases of insanity in convicted females. That this is mainly due to the cause indicated above, and not to any lack of insane offenders in London, is shown to be very probable by the fact that Holloway accounts for upwards of 60 per cent. of the cases of women on remand who were reported as insane to courts of summary jurisdiction.

During the year 322 convicted prisoners were specially dealt with under the modified rules for prisoners so feeble in mind as to be unfit for ordinary penal discipline. In this connexion it is satisfactory to note that the Commissioners announce that in compliance with the desire of the Secretary of State they have submitted definite proposals for dealing with the problem of the feeble-minded offender. It is suggested that legislative sanction should be obtained to empower the Secretary of State "to transfer prisoners to special institutions, under due safeguards, on medical certificate (analogous to that given in cases of insanity) that a person under sentence is so clearly defective in mind as to be unable to earn his own living or to take ordinary care of himself, and to be likely to revert to crime on discharge unless special means are taken for his supervision." If this suggestion is carried out, and if the class of mentally defective delinquents can be dealt with at once and independently of the general problem of the feeble-minded, it is considered that an institution for about 500 would be required at the start. It may be hoped that this announcement indicates that the Government are prepared at length to take action on this matter, the urgency of which has been so constantly pressed on their attention by the Commissioners for several years past. Some idea of the difficulty of dealing with the heterogeneous material which under the existing system has to be managed in prisons can be gained from the very remarkable report of the medical officer of Pentonville Prison, Mr. J. H. Parker Wilson, published in the second part of the Blue-book, in which he gives an account of the feeble-minded, the epileptics, the vagrants, and the inebriates admitted to that institution in the course of a single year.

The daily average population in the convict prisons last year was 3069 males and 120 females. The deaths during the year numbered 22, all but one being due to natural causes, giving a death-rate from such causes of 6·5 per 1000 of the daily average population. Thirty-six convicts were certified insane.

The medical officers of the Borstal institutions are emphatic in calling attention to the excellent results in improved physique and nervous tone which have been obtained by the physical exercises and the general discipline enforced on adolescent prisoners under the Borstal system. It is gratifying to learn that the Commissioners see some prospect of being able to modify the limitation which has hitherto excluded lads in bad health or of poor physique from the operation of this system. The opening of a new Borstal institution at Feltham may, it is hoped, provide enough additional accommodation to allow of the formation of a special class for those adolescents whose physique renders them unfit for the full measure of drill and gymnastic exercises. The efforts being made to develop the Borstal methods and to further other reforms tending to substitute the educative and preventive for the purely deterrent influences in the penal system afford gratifying evidence of the spirit which animates the prison administration under the *régime* of Sir Evelyn Ruggles-Brise. Amongst the appendices to the report special reference may be made to a very interesting inquiry by the secretary of the Prison Commission, Mr. Basil H. Thomson, regarding the question of recidivism. Taking advantage of the improved means of identification provided by the finger-print system, Mr. Thomson has investigated the after-history of 4563 convicts discharged in the five years 1900 to 1904 and has found that 30 per cent. have not relapsed into crime, and that of the apparently confirmed recidivists as many as 17 per cent. have kept out of trouble. Considering the quality of the material this is a very encouraging result, and goes to prove that the more humane methods now in vogue are exercising some real reformatory influence.

ROYAL SOCIETY OF MEDICINE (BALNEOLOGICAL AND CLIMATOLOGICAL SECTION).—A general meeting of this section was held at 15, Cavendish-square, W., on Oct. 28th, Dr. T. F. Gardner (Bournemouth), the President, being in the chair. The President gave an address entitled "Air and Water: Is there anything New under the Sun?" The same evening the annual dinner took place at the Imperial Restaurant, at which Sir Thomas Barlow and Dr. Bertrand Dawson were guests.

COLONY OF HONG-KONG: PUBLIC HEALTH REPORT FOR 1909.

IN the recently published volume of medical and sanitary reports for Hong-Kong there is a joint report on the public health of the colony for 1909 by the principal civil medical officer and the medical officer of health.

Personnel: Reduction of Inspectorate.

In noticing a previous issue of these reports we gave particulars of the area administered by the Sanitary Board of the colony. The mixed character of the population was also indicated, the European being distinguished from the native and the civil from the military and naval inhabitants of the district.[1] The *personnel* of the Hong-Kong sanitary department has changed considerably since 1908. Dr. J. M. Atkinson still contributes the civil portion to the report, but the sanitary and statistical portion is now authenticated by Dr. Francis Clark, in place of Dr. W. W. Pearse, who has been transferred to Kowloon as assistant medical officer of health. The sanitary inspectors of Kowloon work under Dr. Pearse's personal supervision, but the sanitary inspection of the remainder of the colony seems to be delegated to the local police. Since the year 1908 a general improvement in the public health of the colony has been observed, and this fact has unfortunately been held to justify a large reduction of the inspectorate, for the five special plague officers hitherto employed have been dismissed, their important preventive duties being apparently left to the ordinary district inspectors. From what can be gathered from recent reports concerning the imperfect sanitary defences of Hong-Kong against the ravages of plague, this serious reduction of the expert staff seems to be a retrograde step. We shall therefore be interested to learn how far it has been sanctioned by the medical authorities locally responsible for the maintenance of the public health.

Vital Statistics.

According to the best estimates available, the total population of the colony in 1909 numbered about 344,000, of whom rather more than 323,000 were either Chinese or Malays, and of these 46,000 were included in the "boat population." The civil population consists mainly of male adults. At the 1901 census 72·6 per cent. of the inhabitants were males. At the last census (1906) the proportion fell to 70·1 per cent., so that there has been during that interval an increase in the proportion of females, which means an improvement in family life among the Chinese. More than half of the civil inhabitants are between the ages of 20 and 45 years.

For reasons given in the previous report, the medical officers repeat their warning that the registered number of Chinese births affords no trustworthy measure of the true birth-rate. Owing to the custom of registering the births of only those children who survive the age of one month, the reporters indicate the proportion of 7·0 per 1000 of the Chinese population as the maximum rate of natality that can justly be recorded for the year 1909. Very remarkable is the preponderance of male over female births registered among the Chinese. In the year under notice not fewer than 266 males were born to every 100 females. Among the non-Chinese community the male births were in the ratio of 117 to 100 female births, a proportion which approaches more nearly than the foregoing to that of this country. The mortality in Hong-Kong varies considerably from time to time. Last year the rate was equal to 21·1 per 1000 living, against a rate of 27·6 per 1000 in the year immediately preceding. Of the total deaths at all ages about one-third were those of infants under one year old. Among the Chinese population the *known deaths* of infants numbered 2260, whilst only 1202 births were registered; if to these be added the unregistered births of children under one year of age that died in convents or that were found dead in the streets the total deaths will amount to 2588, a number corresponding to an infantile mortality which must be considered enormous.

In this report the deaths from pulmonary tuberculosis are included with those from other diseases of the respiratory system, and these together account for more than one-third of the mortality from all causes. Among the Chinese the deaths from respiratory diseases in the year 1909 corresponded to a rate of 7·8 per 1000 living, and those from pulmonary tuberculosis to a rate of 2·3 per 1000. In that year these latter deaths were in the proportion of 10·7 per cent. of the total deaths, as compared with 9·8 per cent. in 1906—a fact which is regarded by the reporters as indicating that the deaths from this disease are proportionally on the increase, although the total mortality is less.

Malaria, Plague, &c.

The loss of life from malarial fever has been decreasing slightly since the year 1907. Last year 422 deaths were referred to it, all but five of which were among the Chinese. In this colony definite preventive measures against malaria were first undertaken in 1899, since which year considerable attention has been directed to the work. The inspectors have diligently sought for and removed the breeding-places of mosquitoes, dense tangles of brushwood have been cut down, the "trained nullahs" have been regularly swept to prevent the growth of waterweed and of algæ, and stagnant water has in many places been periodically treated with kerosene; and further, the ordinary methods of house fumigation with sulphur have been carried out in suitable cases. Hygiene is taught systematically in all the schools of the colony, special attention being paid to the mode of malaria infection by the mosquito, as well as to the manner in which the mosquito breeds. The total number of cases of plague reported last year was 135, as compared with 1073 in the preceding year, and 893 and 240 respectively in the years 1906 and 1907. Thirty-one of the cases occurred in Kowloon city, a native city of old rat-ridden dwellings, which only came under British jurisdiction in 1899 and has not yet been rebuilt. Of the 135 reported cases 108 died, the mortality among the non-Chinese being 57 per cent. and among the Chinese 81 per cent. It is well known that rats are chiefly instrumental in distributing the infection of plague, and in Kong-Hong a special rat-poisoning campaign is instituted annually just before the onset of the usual epidemic season—i.e., during January, February, and March. In the course of last year 60,000 rats were killed in the city of Victoria and 16,000 in Kowloon; of this number not fewer than 407 were found, on bacteriological examination, to be infected with plague. Among other infectious diseases enteric fever is reported to have been somewhat more prevalent than usual last year, whilst with this exception the colony appears to have been comparatively free from ordinary diseases of the epidemic class.

[1] THE LANCET, March 19th, 1910, p. 817.

SANITATION IN INDIA.

IN continuance of our custom we present our readers with a brief review of public health matters in the Indian Empire, described from the official annual reports, with which we have been favoured by the courtesy of the authorities concerned. Although we are nearing the close of 1910 we have not yet received the whole of the 1909 series of reports; indeed, from Madras the only one that has come to hand is the report on lunatic asylums. The reports from the senior Presidency seem to be generally somewhat tardy in arrival. Neither have we the vital statistics from the other Presidency administrations of Bengal or Bombay. The collection and preparation of statistics from these enormous populations and from such wide areas is, however, we are well aware, a very long business; the mass of figures is appalling. Great care has been exercised in the printing of these reports, which shows marked advance on the typographical work of some years back. We shall deal first with the general sanitary administration, then with the civil hospitals and dispensaries, then with the jails and asylums.

I.—SANITARY ADMINISTRATION.

United Provinces of Agra and Oudh.

The Report of the Sanitary Commissioner for the United Provinces of Agra and Oudh for 1909 is the forty-second annual issue. The vital statistics are, as usual, calculated on the population according to the census of 1901. No other method is feasible, but obviously, in the eighth year after enumeration, the figures for 1901 do not afford an accurate basis for the calculation of ratios. Both birth-rate (33·32

per 1000) and death-rate (37·34) were below the quinquennial means (41·35 and 42·79 respectively); the former is accounted for by the extreme unhealthiness of these provinces, due to malaria, in the preceding year (1908), the latter to the weeding out of the weakly and aged in 1908 from the same cause. It is noted that the (monthly) birth-rate rose steadily from 1·59 in July to 4·05 in December; and that this rise was most marked in the districts where malaria had been most severe, and the previous diminution most noticeable; so rapid a recovery is a striking instance of the tendency of nature towards equilibrium—*tamen usque recurret*. The death-rate (37·3) was much lower than the very high figure (52·7) in 1908; but was nevertheless considerably higher than in any other province in India. The infantile mortality (241·6 per 1000), though less than the high ratio (345) in 1908, is still excessive; from an inquiry conducted by a lady doctor specially appointed for the purpose, it appears that 30 per cent. of these infantile deaths result from tetanus. In regard to all causes of death except plague, these provinces suffered less than in 1908. Plague, however, increased in severity, and caused 38,394 deaths, the mortality increasing towards the end of the year. The malarial mortality was high in certain districts that had been severely affected in 1908, and decreased in the latter part of the year. Arrangements have been made to secure early notification of malarial prevalence, and an effective free distribution of quinine should an epidemic occur. At Chakrata 62 cases of a fever intractable to quinine were reported, which on bacterial investigation at the Kasauli laboratory were found to be relapsing fever; there were ten deaths, but measures were promptly taken and the spread of the disease checked. At Naini Tal there was a recrudescence of enteric fever, 45 cases amongst natives and 23 amongst Europeans being diagnosed; nine of the European cases were residents at St. Joseph's School; on investigation by Captain E. D. W. Greig, I.M.S., a carrier was detected employed in the cookhouse of this institution; the man was discharged and no cases occurred subsequently. No allusion is made to the military depôt for typhoid convalescents at this station; its presence has not presumably had anything to do with the outbreak just mentioned. At Benares biological methods of sewage treatment are carried out; ordinary contact beds and two secondary beds are in use, and are stated to be working well. Two great fairs took place during the year, one at Allahabad in February, the other at Hardwar in April; only one case of cholera occurred on the former occasion; at Hardwar (where some 300,000 people were gathered together) there were 156 deaths from this cause. In former days the deaths would have run into thousands and the epidemic spread over half a province; only those who know the conditions can appreciate the unceasing vigilance and administrative skill that must have been displayed in dealing with these emergencies. Major J. C. Robertson, I.M.S., officiating Sanitary Commissioner, has paid particular attention to the causes underlying the prevalence of malaria in the Naini Tal Tarai, and has completed malarial surveys of the two excessively feverish towns, Saharanpur and Nagina. This officer furnishes the present report, but the Sanitary Commissioner during the year was Colonel C. C. Manifold, I.M.S.

A special report is forwarded by Colonel Manifold, now Inspector-General of Civil Hospitals, on the prevalence of plague in the United Provinces during the twelve months, July, 1909, to June, 1910. The services of the medical officers who had been appointed in 1907 to superintend plague inoculation, conservancy measures, and the destruction of rats were dispensed with (except at Cawnpore) in April, 1909. In July Government directed that all expenditure on special measures against plague should be discontinued until it broke out again in epidemic form, and that before any measures involving expenditure were undertaken the sanction of Government should be obtained. These orders were strictly observed. During the year (July, 1908, to June, 1909) there had been 15,580 seizures and 13,814 deaths. From July, 1909, to June, 1910, there were 151,298 seizures and 141,357 deaths. Comment is unnecessary.

The main feature of this epidemic was the much higher mortality in 1909 than in 1908 during the months July to November: the deaths numbered only 381 in 1908; they were 10,550 in 1909. In December, January, and February the mortality continued to increase, until in March, 1910, the total plague deaths reached 39,513; thereafter the disease rapidly abated, until in June there were only 280 deaths. More than half the deaths (74,989) occurred in the four most easterly districts, Ballia, Ghazipur, Azamgarh, and Gorakhpur. Inoculation proved to be a very unpopular measure; the belief that it causes impotence is widespread, and the fear of this calamity is greater than that of dying from plague. Where inoculation succeeded it was owing to the tact of the medical staff and in some cases to the good example of some man of influence; if such a person was himself inoculated, with the whole of his family and his zenana, the entire village would very likely follow his example.

Central Provinces and Berar.

In the Central Provinces and Berar the duties of Sanitary Commissioner were combined with those of Inspector-General of Civil Hospitals under Colonel P. A. Weir, I.M.S., until Feb. 1st, 1910. On that date the departments were separated, and Captain T. Stokes, I.M.S., was appointed Sanitary Commissioner. The report for the previous year is his work. The birth-rate, 51·63 per 1000, was higher than in any other province; but, as already remarked, these rates are subject to much correction, as the census figures have become obsolete. The general death-rate for 1909 was 33·09 per 1000, the third highest in India, but lower than in any of the preceding six years in these provinces. Neither cholera nor small-pox prevailed to any considerable extent, though the former disease was introduced by pilgrims returning from Benares and Nasik into several districts. Malarial fevers accounted for 15·08 per 1000, nearly half of the total mortality; the number of deaths amounted to 180,544, but this was a considerable improvement on the previous year. No special antimalarial measures were carried out. Plague prevailed in Nagpur town and district, and to a slighter extent in several other places. The Sanitary Commissioner considers that rat destruction is practically a hopeless task and mere waste of money.

Punjab.—North-West Frontier Province.

The report on sanitary administration in the Punjab for 1909 is of a much more satisfactory character than that for the previous year. The climatic conditions were generally favourable to the public health, there was comparatively little malaria, food was cheap, and the general prosperity increased. The death-rate, 30·89 per 1000 (as compared with 50·73 for 1908), was the lowest since 1900. Cholera and small-pox were not extensively prevalent. There was a slight increase in plague; the value of inoculation is not recognised by the population at large, and in regard to rat destruction they are apathetic. It is stated, however, that the country people are showing a gradual tendency to evacuate infected villages of their own accord. The severe malarial outbreak of the previous year did not come to an end until the spring of 1909, but the rest of this year was singularly free from the disease; quinine distribution is carried out on a large scale. It is noted with satisfaction that the municipal committee of Lahore is active in taking measures to improve the sanitary condition of the city, and that the general public are more alive to the importance of sanitation than they used to be.

The North-West Frontier Province had a satisfactory sanitary record in 1909: the death-rate, 26·6 per 1000, was the lowest returned since the formation of the province, and lower than any other in India for the year, except Madras. It is noted that vaccination is now fairly well accepted by the people; the small-pox mortality has fallen to 0·32 per 1000.

Burma.

In Burma there was an increase in mortality in 1909 over the two previous years, the death-rate from all causes being 30·18 per 1000; this increase was confined to Upper Burma, where the rate was 34·81, Lower Burma having a rate of only 27·70; the cause for the increase was prevalence of cholera, fevers, and plague in the Upper Province. Major C. E. Williams, I.M.S., Sanitary Commissioner, gives considerable attention to the very high mortality of infants under one year, 222 per 1000; but the conclusion arrived at is that the registrations of birth are incorrect. Though Lower Burma suffered less from cholera than in the previous year, in Upper Burma there was a heavy mortality in nearly all areas; the fact is, the water-supplies are everywhere open to pollution. Mandalay experienced a sharp outbreak with 795 deaths.

The river water is preferred to the well water for drinking by a large proportion of the townspeople, and the water-carriers fill their barrels at that point where native shipping congregates. "It appeared on inquiry," says the Sanitary Commissioner, "that legal powers do not exist to prevent the water-carriers from taking water for sale from any point of the river bank which they find most convenient." It seems to us that whether they had legal powers or not, the municipal or police authorities might have prevented this obviously dangerous practice and saved a large proportion of the 795 lives lost; the legality could have been argued out afterwards. Mandalay also suffered severely from plague, there having been 2366 deaths. In regard to the province generally it is stated that no marked advance was effected in protecting the town and country populations from plague, local sanitary action and rat destruction only being adopted after the presence of plague in a locality was recognised. The only measure of real value after the appearance of the disease is considered to be evacuation, which was carried out with good effect in several districts. In Rangoon more than a lakh of rupees was paid to the public for rat destruction during the year. It is pointed out that for less than half this sum a properly organised municipal establishment for the purpose could have been maintained, fraud having been practised by the public, by bringing in rats from outside in order to claim the reward. Experiments conducted by Captain R. D. Saigol, I.M.S., at Maymyo resulted in the preparation of a virus for rat destruction which retained its efficacy for apparently an indefinite period, and which was intended to be extensively used during the ensuing quiescent season.

Eastern Bengal and Assam.

From the report on the province of Eastern Bengal and Assam, by Major E. Wilkinson, I.M.S., Officiating Sanitary Commissioner, we learn that the most noticeable feature in the vital statistics for 1909 was an increase in the mortality from small-pox, which rose to 0·79 per 1000, being most prevalent in the rural areas, where it was more than three times the decennial average. In the Rangpur district, in some villages whole families were swept away, these places being those where the inhabitants persistently declined vaccination. The total death-rate was 33·89, fevers contributing 24·56 per 1000; this coincided generally with an excessive rainfall. Following on some recommendations by Dr. C. A. Bentley, changes both in the form of quinine issued and its method of distribution are now being adopted. Instead of the doses of quinine that have hitherto been sold or distributed gratis it is proposed to issue "treatments," each containing 20 four-grain tablets of the hydrochloride, packed in a glass phial with directions for use, and instructions as to personal prophylaxis. This is the method that has been carried out so successfully by the Italian Government. Anti-malarial operations were undertaken vigorously at Dinajpur and elsewhere; the results were not so successful as had been hoped for, but were encouraging; at Dinajpur fevers accounted for 59·47 per cent. of the total mortality, against 81·29 for the preceding five year-period, but Captain D. P. Goil, I.M.S., confesses to have been disappointed to find breeding places which had been cleaned and thoroughly kerosined still swarming with mosquito larvæ.

A valuable supplement is issued with this report, containing the results of special investigations into outbreaks of plague, cholera, beri-beri, and epidemic dropsy; also reports on water-supplies and drainage schemes. The papers are after the manner of those in the appendix to the report of the medical officer to the Local Government Board. The accounts of two outbreaks of pneumonic plague, in which Captain C. A. Gourlay, I.M.S., carefully traces the course of the infection, are most interesting; in Eastern Bengal no trace of rat infection was found, neither has bubonic plague ever spread epidemically, but the pneumonic outbreaks have been most virulent. Captain Gourlay also describes an outbreak of cholera, and states that he has been informed on good authority that fakirs have a system of blackmail: they demand money to prevent a village getting cholera, and if not satisfied deliberately infect the wells. An outbreak of epidemic dropsy at the Dacca lunatic asylum in 1908 is described both by Captain M. F. Reaney, I.M.S., and Lieutenant-Colonel R. N. Campbell, I.M.S. There were 158 cases, occurring within 15 days, in a population of 270. Colonel Campbell attributed it to some rust or fungus growth on the rice consumed, this poison having a special effect on the sympathetic system; Captain Reaney considered it might be of the nature of a food poisoning, though no particular article could be blamed. Captain T. H. Delaney, I.M.S., investigated the prevalence of beri-beri in the jails of the province, and came to the conclusion that none of the epidemic outbreaks of dropsy during recent years have been true beri-beri, there having been no true paralysis or anæsthesia; but that the disease in question was infectious dropsy spread by means of bed bugs. Two valuable papers are contributed by Dr. Bentley and Major Wilkinson on Practical Points of Quinine Prophylaxis. The records of investigations contained in this Blue-book (price 11 annas, or 1*s.*) should be in the hands of all medical officers engaged in sanitary work throughout India. It is to be hoped that the volume is as widely known and accessible as it deserves to be.

(To be continued.)

Public Health.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the Sanitary Circumstances and Administration of Bakewell Rural District,[1] by Dr. REGINALD FARRAR.—This report relates to a large area in the north of Derbyshire, which comprises many villages and hamlets well known to visitors to "The Peak." Particular attention is directed to the condition of local water-supplies, some of which are by no means satisfactory. Thus at Elton the supply consists only of a public dip-well, inconvenient of access, failing in dry weather, and fed by a spring which is liable to pollution. Pure water-supplies are needed at Monyash to replace the existing roadside reservoir and public wells; at Flagg, where water is drawn by bucket and windlass from the bottom of an old lead shaft, and is hard and subject to contamination; and at Earl Sterndale, where the villages depend chiefly upon rain-water collected from the roofs and at other places. The main village of Eyam derives its water from seven public troughs, fed by streams which in most cases are liable to surface pollution, while the water issuing from the troughs is often reduced to a mere trickle, so that the process of obtaining half a gallon of water occupies several minutes. There is, however, an abundance of excellent water in springs on the hillside above Eyam which should be made available for a public supply and piped to the houses. In several of the parishes in the district public supplies of a satisfactory kind have been provided. Where water is derived from moorland sources and is liable to act on lead, special care has to be taken to apply an appropriate treatment, such as the addition of lime, before it enters the service pipes. Neglect of this precaution in the case of the Stoke Flat water has on more than one occasion resulted in the occurrence of lead poisoning among the consumers. Bakewell rural district is included in the Haddon joint hospital district, established by the Derbyshire county council in 1897 under the Isolation Hospitals Act, 1893. The joint hospital board, which includes representatives of nine sanitary districts, has during the past 13 years considered and rejected ten sites for the construction of its hospital. The temporary arrangements made during this period of deliberation have been quite inadequate. Six beds rented at the Whitworth Hospital at Darley Dale appear to be the only provision available for the reception of infectious cases in this part of Derbyshire.

On the Sanitary Circumstances and Administration of the Borough of Bridgnorth,[2] by Dr. F. ST. GEORGE MIVART.—Stress is laid in this report on the dangers of a filtered water-supply derived from the Severn. The intake is only about 50 yards below the point where the Cantern brook, recipient of the effluent from the borough sewage works and the washings of the town refuse tip, flows out, while the river above the intake receives polluting matter at other points. The filtration formerly took place in sand filters; recently it has been effected by the experimental use of pressure filters, estimated to be capable of filtering 250,000 gallons in ten hours. This Severn supply is intended to be used for purposes other than drinking, and a duplicate supply of spring

[1] Reports to the Local Government Board on Public Health and Medical Subjects. New Series, No. 37. London: Wyman and Sons; Edinburgh: Oliver and Boyd; Dublin: E. Ponsonby. Price 4*d.*

[2] Ibid, No. 25. Price 3*d.*

water of good quality is also laid on to the town. The Severn water, however, has undoubtedly hitherto been used for drinking, and in Dr. Mivart's view is likely to be so used even more in the future. The population of the borough of Bridgnorth has not shown any increase in recent years, a circumstance to which the unsatisfactory character of some of the older house property and the general shortage of houses probably contribute. Dr. Mivart found that the need for cottages for the labouring population, particularly for such as have families, was very great. The shortage was not confined to dwellings for the poorer class. Rents are high—in some cases remarkably so, considering the accommodation afforded. An unsuccessful attempt was made by the town council some years ago to proceed with a scheme for erecting working class dwellings; it would seem in the interest of the town to make effective progress in this matter.

On the Sanitary Circumstances and Administration of the Clutton Rural District,[3] by Dr. R. J. REECE.—As in many other rural areas on which reports have been made by inspectors of the Local Government Board, the district of Clutton suffers from insufficiency of housing accommodation. Although a considerable amount of building is now being carried on in the larger villages, nevertheless, in these as well as in the more rural parts, people were found occupying houses so insanitary and so dilapidated as to constitute "uninhabitable" houses. Most of them live in these conditions because they cannot find more suitable houses to move to; and they are permitted so to live lest by their ejectment overcrowding in other houses should be brought about. The demand for more dwellings is increased by coal-mining operations in the district, which will probably be extended and so increase the demand. By the terms of the Housing and Town Planning Act the district council can provide house accommodation for miners working at the coal-pits, and Dr. Reece indicates that this course should be followed if the necessary housing is not forthcoming through private enterprise. The greater part of the district is now served by public water-supplies, but the water available is in certain instances liable to possible pollution. In an important supply termed the "eight parishes," furnished by pumping from a well at Gurney Slade, the danger lies in polluting matters being drawn to the well from villages which appear to lie on the gathering area, and from the existence in this part of the country of numerous "swallow-holes" and fissures in the strata which may be the receptacles of sewage from houses and groups of dwellings.

On the Sanitary Circumstances and Administration of the Holywell Registration District,[4] by Dr. E. P. MANBY.—As a result of an extensive and detailed inquiry in this registration district, which comprises the larger part of the county of Flint, Dr. Manby makes a strong recommendation in favour of the appointment of a whole-time medical officer of health. "At present, in the Holywell Registration District six district councils profess to combat insanitation and infectious disease with the aid of four medical officers of health and seven inspectors of nuisances. Each medical officer is entirely independent of the others, and each inspector is practically independent, not only of the other inspectors and medical officers, but of the medical officer of his own district. In result, uniformity and continuity of action in health matters are wanting." Examples are given of the numerous shortcomings of the several districts referred to, and there can be little doubt that the present arrangements have been wasteful and inefficient. A scheme for combination is given, and the arguments habitually used against such appointments are set out and dealt with in a way which should facilitate agreement between the districts concerned, if they are disposed to come together in the absence of action by the Local Government Board which would oblige them to make the arrangements recommended.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 77 of the largest English towns 7851 births and 4250 deaths were registered during the week ending Nov. 5th. The annual rate of mortality in these towns, which had been equal to 13·0 per 1000 in each of the two preceding weeks, rose to 13·1 in the week under notice. During the first five weeks of the current quarter the death-rate in these towns averaged 13·0 per 1000. In London the death-rate during the same period, calculated on the probably over-estimated population, did not exceed 12·7 per 1000. The lowest reported annual death-rates last week in these 77 towns were 5·7 in West Hartlepool, 6·3 in Willesden, 6·4 in Warrington, and 6·7 in East Ham; the rates in the other towns ranged upwards to 18·8 in Wigan, 19·4 in Tynemouth, 19·5 in Swansea, and 20·5 in West Bromwich. In London the reported death-rate last week did not exceed 13·1 per 1000. The 4250 deaths from all causes registered in the 77 towns last week showed a further slight increase of 28 upon the numbers in the two preceding weeks, and included 361 which were referred to the principal epidemic diseases, against 504 and 425 in the two previous weeks; of these 361 deaths, 123 resulted from diarrhœa, 101 from measles, 46 from diphtheria, 32 from whooping-cough, 30 from scarlet fever, and 29 from enteric fever, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the 77 towns last week was equal to 1·1 per 1000, against 1·6 and 1·3 in the two previous weeks. No death from any of these diseases was registered last week in Walthamstow, South Shields, Stockport, Hornsey, Huddersfield, or in eight other smaller towns; the annual death-rates therefrom ranged upwards, however, to 2·5 in Barrow-in-Furness, 2·9 in Stockton-on-Tees, 3·2 in St. Helens, and 3·6 in Brighton. The deaths attributed to diarrhœa in the 77 towns, which had declined in the nine preceding weeks from 527 to 184, further fell last week to 123, and were lower than in any week since the middle of August; the highest annual rates from this cause in the 77 towns last week were 1·4 in Oldham, 1·6 in Brighton, and 2·4 in York. The fatal cases of measles, which had been 75 and 107 in the two previous weeks, declined again last week to 101; they caused the highest annual rates, 1·6 in Brighton and in St. Helens, and 1·8 in Tynemouth. The 46 deaths referred to diphtheria showed a further increase of 4 upon the numbers in recent weeks, and included 9 in London and its suburban districts, 3 in Stoke-on-Trent, 4 in Liverpool, 3 in Leeds, and 2 each in Birmingham, Derby, Birkenhead, Manchester, Burnley, Sheffield, and Hull. The 32 fatal cases of whooping-cough showed a further decline from recent weekly numbers, but caused an annual rate equal to 1·9 in Stockton-on-Tees. The deaths from scarlet fever, which had been 26 and 27 in the two preceding weeks, further rose last week to 30, of which 6 occurred in Liverpool and 3 each in Birmingham, Manchester, and Leeds. The 29 deaths referred to enteric fever were within one of the number in the previous week, and included 3 in Manchester and in Bradford, and 2 each in Portsmouth, Stoke-on-Trent, and Rhondda. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily increased in the 11 preceding weeks from 1423 to 1847, had further risen to 1856 on Saturday last; 188 new cases of this disease were admitted to these hospitals during last week, against 234, 231, and 221 in the three preceding weeks. The 1226 deaths from all causes in London last week included 246 which were referred to pneumonia and other diseases of the respiratory system, against 162, 194, and 234 in the three preceding weeks, but were 17 below the corrected average number in the corresponding week of the five years 1905–09. The causes of 33, or 0·8 per cent., of the deaths registered during last week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, Salford, and in 50 other smaller towns; the 33 uncertified causes of death in the 77 towns included 7 in Liverpool, and 2 each in Manchester, Nottingham, Sheffield, and South Shields.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 796 births and 492 deaths were registered during the week ending Nov. 5th. The annual rate of mortality in these towns, which had been equal to 13·0 and 12·7 per 1000 in the two preceding weeks, rose to 13·6 in the week under notice. During the first five weeks of the current quarter the death-rate in these eight towns averaged 13·3 per 1000, and exceeded by 0·3 the mean rate during the same period in the 77 largest English towns. The annual

[3] Ibid., No. 31. Price 5d.
[4] Ibid., No. 29. Price 3d.

death-rates in the eight Scotch towns last week ranged from 8·4 and 9·9 in Perth and Greenock, to 14·4 in Leith and 16·6 in Dundee. The 492 deaths from all causes in the eight towns last week showed an increase of 32 upon the number in the previous week, and included 56 which were referred to the principal epidemic diseases, against 63, 47, and 48 in the three preceding weeks; of these 56 deaths, 23 resulted from diarrhœa, 16 from diphtheria, 7 from whooping-cough, 6 from scarlet fever, 3 from "fever," and 1 from measles, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the eight towns last week was equal to 1·5 per 1000, and exceeded by 0·4 the rate from the same diseases in the 77 English towns. The deaths attributed to diarrhœa in the Scotch towns, which had declined in the five preceding weeks from 51 to 25, further fell last week to 23; they included 8 in Dundee, 6 in Glasgow, 5 in Edinburgh, and 2 in Leith. The 16 deaths referred to diphtheria exceeded the number in the previous week by 9; 7 occurred in Glasgow, 6 in Dundee, and 2 in Edinburgh. The 7 fatal cases of whooping-cough all of which were recorded in Glasgow, showed a slight increase upon recent weekly numbers. Of the 6 deaths from scarlet fever, 3 were returned in Glasgow. The 3 deaths referred to "fever" corresponded with the number in the previous week, and included 2 from enteric fever in Glasgow and 1 of cerebro-spinal fever in Dundee. The fatal case of measles occurred in Edinburgh. The deaths referred to diseases of the respiratory system in the eight towns, which had been 80 and 72 in the two preceding weeks, rose to 84 last week, but were 24 below the number in the corresponding week of last year. The causes of 17, or 3·5 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,799 persons, 564 births and 334 deaths were registered during the week ending Nov. 5th. The mean annual rate of mortality in these towns, which had been equal to 16·9, 17·4, and 16·8 per 1000 in the three preceding weeks, declined to 15·1 in the week under notice. During the first five weeks of the current quarter the annual death-rate in these Irish towns averaged 16·4 per 1000; the mean rate during the same period did not exceed 13·0 in the 77 largest English towns and 13·3 in the eight principal Scotch towns. The annual death-rate during last week was equal to 18·1 in Dublin (against 13·1 in London), 14·4 in Belfast, 11·0 in Cork, 10·8 in Londonderry, 23·2 in Limerick, and 7·8 in Waterford; the mean annual death-rate last week in the 16 smallest of these Irish towns did not exceed 12·4 per 1000. The 334 deaths from all causes in the 22 town districts last week showed a further decline of 38 from the numbers in the two preceding weeks, and included 28 which were referred to the principal epidemic diseases, against 42 and 33 in the two preceding weeks; these 28 deaths were equal to an annual rate of 1·3 per 1000, the rate from the same diseases last week being 1·1 in the 77 English towns and 1·5 in the eight Scotch towns. The 28 deaths from these epidemic diseases in the Irish towns last week included 14 from diarrhœa, 4 from measles, 4 from scarlet fever, 3 from diphtheria, 2 from "fever," and 1 from whooping-cough, but not one from small-pox. The deaths attributed to diarrhœa, which had been 20 in each of the two preceding weeks, declined last week to 14, of which 5 occurred in Dublin and 6 in Belfast. The 4 fatal cases of measles included 3 in Belfast; and of the 4 deaths from scarlet fever, 3 occurred in Dublin and 1 in Belfast. The 3 deaths from diphtheria corresponded with the number in the previous week. A fatal case both of typhus and enteric fever was registered in Dublin. The deaths in the 22 towns last week included 60 which were referred to pneumonia and other diseases of the respiratory system, against 63 and 66 in the two preceding weeks. The causes of 11, or 3·3 per cent., of the deaths registered last week in the Irish towns were not certified; in the 77 English towns the proportion of uncertified deaths last week did not exceed 0·8 per cent., while in the eight Scotch towns it was equal to 3·4 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeon: G. A. Dreaper to the *Hawke* for voyage out, and to the *Hermes*, on recommissioning. Staff-Surgeon: R. H. Mornement to the *Eclipse*, on recommissioning. Surgeons: D. D. Turner to the *Hawke*, for voyage out, and to the *Hermes*, on recommissioning; D G. Addison-Scott to the *Imogene*, additional, and on recommissioning; C. R. M. Baker to the *Pomone*, additional, for Dartmouth College; J. H. Wright to the *Antelope;* and W. C. B. Smith to be lent temporarily to R.M. Division, Portsmouth.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant William M. Browne to be Captain (dated August 1st, 1910). Lieutenant John H. Bell is confirmed in his rank.

ROYAL ARMY MEDICAL CORPS.

Colonel J. C. Culling, on arrival home from Bermuda, has been appointed Administrative Medical Officer of the Western Command. Lieutenant-Colonel J. Maher has been transferred from Potchefstroom to Wynberg and appointed to the medical charge of the military hospital. Lieutenant-Colonel J. M. Irwin, from Woolwich, has joined for duty at Tientsin and taken over the appointment as Senior Medical Officer to the Forces in North China, vice Major A. C. Fox. Lieutenant-Colonel S. G. Allen, recruiting medical officer, London District, has embarked for a tour of duty at Gibraltar. Lieutenant-Colonel J. J. Russell has taken up the duties of Staff Officer to the Principal Medical Officer of the Southern Command in place of Major G. B. Stanistreet, whose tenure of appointment has expired. An exchange of stations in India has been sanctioned by the War Office between Lieutenant-Colonel G. E. Hale, D.S.O., and Major W. W. O. Beveridge, D.S.O. Major W. P. Gwynn has been appointed Embarkation Medical Officer at Karachi for the trooping season of 1910–11. Major B. J. Innis has been granted leave on private affairs from Nov. 7th to Dec. 26th, with permission to travel in the West Indies. Major E. A. Burnside, from Tidworth Park, has been posted to Golden Hill. Major E. G. Browne has embarked for a tour of service in India from the Dublin District. Major B. W. Longhurst, from Warley, has taken up duty at Ashton. Major F. J. Wade-Brown, from Cork, has been posted to Kilworth Camp. Major E. S. Clark has been transferred from Ballykinler Camp to Belfast. Major J. McD. McCarthy has joined at Chester from Chapel Bay Camp. Major J. B. Anderson, from the London District, has been appointed Embarkation Medical Officer at Southampton. Captain C. A. J. A. Balck has been selected for appointment as Specialist in Physical Training for the Irish Command and posted to the Curragh Camp, vice Captain H. A. Davidson, who reverts to ordinary duty. Captain C. S. Smith, from Mullingar, has been posted to Donard Camp. Captain J. T. McEntire, from Chilwell Camp, has joined at Newcastle. Captain H. F. Shea has left the London District for a tour of service in India. The following officers, on conclusion of their course of instruction for promotion at the Royal Army Medical College, have been posted as follows: Captain W. L. Steele to Tidworth Park, Captain W. Riach to the London District, Captain A. R. C. Parsons to the Scottish Command, Captain J. H. R. Winder to Shorncliffe, and Captain D. L Harding to Belfast. Captain E. M. O'Neill has been transferred from Jhansi to Nowgong. Captain B. A. Craig has arrived home on leave from Hong-Kong. Lieutenant J. C. L. Hingston, from Tidworth Park, has embarked for service in India. Lieutenant F. H. Somers-Gardner, from Hilsen, has joined for duty at Cosham.

INDIAN MEDICAL SERVICE.

Colonel J. A. Cunningham, civil surgeon of Lahore, has been selected for the appointment of Inspector-General of Civil Hospitals in the Central Provinces in succession to Colonel P. A. Weir, who has completed the tenure of his appointment. Lieutenant-Colonel J. R Adie, civil surgeon of Ferozopore, has been placed on special duty in connexion with the investigation of antimalarial measures in the Punjab. Major F. O'Kinealy, civil surgeon of Simla, has arrived home from India preparatory to taking up his

appointment as Surgeon on the staff of H.E. the Viceroy-elect of India. Major G. Lamb, Bombay, has been granted four months' extension of his leave on medical certificate. Major G. Hutcheson, on completion of a special course of instruction at the Central Research Institute, Kasauli, has been posted as Civil Surgeon to Aligarh. Captain C. Dykes has received an extension of his leave home from India. The services of Captain W. Lapsley have been placed at the disposal of the Government of the United Provinces. Captain G. Holroyd, Captain A. W. Greig, Captain W. M. Houston, and Captain C. E. Southon, Bombay, have arrived home on leave from India. Captain S. R. Christophers has been appointed Assistant to the Director of the Central Research Institute at Kasauli. Captain W. S. Patton and Captain T. H. Gloster have been appointed to the Bacteriological Department. The services of Captain S. B. Mehta have been placed by the Commander-in-Chief at the disposal of the Government of India for employment at Amritsar. Captain J. W. Little has been granted eight months' combined leave home from India. Lieutenant J. A. Shorten has been appointed Specialist in Radiography and Electrical Science to the Second (Rawal Pindi) Division.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st East Anglian Field Ambulance, Royal Army Medical Corps: Lieutenant Octavius Roberts Ennion, from the list of officers attached to units other than medical units, to be Lieutenant (dated Oct. 3rd, 1910).

2nd Lowland Field Ambulance, Royal Army Medical Corps: Lieutenant David Shannon to be Captain (dated Sept. 15th, 1910).

Attached to Units other than Medical Units.—Lieutenant-Colonel and Honorary Surgeon-Colonel James B. Ronaldson resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated Nov. 9th, 1910).

For attachment to Units other than Medical Units.—Jacob Frederick Farrow to be Lieutenant (dated Sept. 6th, 1910).

DEATHS IN THE SERVICES.

Brigade-Surgeon J. M'Neill Beatty, A.M.D. (retired), on Oct. 27th, aged 82 years. He entered the service in 1854 as assistant surgeon and became surgeon in 1867, retiring with the honorary rank of brigade surgeon in 1880.

Deputy Surgeon-General C. Graves Irwin, late Army Medical Staff, on Oct. 23rd, aged 79 years. He joined the service in 1854, becoming surgeon in 1863, surgeon-major in 1873, brigade-surgeon in 1880, and Deputy Surgeon-General in 1884, retiring in 1891. He served in the Eastern campaign of 1854–55, and was present at the battle of the Alma and at the siege and fall of Sevastopol (medal with two clasps and the Turkish medal).

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

Among the papers in the November issue of the *Journal of the Royal Army Medical Corps* is one by Colonel Sir David Bruce, C.B., F.R.S., Captain A. E. Hamerton, D.S.O., R.A.M.C., Captain H. R Bateman, R.A.M.C., and Captain F. P. Mackie, I.M.S., on "Muhinyo,"[1] a disease of the natives of Uganda, which has its principal focus along the eastern shore of Lake Albert Edward. The disease is characterised by fever, profuse sweating, pain in the joints and along the course of nerves, swelling of the various joints, especially the ankles, and extreme weakness and emaciation. The writers conclude (1) that "Muhinyo" is Malta fever, and (2) that it is conveyed from the goat to man by the drinking of goat's milk. The Medical History of the South African War is continued by Lieutenant-Colonel R. J. S. Simpson, C.M.G., R.A.M.C., and Recruiting in the German Army is the subject of a paper by Captain J. A. Black, R.A.M.C.

[1] Reprinted from the Proceedings of the Royal Society.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.—The annual dinner of the Royal Free Hospital and School of Medicine for Women will be held at the Trocadéro Restaurant, Piccadilly-circus, on Dec. 14th. Price of tickets, 7*s.* 6*d.* Mr. E. W. Roughton will take the chair. Applications for dinner tickets should be sent to the honorary secretaries, Dr. A. G. Phear, 47, Weymouth-street, W., or Mr. T. P. Legg, 139, Harley-street, W., not later than Dec. 1st.

Correspondence.

"Audi alteram partem."

THE ECONOMIC ASPECT OF SANATORIUM TREATMENT.

To the Editor of THE LANCET.

SIR,—I have to thank you for your kind and appreciative notice of my annual report which appeared in THE LANCET of August 13th. In that report I endeavoured to show that an expenditure of £500 not only makes 24 men wage-earners for nine months and postpones and diminishes their chargeableness to the guardians in that time, but it also makes eight men permanent wage-earners and saves an expense from the rates within the next ten years of £1820. This conclusion you criticised on the ground that there was not sufficient evidence to show what would have happened to the wage-earners if they had not gone to the sanatorium. As you say, all depends upon the nature of the cases on admission. In order to test the justification of your criticism I have been at some pains to find out what has occurred in notified cases of consumption who did not go to the sanatorium. This inquiry has taken some time, hence the delay in sending this letter.

I have endeavoured to follow up 278 cases who were notified in the years 1905–06, cases which went to the Peppard Sanatorium being excluded. To make this class of notified cases comparable with the cases which went to Peppard Sanatorium it is desirable also to deduct all cases which died within three months of notification, for most of such would no doubt have been considered unsuitable for sanatorium treatment. There were 88 who died within three months. This leaves 190 notified cases who did not go to the sanatorium but lived three months after notification. Of these it was found on inquiry in October that 100 had died and 16 were still alive, leaving 74 who could not be traced. Assuming that the proportion of dead and alive among the 74 is as 100 to 16, we have an estimated total of 164 dead and 26 alive. Thus 14 per cent. of the notified cases are estimated to be alive. Taking now the Peppard Sanatorium cases in the same years 1905–06 we find there were 50 notified cases, of whom 21 are known to be alive and 22 dead. Of the 7 unaccounted for several went to Canada and are probably living there. Estimating that 25 are alive we have 50 per cent. of sanatorium cases alive compared with 14 per cent. of other notified cases. I think this result justifies, to a large extent, my statement that most of the men who went to the Peppard Sanatorium would have died within two or three years but for the sanatorium. It is true a certain amount of selection is exercised in sending cases to the sanatorium. No case is sent which appears likely to die within three months' time. Febrile cases are sent if, after a rest of a few days in bed, their evening temperature is below 100°. Cases are not sent when they have advanced disease affecting three lobes on one side of the chest, nor advanced disease affecting one lobe on each side; but cases are sent with fairly advanced disease on both sides. Practically no men have been sent to the sanatorium who were capable of work at the time they were sent. In the large majority of cases work had been discontinued. In a few cases, though work had not been discontinued, it was highly desirable that it should be. One case had been discharged from the dockyard, and many others would have been discharged from work in the arsenal except for the prospect that sanatorium treatment would enable them to resume work. Among those who did not go to the sanatorium, although there were a certain number of cases too advanced for admission, there were, on the other hand, many cases of mistaken diagnosis, whereas all the cases found not to be tuberculous were excluded from the sanatorium cases. It must be remembered also that many who did not go to Peppard Sanatorium went to some other sanatorium, and many of those who went to the workhouse infirmary had the advantage of open-air treatment there.

The Woolwich cases are sent to Peppard in the first instance for one month only. Very few stay as long as six months, and none longer, unless they become "working patients" and maintain themselves at the sanatorium. This

arrangement enables patients to be discharged if it is found that they are not likely to benefit at the sanatorium, and encourages the sending of more advanced cases than would be sent if there were a fixed duration of stay of from 3 to 6 months. The average duration of stay in 1909 was 2½ months. It is, as you point out, difficult to give figures which absolutely prove the benefit of sanatorium treatment, but although experience shows the limitations of this treatment it also more and more convinces me of its decided advantages.—I am, Sir, yours faithfully,

SIDNEY DAVIES, M.D. Oxon.,
Medical Officer of Health of Woolwich.

Nov. 3rd, 1910.

ACUTE ANTERIOR POLIOMYELITIS AFTER BATHING.

To the Editor of THE LANCET.

SIR,—I have read with interest the records of two cases published in THE LANCET of Oct. 8th, p. 1083, by Mr. C. R. Sutherland and Dr. W. Robinson, in which paralysis, regarded as acute anterior poliomyelitis, developed in two brothers after bathing in the river Wear. Three years ago I saw in consultation a case of paralysis of all four limbs which presented the clinical features of acute anterior poliomyelitis, and terminated fatally. The boy had spent two hours in the water in a public swimming bath in Manchester one September afternoon. Next day he was unwell, and was never able to attend school afterwards. At first there were slight febrile symptoms and headache, suggesting commencing meningitis; but at the end of a week paralysis of both legs developed, the knee-jerks and tendo Achillis reflexes were lost, the arms and intercostals became paralysed a few days later, and death occurred from respiratory paralysis. There was no anæsthesia, and the bladder and rectum were not affected. Though no necropsy was obtained, I have no doubt the case was one of acute anterior poliomyelitis. A school friend of this boy was with him at the swimming bath and spent about the same time in the water. He also was unwell from that time. I did not see this case, but he died the day after the patient whose history I have just briefly recorded. A definite diagnosis had not been made, but I have heard that the symptoms pointed to an acute affection of the nervous system.

Twenty years ago I recorded a case of acute anterior poliomyelitis in a young adult. His illness directly followed a visit to a public swimming bath, and the patient regarded this as the cause of his paralysis; but at that time I regarded it as a mere coincidence. The disease terminated fatally. I examined the spinal cord microscopically and found the typical changes of acute anterior poliomyelitis. Allen Starr states in his book, "Organic Nervous Diseases" (London, 1903), that he has seen "several children who were attacked with infantile spinal paralysis subsequent to long-continued bathing in cold water during the summer." Much light has been thrown on the etiology and pathology of acute anterior poliomyelitis by observations during the recent epidemics of the disease in Norway, Sweden, Germany, and America, and by the recent experiments on animals (Landsteiner and Popper, Flexner and Lewis, and others), which have clearly proved that the disease can be transmitted to monkeys by the injection of an emulsion of the diseased human spinal cord. From the experiments and observations of Landsteiner and Levaditi, and of Flexner and Lewis, and others, it appears probable that the poison is transmitted by the salivary and nasal secretions, and that it enters the system through the mucous membrane of the nose, fauces, and alimentary canal. Much is still obscure, however, with regard to the exact cause of the disease. Of course, it is only in very rare cases that the disease has followed bathing, but such cases are worthy of careful investigation in the future. It is possible that a poison in the water may enter the system through the nose or fauces whilst bathing, or that the long exposure of the system to cold may lower its resisting power and make it more susceptible to the action of micro-organisms; but it appears very improbable that in the few cases on record the development of the disease after bathing has been a mere coincidence.

I am, Sir, yours faithfully,

Manchester, Nov. 8th, 1910. R. T. WILLIAMSON.

EFFICIENT VENTILATION.

To the Editor of THE LANCET.

SIR,—If Dr. Th. Glover Lyon would be good enough to repeat his experiment of entertaining his 20 guests in a room 20 feet by 15 feet by 10 feet, and will observe the wet bulb when he cuts off the air-supply, and then cool the air in the room instead of replenishing the air, he would find, I think, that the discomfort of his guests varies with the wet-bulb temperature, and has nothing to do with the chemical purity of the air. Before taking refuge in his hypothetical "spiral toxes" we must eliminate, I think, the potent cause of our discomfort—a high wet-bulb temperature. This is particularly uncomfortable to one who has his temperature sense organs adapted to a cooler atmosphere. It is, I believe, owing to the curious "adaptation" of the temperature sense organs that we are so struck with the unpleasantness of hot crowded rooms when coming into them from fresh air. When "set" for warmth we do not like a draught of cold air, when "set" for cool air we do not like warm moist air. Not only do the temperature sense organs adapt themselves to the surroundings, but the olfactory sense quickly fatigues; thus the sewer man does not notice the smell after a few minutes in the sewer, neither do the guests in a crowded room. There is very great relief to be had from fans in conditions where pure air cannot be obtained, and I would urge most strongly this simple means on all who cannot instal expensive and often useless systems of ventilation. The point I insist on, following in the steps of Dr. John Haldane, is that our efforts should be directed towards keeping down the wet-bulb temperature. A good ventilation, of course, brings down the wet-bulb temperature. Until the heat factor has been eliminated we have no right to talk of mysterious poisons in the air of crowded rooms, for the unpleasant skin sensations arising from hot moist air have a most profound effect on our mental well-being. I agree with Dr. John Haldane that the wet-bulb temperature should not be allowed to exceed 70°–75° F. for the comfort of workers to be secured. Cool air is, I venture to maintain, more important than chemically pure air in our dwellings and factories.

I am, Sir, yours faithfully,

LEONARD HILL.

London Hospital Medical College, Nov. 8th, 1910.

FIRST OPERATION UNDER ETHER.

To the Editor of THE LANCET.

SIR,—I am much obliged for your reference to the *Pharmaceutical Journal* for a report of the above, but the house surgeon, Mr. Ransome, incorrectly reported the date. Through the courtesy of the Surgical Registrar of University College Hospital I have had the pleasure of reading the complete notes on the case of Churchill. These notes are full and taken on consecutive days. The day of the operation was Monday, Dec. 21st, 1846. It was on Saturday, Dec. 19th, that Dr. Boot wrote to Liston as to the success of the anæsthesia produced by ether. On that day Mr. Robertson, a dentist, removed some teeth, having previously administered ether (see Buxton's "Anæsthetics"). Dr. Boot immediately wrote to Liston, sending him at the same time the account from America, and he at once called on his friend Peter Squire, the chemist in Oxford-street, saying, "You must fix up something so that we can try this as soon as possible." This was told me by Mr. Squire's son, to whom his father had often repeated the tale. I have heard from two surviving witnesses of the operation, and one of them is clearly of opinion that the day "was a Monday in December." I think the mistake is quite easily understood. The surgeon's visiting days in Ward 1 have always been Mondays, Wednesdays, and Fridays. It is easy for a busy man to forget which was the one when writing from memory, even if it is only a few days after. I am, Sir, yours faithfully,

F. WILLIAM COCK.

Porchester Houses, Porchester-square, W., Nov. 3rd, 1910.

*** In the *Pharmaceutical Journal*, Vol. VI., No. 8, Feb. 1st, 1847, p. 350, Mr. Squire himself published an account of the apparatus constructed by him for the inhalation of the vapour of ether. At the beginning of that article he refers to "the temporary apparatus which I put

hastily together for Mr. Liston when he performed the first capital operation in this country without a sign even of pain." Illustrations of the apparatus are also published in the same place. Dr. Francis Boott (the London Medical Directory for 1846 misprinted his name as "Francis Booth." His name was really Boott) communicated to THE LANCET of Jan. 2nd, 1847, p. 5 *et seq.*, copies of papers and letters relating to "Surgical Operations Performed During Insensibility." In Dr. Boott's letter, on p. 8, he mentions the extraction of a tooth on Dec. 19th, 1846, by a Mr. Robinson (not *Robertson*), and he also includes a copy of a letter from Mr. Robert Liston to himself, which is dated Dec. 21st, 1846, and commences "I tried the ether inhalation to-day in a case of amputation of the thigh, and in another requiring evulsion of both sides of the great toe-nail.' This confirms Dr. Cock's supposition that Mr. Ransome, the house surgeon, gave the date of the operation wrongly as "Friday, December 18th, 1846, at 2 o'clock."—ED. L.

THE LONDON COUNTY COUNCIL AND MEDICAL FEES FOR SCHOOL ACCIDENTS.

To the Editor of THE LANCET.

SIR,—I have to inform you that the Council has recently had under consideration the question of fees to be paid for the first medical attendance on children who meet with accidents in public elementary schools, and has adopted the following scale, which will come into operation as from 1st December, 1910:—

(*a*) In the case of a child who meets with an accident in the school and who is taken to a doctor's surgery, 3*s*. 6*d*.

(*b*) In the case where a doctor is summoned to the school to attend a child, 5*s*.

Claims in excess of these amounts will, if there are exceptional circumstances, receive special consideration. These fees will be paid by the Council for the first attendance only.

I am, Sir, your obedient servant,

G. L. GOMME,
Clerk of the Council.

County Hall, Spring gardens, S.W., Nov. 9th, 1910.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Manchester Crematorium.

IT is now eight years since the Manchester Crematorium was opened, and during this period 1428 cremations have taken place. In the 12 months ending on August 31st last there were 110 cremations. Some of the subjects were from Manchester and the neighbourhood, but 15 places outside Manchester helped to make up the total. Among these were several of the Lancashire towns and places so far distant as Edinburgh, Penmaenmawr, Macclesfield, Stoke-on-Trent, Aysgarth in Yorkshire, and others. The directors in the annual report urge the need for propaganda in favour of cremation—"as there is still a considerable amount of prejudice and indifference to be overcome." In the course of his speech, Mr. Gustav Eckhard, presiding at the annual meeting of the Manchester Crematorium, Limited, mentioned the fact that many famous men had been cremated during the last 12 months, and touched also on the religious question connected with cremation. He combated the notion that it was an irreverent method of disposing of the dead, and said that "three successive holders of the see of Manchester—Bishops Fraser, Moorhouse, and Knox—had expressed themselves in favour of cremation as a means of disposal of the dead. There are, no doubt, advantages and disadvantages in all modes of putting the dead out of our sight, but in the case of pestilence, infection, or the slaughter of the battlefield, there is no better method of dealing with human remains than that of cremation. Still, there does exist a sentiment, not easily to be overcome, in favour of earth burial, and it will linger as long as England has country churchyards.

A Slot Meter Danger.

Penny-in-the-slot gas-meters are much used by the working classes in our large towns, and usually without accident. A few days ago, however, four children at Stockport had a narrow escape from being asphyxiated from one being used. During the night the supply of gas became exhausted and one of the daughters, before going to work in the morning, put a penny in the slot, not knowing that a light had been left burning in the room where the children were sleeping. The light having gone out, the gas of course escaped into the room, and when the occurrence was discovered, owing to the moaning of the children, they were found to be unconscious. One had to be taken to the infirmary, but happily all recovered in the course of a few hours. It is, perhaps, a wonder that such an accident is not of more frequent occurrence where a penny is put into the "slot" or gas turned on at the meter. At all events, it points to the desirability of seeing to it that no gas taps are left turned on.

Treating Consumption.

The old Chorlton Union Board of Guardians is now called the South Manchester Township Board, and the subject of provision for consumptive cases came under discussion at the last meeting. The board seems to be in earnest as to building a sanatorium, the chairman saying that as the result of advertising numerous sites could be obtained. A letter was read from the sanitary committee of the city council, suggesting an interview with the board on the subject of the treatment of consumptive cases. The feeling on the board seemed to be in favour of proceeding with its own scheme, whatever the corporation might do, as its own efforts and the corporation's would not for a long period meet the demand. There are said to be 5000 or even 6000 cases in Manchester supposed to be curable, the provision for which may well tax all the efforts of the guardians, the corporation, and of private benevolence to deal with, more especially if it is remembered that the father or the mother of the family may be the victim. One of the medical members of the board remarked that "the guardians must deal with the poor, for the corporation would only deal with the lower middle or upper working classes."

The Asylum Difficulty.

The crowded state of the asylums and the consequent detention of dangerous lunatics in workhouses where there is no suitable or sufficient provision for the safe care of such patients is often a topic at meetings of our boards of guardians. At the last meeting of the Prestwich board the clerk drew attention to this "vexed problem of long standing." There were at the time two men in the workhouse certified as fit cases for the asylum, and one of them had just committed two assaults. He (the clerk) had written to the authorities at Winwick, Lancaster, and Prestwich, and the reply from each had been that there was no room for additional male patients. He said "it was a most serious matter, and the workhouse master was having an anxious time of it." The clerk was instructed to write to the Asylums Board in the strongest possible terms in regard to the difficulty. The increase of insanity is a grave national danger.

Cotton Districts Convalescent Fund.

The annual meeting of the governors of the above-named fund, reminding many of the hard times of the Lancashire cotton famine resulting from the American war of North and South, was held on Oct. 28th. Its work, begun nearly 40 years ago, still goes on, for during the nine months ending Sept. 30th 1512 patients were sent to the convalescent hospitals at Southport, Buxton, and Cheadle at a cost of £4209. In the corresponding period of last year 2374 patients were sent at a cost of £4093.

Nov. 8th.

UNIVERSITY OF SHEFFIELD.—The Council at its last meeting appointed Mr. Archibald W. Cuff, F.R.C.S. Eng., to the post of Lecturer on Practical Surgery.

NEWCASTLE-ON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

The Chapel in the Royal Infirmary.

REFERENCE has been made in these columns to the controversy connected with the chapel in the Royal Victoria Infirmary in this city.[1] It may be remembered that, when the new infirmary was erected a few years ago, a chapel was constructed for the institution. This, no doubt, was done following the precedent of the presence of a chapel in the old infirmary from its beginning. This new chapel was consecrated as a Church of England edifice, and enjoyed a brief usage for the ordinary services in vogue in the institution. Other denominations wishing to hold services in the infirmary were allowed the use of the lecture theatre for the purpose. After some little time the question arose as to whether Nonconformists could not have equal rights to conduct their own particular services in the chapel (St. Luke's). After much expenditure of time, talk, and several governors' meetings, and when it had been decided by expert opinion that it would be illegal to use the chapel for Nonconformist services, the entire closure of the edifice was voted at a governors' meeting in February, 1908. On August 27th of this year the quarterly court of governors passed a resolution rescinding the closure of the chapel and "instructing the house committee to reopen St. Luke's Chapel for religious services and to provide facilities for Anglican, Free Church, and such other services as may be required in the interests of patients and staff." The house committee meeting on Sept. 22nd discussed the situation at length, Sir George Hare Philipson presiding. It was eventually resolved that the committee could not carry out the order given at the court in August. The reason for this attitude is found in the opinion of the infirmary's legal advisers that any governor could easily get an injunction against the house committee should they carry out the governors' instructions, and that the cost of such injunction would have to be paid by members of the house committee personally; and further that refusal of members to pay such costs, or, in case of the house committee, refusing to obey the injunction the members might be imprisoned for contempt of court.

The whole situation was discussed again at a special court of governors held on Oct. 22nd, when Sir George Hare Philipson presided. Notice was given previous to the court that Alderman Goolden would move a proposition with a view to settling the difficulty :—

> That a separate chapel be erected and equipped for the use of Nonconformists, and that it be paid for out of the same funds as St. Luke's Chapel was built out of, and that the amount to be so expended shall be similar, if necessary, to the sum paid for the erection and equipment of St. Luke's Chapel.

The result was a stormy meeting, several amendments having been put down on the agenda. In order to clear the way Alderman Goolden withdrew the motion standing in his name in favour of the first amendment, proposed by the Lord Mayor, Sir William Stephenson, who suggested that the question as to the validity of the consecration as an Anglican edifice be settled by the High Court of Justice. He deprecated the continuance of the controversy and wished to get the matter settled once and for all; the cost of this process would be £200 or £300, and in reply to an interruption he said he would settle the bill himself if no one else did. This amendment was carried after opposition, and a committee was appointed to take the question to the High Court.

The account of these proceedings cannot be very edifying to the outside public, especially to that portion which helps voluntary institutions by its support, and no doubt such a public, whatever its individual creed, would prefer a secular hospital to one in which religion has induced so much controversy. There is a large section of the community here which cannot see the necessity for a chapel at all in the infirmary. The average stay of patients is not long, the pressure on the beds is great, and in the vast majority of cases when the patient is well enough to attend services he is well enough to go home, and wants to do so. The opinion of the public is varied: first, as to the wisdom of the house committee in allowing a considerable sum (it is believed about £3000 or £4000) to be spent on a chapel; secondly, in having it consecrated in the Anglican Church, thereby preventing its use by any other denominations; and thirdly, as to the entirely altruistic attitude of the general court of governors concerning religious equality. Many fear that the attitude has been adopted in view of the large proportion of the funds subscribed by the working man. It is to be feared that the working man, as distinct from the poor man, has forgotten the purpose for which the infirmary was built—to relieve the sick and lame poor—and now looks upon his penny and twopence a week as paid in support of a provident institution, to which he contributes and from which he expects to receive return. While the £16,000 contributed last year by the workmen is highly creditable to the subscribers, each man is apt to forget that he and his fellow workers have not contributed to the endowments to the building, which have been from time to time made by charitable people in legacies and gifts. Further, it may be asked if you build a chapel for Nonconformists what are you going to do for the Roman Catholic or for the Hebrew? One speculates as to the appearance of the hospital when it is surrounded by all sorts of little chapels dotted about its grounds, to say nothing of the expense of such a process. The independent and impartial observer, who cuts himself off from all parties and creeds while he forms his judgments, will wish heartily that the matter may be finally closed by the decision of the courts—and if a peaceful solution be not thus reached he would be glad if the chapel might remain closed, or even got rid of altogether.

Nov. 8th.

[1] THE LANCET, March 20th, 1909.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

The Treatment of Consumption in Bristol.

THE Bristol board of guardians has, after several animated discussions, rejected the proposition to buy an estate in Somersetshire, a few miles out of Bristol, for the purpose of equipping it as a sanatorium for paupers suffering from pulmonary tuberculosis. The alternative plan—namely, development of their premises at Southmead, which are already chiefly used for the treatment of phthisis—has been adopted, and a subcommittee appointed to consider ways and means.

Vaccination by the Bristol Board of Guardians.

The latest vaccination returns issued by the Bristol board of guardians show that vaccination is still decreasing. For the year ended Sept. 30th, 1910, 2514 primary vaccinations were performed at the expense of the poor-rates, compared with 3081 for the corresponding period of 1909.

The Bristol Medical School.

The annual dinner will take place on Nov. 29th, at the Royal Hotel, College Green, at 7.30 P.M. Mr. James Taylor is president and the guest of the evening will be Sir Alfred Keogh, retired Director-General, Army Medical Staff.

Medical Service at Torquay.

On Sunday afternoon, Oct. 23rd, a special service for medical men and nurses was held at St. Luke's, Torquay. There was a large congregation, which included about 30 members of the medical and 50 of the nursing professions. The sermon was preached by the vicar (the Ven. A. H. Simms, Archdeacon of Totnes), who in the course of an eloquent address alluded to the work of the priest and physician, and showed how both should work together for the sick and suffering.

The West of England Eye Infirmary, Exeter.

The annual meeting of the subscribers to the West of England Eye Infirmary was held on Oct. 28th. The medical report stated that during the past 12 months 3710 patients had been treated. The daily average number of in-patients was 42. The financial statement was satisfactory. The committee alludes to the completion of the new wing which was erected to commemorate the centenary of the institution.

It was formally opened, free from debt, by Earl Fortescue on Sept. 21st last.

The Yeatman Hospital, Sherborne.

The proprietor of a travelling bioscope entertainment, named Rowland, has been made a life-governor of the Yeatman Hospital, Sherborne (Dorset), in recognition of his financial assistance to the institution. By means of "benefit nights" Mr. Rowland has during the past few years received £116 for the hospital funds.

Nov. 8th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

General Council of the University of Edinburgh.

THE statutory half-yearly meeting of the Edinburgh University General Council was held on Friday, Oct. 28th. The meeting had the unusual distinction of being presided over by the Lord Chancellor of the University, the Right Hon. A. J. Balfour, M.P. In the report of the Business Committee reference was made to the fact that the Treasury, acting on the advice of Lord Elgin's Committee, were to make an additional grant of £40,000 per annum to the Scottish universities, of which sum £12,500 would come to the University of Edinburgh. The report of the sub-committee on Draft Ordinance (regulations for degrees in medicine) was also submitted. The report approved generally of the terms of the Draft Ordinance and regarded it as an important step in the direction of the autonomy of the universities which the General Council of the University of Edinburgh had long been contending for. The important provisions were those which gave the University power to introduce from time to time reforms in the medical curriculum without the delays and difficulties which were attendant upon procuring a new ordinance on every occasion on which the progress of medical science and teaching seemed to require some modification of the curriculum. With this preliminary expression of approval all who are interested in the maintenance of the position of Edinburgh as a great medical school will wholly agree. One very important proposal in the report was that certain words should be deleted from the Draft Ordinance. The deletion of the words meant that instruction in the subjects of the first professional examination might be received in such schools and science colleges as might be recognised by the University Court, and that such courses of instruction could count although attended prior to registration as a medical student. This was intended to allow the subjects to be passed before the commencement of the medical curriculum. This proposal was submitted by Professor E. A. Schäfer and was opposed by Principal Laurie of the Heriot-Watt College; Professor Schäfer's proposal was carried by 21 to 16. The report next suggests that powers should be taken to impose a limit on the number of students attending any one clinic. No objection was raised to this important suggestion. The committee further suggests that a clause should be added to the Draft Ordinance to the effect that changes, which in the past have been usually arranged by the faculties and Senatus and subsequently approved by the University Court, shall be communicated to the General Council, "and representations made thereon by the General Council within two months from the date of communication shall be taken into consideration by the University Court before any such regulation is approved." The adoption of this report concluded the business. The fact that this report on the Draft Ordinance is signed by the professor of physiology as chairman of the subcommittee which drew it up may be taken as a sign that the University realises more fully than it did that proposals and recommendations issuing from the Business Committee of the General Council have the interests of the University at heart. It is indeed highly desirable that the University should be more sensitive to outside movements and opinions than it sometimes is, and the measure of autonomy which the Draft Ordinance asks for would presumably lead to that. When it is realised that the University has no power even to regulate the size of its clinics it will be also realised how hopeless it is to look for change until freedom is obtained. The University is to be congratulated on asking for that freedom.

Lunacy in Glasgow.

The report of Dr. John Carswell, certifying physician in lunacy to the Glasgow parish council, has just been issued for the past year, and there is a note of optimism about it that is very encouraging. The total number of cases reported to the inspector during the year was 1018. Of these, 553 cases were certified insane. This is 25 less than in the previous year, and is the lowest recorded since the year 1906. But the number of cases certified is not an accurate indication of the occurrence of insanity, for included in that is a number of cases previously certified. Thus last year, of 553 cases certified, only 392 were certified insane for the first time, the remainder having been previously under certificate. The figure 392 therefore represents the true occurrence of insanity in Glasgow parish during the year 1909–10. This is 49 fewer persons than in the previous year, and it is the lowest number since 1906. On an estimated population of 660,713 the number of persons certified insane for the first time represents a production-rate of 56·3 per 100,000, the lowest for the last ten years. During the last ten years the rate has fluctuated between 56·3 per 100,000 last year and 70 per 100,000 in 1902. The average annual rate for the first five years of the decade was 66·6 and for the second five years it was 63·7, a decrease of 2·9 per 100,000. This is similar to what is occurring throughout Scotland. The average annual production-rate for the whole of Scotland was 50 per 100,000 during the five years 1900–04 and it fell to 46 during the years 1905–09. It is worthy of note that the higher production-rate in Glasgow is largely due to the inclusion in the Glasgow record of first cases, of imbecile children, and also of certain Glasgow cases brought from other districts, and by a somewhat lower estimate of population than that used by the Commissioners in Lunacy. Dr. Carswell shows in his report that the decrease has occurred in the young and active sections of the population, between the ages of 15 and 45 years, who should, presumably, be most directly affected by the alleged overpressure of modern industrialism. A slight increase is noted in cases of insanity amongst older people, but this is, in part at least, attributable to the fact that many cases of senile decay are now remitted to asylums instead of being treated elsewhere. In discussing the distribution of the cases, the wards are divided into three groups according to whether the insanity-rate is high, low, or average. It is worthy of note that the wards which had high lunacy-rates had high death-rates, and it may be added that there are about three times as many public-houses relatively to the population in the first set of wards as there are in the second and healthier set. These figures go far to prove that the slum is just as much responsible for insanity as it is for physical deterioration.

Clinical Research Laboratory for Victoria Infirmary, Glasgow.

The Victoria Infirmary, Glasgow, has been put in possession of a handsome gift from an anonymous donor for the purpose of building and equipping a laboratory for clinical research. The gift amounts to £5000. The Western Infirmary, Glasgow, is also adding a laboratory on the same lines.

Infectious Disease in Dundee.

A serious increase in the number of cases of infectious disease occurred in Dundee during October. The total was 395, as against 246 in September and 152 in October of last year. Scarlet fever last month rose from 127 cases to 196, while diphtheria had increased from 53 to 91. Whooping-cough exactly doubled—44, as against 22; while chicken-pox rose from 11 to 41. Typhoid fever and erysipelas were both down. In October of last year there were only 97 cases of scarlet fever and 30 of diphtheria.

Typhoid Fever Outbreak in Strichen.

A serious outbreak of typhoid fever has occurred in the village of Strichen, fully a dozen cases having been notified to the medical authorities. At a meeting of the public health standing subcommittee of the Deer district a report on the matter by the medical officer of health was considered. From this it appears that the majority of the patients had received milk from the same dairy, but the medical officer reported that he had failed to find any source of specific contamination of the milk. He suggested, however, that the dairyman should be asked to try the effect of engaging other employees at the dairy to milk the cows and handle the milk,

and if necessary that new utensils should be provided. The committee considered the evidence as scarcely sufficient to warrant it in stopping the supply of milk from the dairy in question. The suggestions of the medical officer were approved, and he was authorised to make provision for these measures, and such others of a similar kind as might suggest themselves to him, being carried into effect without delay. It was also decided to have a report upon the water and drainage systems of the village.

Northern Infirmary, Inverness.

The half-yearly general meeting of the managers of the Northern Infirmary, Inverness, was held on Nov. 2nd, when the following motion was carried:—

That in view of the revenue account in bank being at present considerably overdrawn, the directors be authorised to withdraw from capital account a sum not exceeding £1000.

Ex-Provost Gossys was cordially thanked for the excellent services rendered by him as chairman during his term of office in the occupancy of the civic chair.

Birth-rate in Aberdeen.

As in other places the birth-rate in Aberdeen is decreasing, and that to a very considerable extent. The population of Aberdeen calculated by the Registrar-General is 185,703 for the present year, and on that basis the birth-rate for the districts of St. Machar and St. Nicholas works out at 16·7 per 1000. It is, however, slightly higher than that, because the population has not grown quite so rapidly recently as between 1891 and 1901, the dates of the two last censuses. The birth-rate has, however, fallen considerably in the last 30 to 40 years, but more particularly in the last 10 to 20 years. In 1866 to 1875 the average birth-rate was 36·2 per 1000 of population, in 1876 to 1885 it was 34·4, in 1886 to 1895 it was 32·2, and in the five years from 1899 to 1903 the birth-rate was 31·2 per 1000, which may be considered pretty accurate, as the present slackening in the growth of the population did not show itself much until after 1903. In the five years 1904 to 1908 it may be taken at 28·5 per 1000, and according to the Registrar-General's estimate the birth-rate for 1909 was 24·8; this, however, for various reasons might be put at 26 per 1000, a figure still very much below the 36·2 of 40 years ago. The reduced birth-rate has not until lately affected the normal increase of the population, because of the coinciding fall in the death-rate. The excess of the birth-rate over the death-rate was in 1866 to 1875 13 2 per 1000 of the population, which represented the normal increase apart from the effects of emigration or immigration. In the five years from 1899 to 1903 the difference between the birth-rate and the death-rate was 13·1; but in 1907 the difference was only 12·2, and in 1908 it was 11·2, while in 1909 it was about 10·7. In his report for 1908 Dr. Matthew Hay worked out the relations of births to marriages to ascertain whether the decline in the birth-rate was due to the diminution in the marriage-rates. He found it was not so. In the period from 1866 to 1875 the average number of births to each marriage was 4·4, which gradually fell to 3·3 in the five years ending 1908.

Stirling Royal Infirmary.

At the annual meeting of the supporters of the Stirling Royal Infirmary it was stated that in response to the appeal made by the directors for the sum of £12,000 for extending the infirmary £8150 had been already promised. The directors have decided to proceed with that part of the extension which involves the erection of the west wing at a cost of £4250. This building is now well advanced, and it is hoped that it will be ready for occupancy by next spring.

Nov. 8th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Mastership of the Rotunda Hospital.

THE Master of the Rotunda Hospital holds office for seven years, and last week Dr. E. Hastings Tweedy, having completed his term, handed over the duties to his successor, Professor Henry Jellett. A few days prior to his leaving the hospital a handsome presentation of a silver tray was made to Dr. Tweedy by the nursing staff and pupil nurses who had been trained under him. The governors of the charity, before electing a successor, passed a warm resolution of thanks to the outgoing Master for "his devoted attention to the patients and to the interests of the charity." During Dr. Tweedy's time at the Rotunda many improvements have been carried out. The lying-in accommodation has been increased; rooms for women students have been provided; a residence wing for nurses has been built, giving room for additional pupil nurses; isolation rooms have been provided; and electric lighting has been introduced. The work of the hospital has largely increased, the maternity patients being more numerous by 500 a year than they were seven years ago. At the same time, in points of technique Dr. Tweedy has kept abreast with modern progress, and his last year in office has the distinction of being the year of lowest morbidity in the history of the hospital. Dr. Tweedy leaves the Rotunda to resume the duties of gynæcologist to Dr. Steevens' Hospital. Dr. Henry Jellett, who last year was elected King's professor of midwifery in the School of Physic, and now succeeds Dr. Tweedy, like his predecessor, possesses indefatigable energy, and the reputation of the hospital is sure to be maintained in his hands.

Notification of Deaths of Persons over 70.

District registrars, who in Ireland are mostly dispensary medical officers, have the duty of furnishing each week to the pensions officers the names of all persons whose deaths at ages over 70 have been registered. For these returns the Lords of the Treasury sanction a fee per name of 2*d*. Some time ago the Irish Medical Association protested against the inadequacy of the fee, but without result. At a recent meeting of the Council of the Association a suggestion was made that a list of names and addresses of Old Age Pensioners in each district should be periodically sent to the registrars, so that when the death of any person on this list is registered the registrar shall furnish a certified copy of the entry to the pensions officer, as is done in the case of navy or army pensioners. If this method were adopted the statutory fee of 2*s*. 7*d*. would be paid for each certificate.

Women Inspectors of Lunatics.

Last week the Blackrock urban council, on the movement of Lady Dockrell, passed the following strong resolutions demanding the appointment of women inspectors of lunatics and women members of asylum committees:—

(1) Having regard to the fact that nearly half the lunatics in Ireland are females, the Government be asked to appoint a lady inspector to visit the female lunatics in Ireland; (2) that having regard to the large number of female lunatics and to the increasing expenditure for the upkeep of the asylums and also for the maintenance of the insane, the Government be asked to make it compulsory that at least one member of every asylum committee in Ireland should be a woman.

Retirement of Sir John Fagan.

Sir John Fagan has retired from the offices of Inspector of Industrial Schools and Member of the General Prisons Board, Ireland. The former post he has held since 1897; to the latter he was appointed a few years ago on the retirement of Sir Stewart Woodhouse. In his earlier days he practised as a surgeon in Belfast. He received the honour of knighthood a few months ago. Surgeon-Colonel Edgar Flinn, medical inspector of the Irish Local Government Board, has been appointed to succeed Sir John Fagan in both capacities.

Health of Belfast.

From a report presented by the medical officer of health at the monthly meeting of the city council held on Nov. 1st, it appears that 121 cases of infectious disease were notified during the month ended Oct. 15th, as compared with 73 in the preceding four weeks, and 99 in the corresponding period of 1909. The increase is due to scarlet fever and diphtheria, of which 68 and 26 were notified respectively as compared with 33 and 11 in the previous month, and 45 and 10 in the corresponding period of 1909. No deaths had occurred from scarlet fever and only two from diphtheria. At present the resources of Purdysburn fever hospital are overstrained, and the health committee on Nov. 1st, at a special meeting, resolved to ask the board of guardians to receive surplus patients. The present accommodation at Purdysburn fever hospital is for 168 patients (they have now 159 in the wards); the proposed extension will take a considerable time to carry into effect and it provides for 268 patients, but, as pointed out by the chairman of the public health committee, they needed (on the principle of one bed for every 1000 of the population) 400 beds. This is precisely what those who gave evidence at the

Belfast Health Commission showed, and it is satisfactory to find that the city council now admit its correctness.

The Queen's University of Belfast.

The following interesting statistics give the total entries in session 1909–10, the first since the foundation of the University. In the faculty of medicine there were 279, of whom 9 were women; in the faculty of arts, 198, of whom 89 were women; in the faculty of science, 120, of whom 25 were women; and in the faculty of law, 11, all men. There were 12 non-matriculated students, 9 of whom were women and 3 men. The total number of students in session 1909–10 was therefore 618.

The King Edward Memorial in Belfast.

The subscriptions to the King Edward Memorial, which is to take the form of an additional block to the Royal Victoria Hospital, now amount to £14,018 10*s.* 6*d.*

University College, Cork: the Conferring of Degrees and the Behaviour of the Students.

On Nov. 3rd the degree Congregation of University College, Cork, assembled in the examination hall of the College. A number of friends of the students, among whom were many ladies, occupied the body of the hall, and the galleries were crowded by the undergraduates. Some of these young gentlemen showed their absolute ignorance of manners. Beginning by throwing down paper darts, they passed to lumps of sugar and thence to pieces of stale herring. One of the lady students, when approaching the platform to have a degree conferred on her, narrowly escaped being struck by such a disgusting missile, which fell on the leg of one of the professors. When the students subject their own friends to such treatment discredit falls upon them for their want of the ordinary sense of hospitality. Cordial relations have heretofore subsisted between the professors at Cork and the students, and the latter have displayed exemplary conduct and bearing. It is pleasing, therefore, to say that the missile-throwing was confined to the comparatively few of the great number of students present. Several degrees in arts and other faculties were conferred by the President, Dr. B. C. A. Windle, as Pro-Vice-Chancellor of the University. The degrees of M.B., B.Ch., B.A.O. were conferred on three students of the College. One of the three obtained first-class honours and another second-class honours. Dr. John Joseph Kearney, medical officer of the Rosscarbery Dispensary district, a former distinguished student of the Cork College, got his M.B. and B.Ch. degrees at the Royal University three years ago. Last spring the National University conferred on him the degree of M.D. with first-class honours, and on the strong recommendation of the Board of Examiners owing to the excellence of his answering awarded him a gold medal. On this occasion the Diploma of Public Health was conferred on him, Dr. Kearney having won first-class honours.

Nov. 8th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Treatment of Sciatica.

AT a meeting of the Société Médicale des Hôpitaux held on Oct. 14th M. Ramond, M. Deffins, and M. Pinchon said that in the treatment of 65 cases of primary sciatica they used one or other of the following methods: injection of artificial serum or solution of a magnesian salt in the vicinity of the nerve, epidural injection of cocaine, injection of air filtered through cotton wool, and *siphonage*. These were, in their opinion, the most active measures available for the purpose. The injection of air often gave excellent results in comparison with the effects produced by the other injections, and on account of its simplicity it deserved a good place on the list of therapeutic procedures. It was impossible to say which was the best form of treatment, because a case of sciatica which derived no benefit from injections in the vicinity of the nerve might improve or might even disappear entirely after injections of sterilised air or the epidural injections already mentioned. In the treatment of obstinate sciatica it was therefore advisable to make successive trials of these various methods.

Bullet Wounds of the Spleen.

Several cases of wounds of the spleen inflicted by revolver bullets were recently communicated to the Surgical Society by M. Guibé, who in operating on the patients was guided not by the signs of hæmorrhage but by the contraction of the abdominal wall. M. Auvray, who had been requested to submit a report on these cases, said that he had found 95 recorded instances of wounds of the spleen. The principal point of interest was the choice of the operation to be performed. When the wounds had been inflicted with a knife the majority of the operators considered that the transdiaphragmatic route was the best, leading as it did directly to the convex surface of the spleen. The circumstances were by no means the same for bullet wounds of the spleen, because these might be accompanied by serious lesions in distant parts of the abdomen, and for such wounds the operation recommended was laparotomy, either median, lateral, or transverse, always keeping in mind the possibility of thoracotomy being afterwards necessary. M. Auvray, however, considered that a surgeon ought to be very cautious in undertaking extensive secondary operations on the thorax because they rendered the prognosis less favourable. Splenectomy was generally performed, but under certain conditions it was better to attempt preservation of the viscus with suturing. The mortality was very high—55 deaths among the 95 recorded cases. The facts observed by M. Guibé raised the question of producing artificial pneumothorax, an operation which most surgeons considered to be not very serious. Wounds in the diaphragm ought always to be sutured, for if this was omitted secondary hernia would occur; the experiments of M. Ripetto had clearly shown that such sutures held well, and that a cicatrix was formed.

Fatal Accident to Dr. Armand Trousseau.

Dr. Armand Trousseau, grandson of the celebrated professor of clinical medicine, has recently lost his life in a motor-car accident. Through the overturning of the vehicle which he was driving his skull was fractured and he was killed on the spot. Having been admitted *interne* in 1878, he soon applied himself to ophthalmic work. Eventually he became medical attendant to the blind asylum known as Quinze-Vingts, and was subsequently selected as director of the Rothschild institutions for the blind.

Sleeping Sickness.

At the October meeting of the Société de Pathologie Exotique two communications on the subject of sleeping sickness were read. The first was by M. Martin and M. Ringelbach on the preventive measures against the disease undertaken at Brazzaville and in the Congo district in 1909. Patients infected with trypanosoma received treatment at the Pasteur Institute in Brazzaville. A system of inspection in connexion with the disease was established, natives who travelled from place to place had to obtain sanitary passports, and none were employed on military service or as porters until they had been specially examined. In the second communication M. and Mme. Yakimoff recorded their observations on the action of Ehrlich's new remedy "606" on 14 rats infected with Trypanosoma gambiense. From 1 to 14 days after the appearance of trypanosomata in their blood they received injections of 0·15 gramme of "606" per kilogramme of the animal's weight, after which they were kept under observation for periods varying from 49 to 80 days. The parasites disappeared from the blood in from 45 to 62 minutes after the injections. Animals which received simultaneous injections of "606" and trypanosoma virus did not become infected.

Nov. 7th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Jubilee of the Berlin Medical Society.

THE Berlin Medical Society celebrated its fiftieth anniversary by a special meeting on Oct. 26th. Professor Senator, the President, gave a short history of the society, which was formed by the amalgamation of two associations designated respectively the Society for Scientific Medicine and the Society of Berlin Medical Men. During the early years of the new society it received communications on miscellaneous

professional questions, as well as on subjects connected with medical science, but in course of time it confined itself to scientific subjects, the professional matters being left to other newly-formed associations of practitioners. Many important discoveries were first made public by papers read before the Berlin Medical Society; it is also the largest medical society in Germany, the number of members being about 1600. The rector of the University, Professor Rubner, the dean of the Medical Faculty, Professor Ziehen, and representatives of other medical societies then delivered short congratulatory speeches on the jubilee occasion. Professor Orth, Vice-President, announced that the society had admitted a number of prominent medical men in Germany and abroad to the honorary membership, and that Professor Senator had been made honorary President. The honorary members included Dr. Boas and Dr. Kessler, the only survivors of the original founders of the society, the other German honorary members being Professor Waldeyer, Professor Naunyn, Professor Röntgen, and the chief of the Army Medical Corps, Dr. von Schjerning. The foreign honorary members included Professor Exner and Professor Fuchs of Vienna, Lord Lister, Professor Laveran of Paris, Professor Lépine of Lyons, Professor Golgi of Rome, Professor Murri of Bologna, Professor Jacoby of New York, Professor Keen of Philadelphia, Professor Armauer Hansen of Christiania, Professor Retzius of Stockholm, Professor Korany of Budapest, Professor Pawlow of St. Petersburg, Professor Ramon y Cajal of Madrid, Professor Salomonsen of Copenhagen, and Professor Kitasato of Tokio. Professor Landau, Vice-President, made a statement relative to the Virchow Haus, the future home of the society, and announced that Professor Virchow's widow had bequeathed to the society his valuable collection of specimens which were to be placed in the new premises and would form a Virchow Museum. In the evening the members of the society and their guests were entertained at a "Commers" in the Philharmonic.

Rabies in Germany.

406 persons have been officially recorded as having been bitten by rabid animals in Prussia during the year 1909. Of these patients 68·2 per cent. were men and 31·8 per cent. were women. The majority of the cases happened in the districts adjoining the Russian frontier, whilst no case at all happened in the provinces of Westphalia, Hanover, and Saxony. The animals inflicting the injuries are described as 190 dogs, 5 cats, 3 horses, and 4 other domesticated animals. In 19 cases the patient contracted the disease from other persons. Of the total number of persons bitten 374 (92·1 per cent.) received Pasteur treatment—203 in the Institution for Infectious Diseases in Berlin and 171 in the Hygienic Institute at Breslau. There were 10 deaths in all, 8 of the deceased having been treated by Pasteur's method, so that among 374 persons treated in this way 8 (2·13 per cent.) died, and among 32 persons not treated in this way 2 (6·25 per cent.) died.

A New Dietetic Preparation.

Professor von Noorden of Vienna, writing to the *Berliner Klinische Wochenschrift*, has given a very favourable description of a new dietetic preparation termed "riba," consisting almost entirely of albumins and albumose with only a small quantity of extractives such as purin bodies and kreatinin. When mixed with three parts of water it has a brown colour, a smell of glue, and a rather bitter taste, which disappears after the preparation has been added to some ordinary article of food having a more or less fluid consistence. Clinical observations showed that from 60 to 100 grammes could be administered daily without causing digestive troubles, although many of the patients suffered from diseases of the stomach, constipation, chlorotic dyspepsia, and similar conditions. That the preparation was very readily absorbed was proved by the fact that the elimination of nitrogen in the fæces was only very little increased by the administration of the substance. One of the experiments made for this purpose was as follows. A patient was given a nutritive enema consisting of 300 grammes of a "riba" solution containing 14·5 grammes of nitrogen. Three hours later the rectum was washed out, with the result that only 1·85 grammes of nitrogen was present in the fluid, so that 12·65 grammes had been absorbed within three hours. "Riba" should not be given in milk or bouillon because of its bitter taste which disappears when it is mixed with thick soup, such as a purée of potatoes or carrots, or with gruel made with oatmeal or barley. The indications for the use of "riba" are the same as for other albuminous preparations. In the uric diathesis it is as harmless as vegetable albumin because it contains only a very small quantity of purin bodies.

Oct. 31st.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Insanitary State of Southern Italy.

THE speech of the Minister of the Interior, Signor Calissano, at Alba last week has made a very favourable impression on medical circles in Italy, showing as it does an unusual interest in and grasp of sanitary problems on the part of an Italian politician. The greater part of Signor Calissano's discourse was devoted to those sanitary questions which are indeed of outstanding importance for Italy at the present moment and especially for the southern portion of the peninsula, and which have been raised by the recent outbreak of cholera and by the scarcity and even total lack in many places of a sufficient supply of potable water. In regard to cholera, after a brief reference to its steady advance during the last five years through central and eastern Europe and to the geographical position of Italy, interposed like a long barrier between Europe and the East, and in consequence peculiarly exposed to the danger of invasion by Asiatic diseases, the Minister discussed the origin of the outbreak in Italy, pointing out the difficulty or rather the impossibility of ascertaining the precise mode of its entrance, not only on account of the well-known fact that the germ may be carried by persons apparently in good health, but also because of the grave error committed by certain medical men of Bari, under whose observation the first cases came, in failing to recognise the disease as cholera. Before this blunder was detected by Professor Gosio, the able chief of the bacteriological laboratory of Rome, who was sent expressly to investigate the so-called gastro-enteritis on the spot, many cases had already occurred, and it was no longer practicable to trace their original source. The nature of the disease once definitely recognised, the action of the sanitary authorities was prompt and effective both in dealing with the epidemic at the various points at which it had appeared and in adopting protective measures against its possible outbreak at any other centre throughout the kingdom. The result has been eminently satisfactory, for if not yet entirely extinguished the epidemic in the course of a few weeks has all but died out, only a few sporadic cases occurring here and there, which in their turn are promptly isolated so as to prevent effectually any further spread of the malady. This happy result has been achieved in the face of the greatest difficulties, caused both by the attitude towards repressive measures taken up by the ignorant and superstitious peasantry and by the fearfully insanitary conditions in which these poor people exist. In the Puglie the population, composed chiefly of peasants, live either in dwellings underground or shut up in hovels without air or light, huddled together in crowds in a state of indescribable misery and abandonment, their water-supply drawn from wells contaminated with every filth, and all of them poverty stricken, with no resources to fall back upon in such a crisis, and unable to obtain work because those who might employ them are likewise themselves destitute. The local communes, at the end of their resources and lacking the means of carrying out the necessary sanitary measures, are quite unable to cope with the situation, and, worst of all, the public spirit in many places is so demoralised that it gives way to panic, the terror-stricken people taking to flight, concealing the suspected cases and deaths, and reviving all the old mediæval traditions of poisoning and wilful spread of the disease by the doctors. In these circumstances it is not surprising that riots, and even loss of life, have in some instances been the outcome of attempts by the sanitary authorities to enforce isolation of the infected and of suspected cases. But by the exercise of courage, tact, and patience these difficulties have been nearly always peacefully overcome, a fact which reflects the highest credit upon the officials to whom these trying duties have been entrusted, and their final victory

seems now well in sight. Signor Calissano contrasts the present epidemic, in which the number of victims has not amounted to more than 1000, with that of 1893, when there were over 3000; that of 1887, when there were over 8000; and that of 1884–86, when the grand total was well over 50,000, and thinks that considering the duration of the outbreak, the wide extent of country affected, and the invasion of towns and cities where the contagion might easily have spread, there is reason to be proud of the victory which has been already gained. At the same time, he deprecates any relaxation of the precautions now being taken, bearing in mind the possibility of a recrudescence of the disease in the spring and the enormous loss such an outbreak would inflict on the whole country, more particularly by compromising the success of the great patriotic celebrations at Turin and Rome in 1911, and of the two exhibitions of industry and art to be held in these cities and in which the whole world is taking part. As a result of the visit paid by Ministers to Naples and the other infected districts of the south in connexion with the epidemic, the Government have realised the necessity of a great reform in the organisation of the sanitary services, including the institution of courses of lectures on the theory and practice of epidemiology, with special attention to exotic diseases and to the technique of disinfection; of schools for nurses of both sexes; and of a different system in the creation of local sanitary offices, or at least of a more rigorous method in the selection of the local sanitary officials. A project of law has also been prepared providing for the filling up of the attenuated ranks of the present sanitary *personnel* and for the supply of more adequate means for the hygienic defence of the country. Turning to the question of the water-supply, Signor Calissano announced that the Government were preparing, or had already prepared, various projects dealing with the problem, and especially one of a general kind enacting that all communes, even to their smallest subdivisions, shall be provided with potable water. He explained how under the present wholly inadequate system there are 17 millions of the inhabitants still without such a supply, and said that the Government are determined, by facilitating the purchase of pure sources and by the construction of aqueducts, to make good this deficiency, so that everyone, with the exception only of those living scattered in remote country districts where the expense would be prohibitive, may be able to obtain pure drinking water. For this purpose it will be necessary to raise funds by special imposts which will be termed hygienic taxes. Since the above speech was delivered the epidemic of cholera has meanwhile greatly diminished, Naples in particular, where its spread was most dreaded, having now had no cases for several days. The measures taken in Rome for dealing with the few imported cases which were promptly isolated there have been entirely successful, no instance having occurred of a spread of the infection from any of them.

Nov. 5th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

Opening of the New Rockefeller Hospital.

THE opening on Oct. 16th of the new Rockefeller Hospital was attended by some 2000 persons, among whom were to be noticed many of the most internationally known of America's physicians. This hospital differs from all others in that while it will at all times be a special hospital, devoting itself entirely to the care and investigation of certain diseases and opening its doors to subjects of those diseases alone, this specialisation will not be permanently in one direction but will be subject to change at the discretion of the Board of Scientific Directors, in accordance with the variations in the nature of the problems that from time to time most urgently call for solution. Three or four diseases are to be selected for study and only subjects of these diseases will be received to benefit by the care of the institute and hospital, which will be given gratuitously to the full extent of its capacity. All the most modern resources that the ingenuity of scientific man can devise will be brought to the aid of both patient and science. At the same time, each one of those in attendance will be not only artist but scientist. While exercising the highest that is humanly attainable at the time in the direction of cure, they will devote their entire time and energies, already trained in research, to solving the problems which yet remain in the particular diseases for the time being under investigation. No private practice, not even the diffusion of interest that inevitably takes place in a general hospital, will be there to weaken the concentration of concerted observation from different viewpoints on the one subject in all its bearings. The investigation into the particular disease will go on simultaneously and coöperatively by both laboratory and clinical methods of research. Here, for the first time in its history, medical scientific research will be unified and complete, with no further ground for impeachment by the laboratory man of the inaccuracy and inexactness of the clinician's method or counter assertions by the clinician that the laboratory man forgets that he is dealing with a living person, not with a test-tube. Here the laboratory and the clinic will work side by side under the care of men each equally familiar with the working of both methods and specialising their duties, if at all, merely for convenience, not from necessity. The evolution of the Rockefeller Institute exemplifies probably the sanest conception of the way progress in medicine lies that the world has ever seen. Mr. Rockefeller took counsel with medical scientists of the first rank in whom he had full confidence as to what problems in medicine most immediately called for solution, and having convinced himself of the soundness of their views gave them the sum of $200,000—this was in 1901—to deal with and carefully watched what use they made of it. Being satisfied with the practical utility of their results, in 1902 he gave a further sum of $1,000,000 to provide the necessary buildings and equipment for the more centralised and controllable continuance of the work, and to bear the running expenses for a few years. This gift was further amplified in 1907 by the munificent endowment of $2,600,000 for the institute. In the meantime it had been demonstrated to Mr. Rockefeller's keen sagacity that a hospital to afford unfettered means for appraising clinically the results arrived at by laboratory methods was essential, if those results were to be fairly tested by competent men familiar with their method of working. The hospital thus initiated was opened on Oct. 16th, and at the same time Mr. Rockefeller added a further endowment fund of $3,820,000. The entire estate and income of the institute, including the new hospital, was on that day formally taken possession of by a board of trustees, consisting of John D. Rockefeller, jun., Frederick T. Gates, William H. Welch, Starr J. Murphy, and Simon Flexner, thus converting the institute from a private concern to a public trust. To quote from the statement issued by the trustees, they "hold the entire income at the disposal and under the full control of the Board of Scientific Directors, which is constituted as follows: Dr. William H. Welch, of Baltimore, president; Dr. T. Mitchell Prudden, of New York, Dr. L. Emmett Holt, of New York, secretary and treasurer; Dr. Christian A. Herter, of New York, Dr. Simon Flexner, of New York, director of laboratories; Dr. Herman M. Biggs, of New York, and Dr. Theobald Smith, of Boston." It would be impossible to conceive of a stronger or more workable board. The medical staff consists of Dr. Rufus L. Cole, director; Dr. Christian A. Herter, physician to the hospital; Dr. G. C. Robinson, resident physician; and Dr. Draper, Dr. Marks, Dr. Swift, and Dr. Peabody, internes, each one of whom has had special training in investigation work. The hospital is neither a separate institution nor an addendum to the Rockefeller Institute; it forms an integral part of the institute itself, with the laboratory of which it is in actual contiguity, being connected with it by the isolation building, a two-storey structure consisting of a series of rooms separated from one another only by glass partitions, thus forming a thoroughly germ-proof series, yet capable of control by a single night nurse. The ventilation is specially provided for by a straight copper tube from each room carried through the roof, and fitted at the bottom with an aspirating coil and an ejector, so that the cleansing with live steam is a simple matter in the hands of the attendant. To describe the laboratories, workrooms, living rooms, patients' rooms, dressing rooms, operating rooms, kitchens, offices, &c., would take up too much space. Suffice it to say that the crowd of competent critics who thronged to the opening seemed to be agreed that the hospital represents the highest effectiveness

at present attainable, from the view-point alike of patient, physician, and investigator. The hospital was opened for the reception of 70 patients on Oct. 20th. The diseases first selected for special study are infantile paralysis, because of its appearance in epidemic and malignant form, and pneumonia and heart diseases, which according to recent statistics show the most marked increase in the death-rate.

Alvarenga Prize of the College of Physicians of Philadelphia.

The Alvarenga prize of the College of Physicians of Philadelphia for 1910 has been awarded to Dr. M. Katzenstein of Berlin, Germany, for an essay entitled "The Formation of an Arterial Collateral Circulation in the Kidney." The College announces that the next award of the prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about $180, will be made on July 14th, 1911, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published. They must be typewritten, and must be received by the secretary of the college on or before May 1st, 1911. They must be sent without signature, marked with a motto and accompanied by a sealed envelope having on its outside the motto and within the name and address of the author.

Nov. 1st.

Medical News.

UNIVERSITY OF BRISTOL.—At the first congregation for the conferring of degrees the following graduates of the Faculty of Medicine were admitted. It will be noticed that many of these were past students of University College, Bristol, who had already graduated in another University, and were admitted to the "ad eundem" degree:

Bachelor in Medicine and Bachelor in Surgery.—William Marmaduke Bergin, M.B., B.S. Lond., Charles William James Brasher, Arthur Lancelot Flemming, William Wilfrid King, Leonard Augustus Moore, Leonard Newsom Morris, Frederick Charles Nichols, Thomasina Georgina Prosser, M.B., B.S. Durh., William Stuart Vernon Stock, M.B., B.S. Lond., John William Taylor, and Andrew John Metford Wright, M.B., B.S. Lond.

Bachelor in Medicine.—Philip Graham Stock, M.R.C.S., L.R.C.P., D.P.H., and Vivian Bartley Green-Armytage (*in absentiâ*).

Master of Surgery.—Clifford Arthur Moore, M.S. Lond.

Doctor of Medicine.—Henry Devine, M.D. Lond., Arthur Hill Joseph, M.D. Lond., and William Barrett Roue, M.D. Durh.

Doctor of Medicine and Bachelor of Surgery.—Professor Walter Carless Swayne, M.D., B.S. Lond.

Honorary Degree of Doctor of Science.—Professor Conwy Lloyd Morgan, LL.D. (*honoris causâ*), Aberdeen, F.R.S.

FOREIGN UNIVERSITY INTELLIGENCE.—*Bologna:* Dr. Giovanni Razzaboni has been recognised as *privat-docent* of External Pathology.—*Bonn:* Dr. Otto Dragendorff has been recognised as *privat docent* of Anatomy, and Dr. Wassermeyer of Kiel as *privat docent* of Psychiatry.—*Buffalo:* Dr. Francis C. Goldsborough of Baltimore has been appointed to the chair of Midwifery in succession to Dr. Matthew D Mann resigned.—*Cagliari:* Dr. Efisio Orrù has been recognised as *privat docent* of Anatomy.—*Florence:* Dr. Ettore Levi has been recognised as *privat-docent* of Neurology.—*Greifswald:* Dr. F. A. König of Altona has been appointed Professor of Clinical Surgery in succession to Dr. E. Payr.—*Halle:* Dr. Ernst Laqueur of Königsberg has been recognised as *privat-docent* of Physiology, and Dr. Josef Igersheimer as *privat-docent* of Ophthalmology.—*Kharkoff:* Dr. B. G. Priêvalski has been appointed Professor of Operative Medicine and Topographic Anatomy.—*Marburg:* Dr. Wenckebach of Groningen has been invited to succeed Professor Braner, and Dr. Wilhelm Zangemeister has been offered the chair of Midwifery, with charge of the Female Clinic, in succession to Dr. Stoeckel, who goes to Kiel.—*Munich:* Dr E. Edens has been recognised as *privat-docent* of Medicine.—*Naples:* Dr. M. De Vico has been recognised as *privat-docent* of Medical Diagnosis, and Dr. V. Marcopi as *privat-docent* of External Pathology.—*Parma:* Dr. Carlo Ferrai, Professor in Modena, has been appointed to the chair of Forensic Medicine.—*Pavia:* Dr. U. Carpi and Dr. E. Morelli have been recognised as *privat-docenten* of Medical Pathology, Dr. R. Pandolfini as *privat-docent* of Surgical Pathology, and Dr. G. Ciuffo as *privat-docent* of Dermatology.—*Prague (German University):* Dr. Hans Rotky has been recognised as *privat-docent* of Medicine, and Dr. Robert Salus as *privat-docent* of the Special Pathology and Therapeutics of the Eye.—*Turin:* Dr. L. Borelli and Dr. P. F. Tuccòla have been recognised as *privat-docenten* of Medical Pathology, Dr. I. Valobra as *privat-docent* of Neurology, Dr. Giacinto Mosso as *privat-docent* of Ophthalmology, and Dr. A. Nieddu as *privat-docent* of Otology and Laryngology.—*Warsaw:* Dr. G. P. Sakharoff of Kazan has been appointed Professor of Medical Chemistry.

ROYAL INSTITUTION.—A general monthly meeting of the members of the Royal Institution was held on Monday afternoon, Sir James Crichton-Browne, Treasurer and Vice-President, in the chair, when Professor H. S. Hele-Shaw, F.R.S., Dr. A. Latham, and Dr. StClair Thomson were elected members among others.

THE LE TOUQUET GOLFING TOURNAMENT FOR THE PROFESSIONS.—The Le Touquet Golfing Tournament for the Professions of the Church, Navy, Army, Medicine, Law, and so on, will be held at Le Touquet, near Boulogne, during the week-end Dec. 10th to 12th, 1910. Play will be as follows: 18 holes Match Play *v.* Bogey, under handicap. Class I., handicaps 12 and under. Class II., handicaps over 12. Players can take out as many cards as they wish. Prizes will be given by the Le Touquet Golf Club. Intending competitors should send names and addresses as soon as possible to L. Eliot Creasy, M.R.C.S., L.R.C.P., 36, Weymouth-street, London, W., when information concerning vouchers for cheap week-end tickets will be forwarded.

ASSOCIATION OF PUBLIC VACCINATORS OF ENGLAND AND WALES.—The annual meeting of this association was held at the Hotel Cecil, London, on Oct. 28th. Mr. J. C. Bradshaw (Liverpool), the President, occupied the chair. The minutes of the last annual meeting were read and confirmed. A long discussion followed relating to the general business and financial affairs of the association. A proposition was carried with enthusiasm electing Dr. A. E. Cope (London) to be President for the ensuing year. The retiring council, with an addition in the place of one resignation, were re-elected. In the evening the annual dinner was held at the Hotel Cecil. Among the guests were Dr. A. P. Hillier, M.P., Dr. R. A. Farrar (Medical Inspector, Local Government Board), Mr. W. B. Parsons (THE LANCET), and Mr. G. S. Elliston (*Medical Officer*). Dr. Hillier, in responding to the toast of "The Guests," which was proposed in a humorous speech by Mr. J. Foster Palmer (London), expressed great pleasure at meeting so many of his professional brethren who were engaged in carrying out that branch of practice which dealt with the application of preventive medicine. When a future historian came to deal with our age he believed it would be recorded that nothing more markedly distinguished the period than the wonderful work which began with Jenner and which had been carried on by Pasteur, Lister, and Koch to such an extent as to have conferred upon mankind at large probably a greater aggregate of good results than the world has ever seen. As that splendid work expanded they still had sceptics to deal with. They might, however, console themselves that people were still living who believed the world to be flat and that mankind had benefited nothing from experiments performed upon lower animals. These people might be placed in the same category as those who believed vaccination was worthless. When he was out in South Africa he had the opportunity of witnessing the effects of an epidemic of small-pox on an unvaccinated community. Many real conscientious objectors existed there among the people, who, being Mahommedan by faith, had as an article of their belief the notion that it was an insult to the Deity to withstand disease. Before the epidemic was over many of these came to be vaccinated as a result of their observations among the vaccinated. Their objections might have been excusable, but for the life of him he could never understand how the conscience of the objector in this country could enter into the question. Vaccination had been since that time carried out in South Africa with excellent results. The evidence regarding the protective value of vaccination was so overwhelming that he could not understand how any sensible man could question its efficacy. He believed that small-pox could never be successfully combated by simply vaccinating the contacts. If the bulk of the profession were of that opinion he suggested the time had come when the leading men of the profession should meet to

make a public protest. Nothing would carry more weight with the House of Commons than an opinion judiciously expressed by the leaders of the profession. Other toasts included "The Association of Public Vaccinators of England and Wales," proposed by the President (Dr. Cope) and responded to by Mr. Bradshaw, and "Public Health and Poor-law," proposed by Dr. A. Drury (Halifax), and responded to by Sir H. W. Newton (Newcastle-on-Tyne).

ROYAL SOCIETY OF ARTS.—The programme for the 157th session of the Royal Society of Arts is being issued to the members. The following papers are among those announced: Sir Henry H. Cunynghame, K.C.B., Detecting Fire-damp; Dr. Vaughan Cornish, the Panama Canal; Mr. A. Montgomery, Mining in Western Australia. On the four Mondays before Christmas Mr. C. R. Darling is to give a course of Cantor lectures on Industrial Pyrometry. There is a full list of papers and lectures for the part of the session after Christmas.

SOUTHWARK SLUM CLEARANCE SCHEME.—The London County Council on Nov. 8th decided, on representations by the medical officers of health of Southwark and Bermondsey, to spend £387,000 on a clearance scheme in the Tabard-street area, off the Borough High-street, and two smaller slums in the vicinity. It is proposed to re-house half the displaced population in block dwellings, to lay out five acres of the Tabard-street area as an open space, and to use the remaining three acres of the site for commercial purposes. The Housing of the Working Classes Committee stated that the area was so badly planned and the houses in such a deplorable state that only a complete clearance would be of any use. The following particulars with regard to the death-rate are significant:—Deaths from all causes, 1904–08: Tabard-street area, 36 8 per 1000; Southwark, 18 2; and London generally, 14 9. Phthisis death rate: Tabard-street, 3·83; Southwark, 2·09; and London, 1·44. The principal endemic diseases: Tabard-street, 6·07; Southwark, 2·29; and London, 1·71.

THE FEEDING OF NURSES.—Under the auspices of the National Food Reform Association a conference of hospital matrons was held in Caxton Hall, London, on Nov. 5th, to discuss the question of nurses' food in hospitals and similar institutions. Miss Rosalind Paget presided, and among the speakers were Miss Musson, matron of the Birmingham General Hospital, Miss Cox Davies, matron of the Royal Free Hospital, and Miss Barton, matron of the Chelsea Infirmary. The general complaint, as expressed by many representatives, seemed to be the monotony of hospital fare, and many suggestions were made as to the practicability of altering this by adopting some of the French *réchauffé* dishes, and the German methods of cooking vegetables. The chief difficulties apparently lay in the extra thought in planning which would be thrown upon the caterer and upon the intelligence of the cook. But all were agreed that if the result is to be greater vigour of mind and body in the nurses, who are, after all, responsible for carrying out the medical treatment of the patients, then it is certainly worth while attempting to overcome these difficulties. One speaker said she thought the food was not of so much importance as the time taken for meals. In many institutions the nurses have only half an hour for dinner, out of which at least five minutes is taken up in going to and from the wards and dining-room.

THE LONDON COUNTY COUNCIL AND THE DEPARTMENTAL COMMITTEE ON CORONERS.—The General Purposes Committee submitted to the London County Council on Nov. 8th a long report in which were set forth the points of divergence between the recommendations of the Departmental Committee on Coroners and the resolutions in which, from time to time, the Council has expressed its views as to desirable amendments in the law. The General Purposes Committee thought that, subject to certain modifications, Sir William Collins's Coroners' Law and Death Certification (Amendment) Bill would be acceptable to the Council, and that the Government should be urged to give facilities for its passage during the autumn session. The Council, however, would do well to re-affirm its views on those points on which the Departmental Committee came to a different conclusion. These were that coroners should be paid by salary and be required to devote their whole time to the duties; the number of jurymen should be not less than six nor more than 11, and should be summoned strictly by rota; the view of the body by the jury should be dispensed with, except in cases in which the coroner and a majority of the jury thought it necessary; and that no fees for giving evidence or making post-mortem examinations should be paid to medical officers employed in rate-aided institutions.

DONATIONS AND BEQUESTS.—Prince Alexander of Teck has now received nearly £5000 for the Prince Francis of Teck Memorial Fund in aid of the Middlesex Hospital. This sum includes donations of 100 guineas from the King and the Queen, and a magnificent gift of £1000 from Mr. J. Bland-Sutton.—An anonymous gift of £1000 has been made towards the erection of new buildings for the Nottingham and Midland Eye Infirmary.—An anonymous gift of £5000 has been made to the governors of the Victoria Infirmary, Glasgow, for the purpose of building and equipping a clinical research laboratory.—The Manchester Royal Infirmary has received from Mrs. J. E. Platt a cheque for £1000 for the purpose of endowing a bed in that institution in memory of her late husband, who for many years was an honorary surgeon to the Royal Infirmary.

ASSOCIATION OF CERTIFYING FACTORY SURGEONS PRESENTATION TO THE LATE HONORARY SECRETARY.—The annual dinner of the Incorporated Association of Certifying Factory Surgeons was held at the Queen's Hotel, Manchester on Nov. 4th. Mr. W. F. Dearden of Manchester, who has been honorary secretary of the association for the last 11 years, was elected President, and took the chair at the function, which was well attended by members from all parts of the country. After "The King" had been duly given and responded to, Mr. A. A. Haworth, M.P., responding to the toast of "The Houses of Parliament," proposed by Dr. J. Brassey Brierley, said that Parliament could not legislate one inch in front of public opinion. The experience of the past fully supported this view. In their efforts they must carry the people with them. The factory legislation of the past and the legislation now proposed, which would be passed into law, would be looked upon in times to come as one of the factors in the great march of civilisation and progress. Mr. T. Fort then made a presentation to Mr. Dearden on behalf of the association. It consisted of a silver tray, tea service, entrée dishes, and a gold bracelet for Mrs. Dearden. Mr. Fort spoke of the work of Mr. Dearden in promoting health in the factory and among school children, remarking that he was one of the leading authorities on industrial disease, and had contributed valuable papers to various medical and scientific associations at home and abroad. Mr. Dearden had also been one of the prime movers in securing the charter of incorporation. Mr. Dearden, in responding, said that their greatest triumph had been achieved when they succeeded in securing the retention of the old statutory obligation requiring the investigation into the causation of so-called preventable factory accidents by the certifying surgeon, and this was principally owing to the way in which every individual member used his efforts to convert any Member of Parliament with whom he happened to be acquainted. The British Medical Association and Sir Victor Horsley were also entitled to a share of the credit. The modern and only successful method by which a body of men engaged in the same calling could hope to improve their common condition was by association, and he had striven hard to convince certifying surgeons of this principle, which stood for uniformity of views and uniformity of action. The departmental returns for 1900, at the beginning of which year he took office, showed that 1882 certificates had been refused for physical incapacity; each year these figures had gradually improved until at the end of 1909 they had gone up to 7738. The association had convinced the authorities of the tremendous advantage to juvenile labour of legalising the regulation of the nature of employment to the physical capacity of the applicant by authorising the certifying surgeon to affix conditions to his certificate, and it was members of the association who were responsible for the 5775 conditional certificates granted last year. He concluded by speaking in terms of great praise of the work of Dr. T. M. Legge and Dr. E. L. Collis, the medical inspectors of factories attached to the Home Office. Sir William Bailey proposed the "Factory Department of the Home Office," and Professor G. R. Murray, in responding for

"The Visitors," made the suggestion that any wealthy employer who wished to devote a sum of money to a really good object could not do better than endow a research scholarship for the study of industrial disease.

Colonel Sir David Bruce's name should have been included in the list published last week of those who have joined the Organising Committee of the Seventeenth International Congress of Medicine.

Mr. Ernest Hook Buckell, who on Nov. 1st was elected for the first time a member of the Chichester city council, has been placed on the Commission of the Peace for the city.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the annual meeting of Fellows and Members of the Royal College of Surgeons of England, which is to be held at the College on Thursday next, Nov. 17th, the President will place before the meeting the report of the Council for the collegiate year ending August 1st, 1910. Mr. Joseph Smith, J.P., M.R.C.S., is to propose the following motion:—"That this twenty-sixth annual meeting of Fellows and Members again affirms the desirability of admitting Members to direct representation on the Council, which, as now constituted, does not represent the whole corporation, and that it does so in order that the constitution of the Council of the Royal College of Surgeons of England shall be in keeping with modern ideas of true representation." The President takes the chair at 3 o'clock.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, London.
Practical Physiology. Edited by M. S. Pembrey. Contributors:—A. P. Beddard, M.A., M.D., J. S. Edkins, M.A., M.B., Martin Flack, M.A., M.D., Leonard Hill, M.B., F.R.S., J. J. R. Macleod, M.B., M. S. Pembrey, M.A., M.D. Price 14s. net.

CROSBY, LOCKWOOD, AND SON, London.
Houses, Villas, Cottages, and Bungalows. For Britishers and Americans Abroad. By George Gordon Samson, Architect. Price 3s. 6d. net.

DOIN, OCTAVE, ET FILS, Paris.
Congrès International de Radiologie et d'Électricité. Bruxelles, 13, 14, et 15 Septembre, 1910. Notions Nouvelles Introduites en Médecine par l'Exploration Radiologique de l'Estomac. Rapport présenté par MM. le Dr. G. Leven et le Dr. Barret. Price not stated.

FISCHER, GUSTAV, Jena.
Die eitrigen Entzündungen des Eileiters. Histologische Untersuchungen von Dr. Herm. Schridde. Price M.7.

FUNK AND WAGNALLS COMPANY, New York and London.
The Care and Training of Children. By Le Grand Kerr, M.D. Price 3s. net.

HIRSCHWALD, AUGUST, Berlin.
Polyzythämie und Plethora. Von Prof. Dr. H. Senator, Geheimer Medizinalrat in Berlin. Price M.2.40.
Vorlesungen über Harnkrankheiten. Für Aerzte und Studierende. Von Dr. C. Posner. Price M.9.

KABITZSCH, CURT (A. STUBER'S VERLAG), Würzburg.
Taschenbuch der Therapie, mit besonderer Berücksichtigung der Therapie an den Berliner, Wiener u.a. deutschen Kliniken. Herausgegeben von Dr. M. T. Schnirer. Siebente vermehrte u. verbesserte Ausgabe. Price M.2.
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Oxypathie. Von Prof. Dr. Wilhelm Stoeltzner. Price M.3.
Der intraokulare Flüssigkeitsstrom in seinen Beziehungen zum biomechanischen Aufbau des Auges unter gesunden Verhältnissen, beim Glaukom und bei der Kurzsichtigkeit. Von Dr. J. Kuschel. Price M.7.
Jahrbuch für Kinderheilkunde und physische Erziehung. Unter Redaktion von O. Heubner, Th. Escherich, A. Czerny. 72, der dritten Folge 22 Band. Heft 4. Ausgegeben am 15 Oktober, 1910. Price not stated.

KLINKHARDT, DR. WERNER, VERLAG VON, Leipzig. BAILLIÈRE, TINDALL, AND COX, London. G. E. STECHERT AND CO., New York. SOCIETÀ EDITRICE LIBRARIA, Milano. "PRAKTICHESKAYA MEDITSINA," St. Petersburg.
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LEHMANN, J. F., München.
Lehmann's Medizinische Handatlanten, Band XIII. Atlas und Grundriss der Verbandlehre für Studierende und Aerzte. Von Dr. Albert Hoffa. Nach des Verfassers Tod bearbeitet von Privatdozent Dr. Rudolf Grashey, München. Vierte, wesentlich vermehrte Auflage. Price, bound, M.10.

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Vaccine Therapy: its Administration, Value, and Limitations. A Discussion opened by Sir Almroth E. Wright, M.D., F.R.S. (From the Proceedings of the Royal Society of Medicine, 1910, Vol. III.) Price 4s. 6d. net.

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A System of Medicine. By Many Writers. Edited by Sir Clifford Allbutt, K.C.B., M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A., and Humphry Davy Rolleston, M.A., M.D., F.R.C.P. Vol. VIII. Diseases of the Brain and Mental Diseases. Price 25s. net.

MALOINE, A., Paris.
La Désinfection à la Campagne. Organisation et Fonctionnement du Service Départemental de Désinfection en Seine-Inférieure. Par le Docteur Charles Ott et Martial Basilaire. Price not stated.

MARHOLD, CARL, Halle-a.-S.
Wesen und Behandlung der Achylia gastrica. Von Prof. A. Schüle. Price M.1.20.

NATIONAL PRINTING DEPARTMENT, Cairo.
Ministry of Finance, Egypt. Survey Department. The Archæological Survey of Nubia. Report for 1907–08. Vol. II.: Report on the Human Remains. By G. Elliot Smith, M.A., M.D., Ch.M., F.R.S., and F. Wood Jones, M.B., B.Sc. (The accompanying plates are bound separately.) Price £E.2.

OLIVER AND BOYD, Edinburgh and London.
Food and Feeding in Health and Disease. A Manual of Practical Dietetics. By Chalmers Watson, M.D., F.R.C.P.E. Price 10s. 6d. net.

PERLES, MORITZ, VERLAG VON, Seilergasse, Nr. 4, Wien und Leipzig.
Wiener Arbeiten aus dem Gebiete der Sozialen Medizin. Herausgegeben von Dr. Ludwig Teleky. Price K.5.20.

SCHOOL HYGIENE PUBLISHING COMPANY, LIMITED, 2, Charlotte-street, London, W.
The Care of Invalid and Crippled Children in School. By R. C. Elmslie, M.S., F.R.C.S. Price 1s., post free.

SMITH, ELDER, AND CO., London.
The Child's Inheritance, its Scientific and Imaginative Meaning. By Greville Macdonald, M.D. Price 12s. 6d. net.

SPRINGER, JULIUS, Berlin.
Einführung in die experimentelle Therapie. Von Dr. Martin Jacoby. Price, paper, M.5.; bound, M.5.80.
Die experimentelle Chemotherapie der Spirillosen. (Syphilis, Rückfallfieber, Hühnerspirillose, Frambösie.) Von Paul Ehrlich und S. Hata. Mit Beiträgen von H. J. Nichols, New York, J. Iversen, St. Petersburg, Bitter, Kairo, und Dreyer, Kairo. Price, paper, M.6; bound, M.7.

STEINHEIL, G., Paris.
Radiométrie Fluoroscopique. Par le Docteur H. Guilleminot. Price Fr.2.50.

THACKER, SPINK, AND CO., Calcutta and Simla. (THACKER, W., AND CO., London.)
Sewage Disposal in the Tropics. By William Wesley Clemesha, M.D. Vict., D.P.H., Major, I.M.S., Sanitary Commissioner, Bengal. Price 15s.

VIGOT FRÈRES, Paris.
Manuel Pratique de la Lithotritie. Par F. Cathelin. Price Fr. 4.

VOGEL, F. C. W., Leipzig.
Handbuch der Kinderheilkunde. Herausgegeben von Prof. Dr. M. Pfaundler und Prof. Dr. A. Schlossmann. Das Handbuch erscheint in vier Bänden. Band III. und Band IV., 2. Auflage. Jeder Band kostet M.12.50 brosch.; M.15.-geb. (Der Kauf des ersten Bandes verpflichtet zur Abnahme des kompletten Werkes.) Fünfte Band (Erster Ergänzungsband). Chirurgie and Orthopädie im Kindesalter. Von Professor Dr. Fritz Lange und Priv.-Doz. Dr. Hans Spitzy. Price M.20.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BAKER, JOHN, M.D. Aberd., has been appointed Medical Superintendent of the State Criminal Asylum, Broadmoor.

BANKART, A. S. BLUNDELL, M.C. Cantab., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Queen's Hospital for Children.

COOK, F. E., L.R.C.P. Lond., M.R.C.S., has been appointed Government Medical Officer at Coff's Harbour, New South Wales, Australia.

COOMBE, RUSSELL, M.D. Cantab., F.R.C.S. Eng., has been appointed Honorary Consulting Surgeon to the Lyme Regis (Dorset) Cottage Hospital.

COOPER, HARRY JOSEPH, M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Lyme Regis (Dorset) Cottage Hospital.

DRYLAND, G. W., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Kington District of the county of Hereford.

DUNCAN, JOHN D. C., M.B., Ch.B. Edin., has been appointed Resident Medical Officer, Department of Agriculture, Commerce and Tourists, New Zealand.

EVANS, D. GORDON, M.B., B.S. Lond., has been appointed House Physician to the Royal Free Hospital, Gray's Inn-road, W.C.

FOULERTON, H. P., M.R.C.S., L.R.C.P. Lond., D.P.H., has been appointed Deputy Medical Superintendent of the State Criminal Asylum, Broadmoor.

GREEN, THOMAS ARTHUR, M.D., C.M. Edin., F.R.C.S. Edin., has been appointed School Medical Officer to the Bristol Education Committee.

HINE, ALFRED ERNEST BARRATT, L.R.C.P. Lond., M.R.C.S., D.P.H., has been appointed Medical Officer to the Lyme Regis (Dorset) Cottage Hospital.

HUGHES, W. STANLEY, M.B., B.S. Lond., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Medical Superintendent of the North Wales Counties Asylum, Denbigh.

KANE, F. W., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Honorary Physician to the Queen Victoria Maternity Home, New South Wales, Australia.

LLOYD, TIMOTHY J., L.R.C.P. & S. Irel., has been appointed Deputy Medical Officer of Health for the Frome (Somerset) Rural District Council.

LOWRY, J. A., M.D. R.U.I., has been appointed Medical Superintendent at the County Asylum, Brookwood, Surrey.

MACCULLOCH, STANHOPE H., M.B., C.M. Edin., has been appointed a Member of the Metropolitan Board for Invalidity and Accidents Pensions, New South Wales, Australia.

OGILVY, ALEXANDER, M.D., B.Ch., B.A.O. Dub., F.R.C.S. Irel., has been appointed Honorary Surgeon to the Bristol Eye Hospital.

OVERSLEY, EDITH, M.B., Ch.B. Glasg., has been appointed Assistant Medical Officer to the Colchester Education Committee.

PRIDMORE, J. W., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ryde District of the county of the Isle of Wight.

ROBERTS, H. H., M.B., Ch.B. Edin., has been re-appointed Medical Inspector of School Children to the Llanelly Urban Education Authority.

RODERICK, S. J., M.B., C.M. Edin., has been re-appointed Medical Inspector of School Children to the Llanelly Urban Education Authority.

SPURR, JAMES, L.R.C.P., M.R.C.S., has been appointed Medical Officer to the Lyme Regis (Dorset) Cottage Hospital.

STEWART, ARTHUR A., M.B., Ch.B. Glasg., has been appointed Public Vaccinator for the District of Otautau, New Zealand.

VICKERY, D. H., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer by the Crediton (Devon) Board of Guardians.

WILLIAMS, S., M.D. Lond., has been re-appointed Medical Inspector of School Children to the Llanelly Urban Education Authority.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ALBERT DOCK HOSPITAL, Connaught-road, E.—Senior House Surgeon. Salary £100 per annum. Also House Surgeon. Salary £50 per annum. Both with board, residence, and washing. Each for six months.

BIRKENHEAD AND WIRRAL CHILDREN'S HOSPITAL, Woodchurch-road, Birkenhead.—House Surgeon. Salary £100, with board, residence, and laundry.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £200 per annum, with rooms, fire, light, and attendance.

BLACKBURN AND EAST LANCASHIRE INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, washing, &c.

BODMIN, CORNWALL COUNTY COUNCIL.—County Medical Officer of Health. Salary £500 per annum.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Resident Medical Officer unmarried. Salary £160 per annum, with rooms, coals, gas, and attendance.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—House Physician, unmarried. Salary £80 per annum, with apartments, board, and laundry.

BRISTOL ROYAL INFIRMARY.—Honorary Dental Anæsthetist.

CARDIFF INFIRMARY (GENERAL HOSPITAL). Senior Resident Medical Officer. Salary £120 per annum, with board, washing, and apartments.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Clinical Assistant.

CRICHTON ROYAL INSTITUTION.—Two Crichton Fellowships in Pathology and Bacteriology. Salary £250 per annum each, with board, quarters, attendance, and laundry.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, &c.

DUMFRIES, CRICHTON ROYAL INSTITUTION.—Junior Assistant Physician. Salary £150 per annum, with board, quarters, attendance, and laundry.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Resident Medical Officer. Salary £100 per annum, with board, residence, and laundry.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board, lodging, and washing.

FRENCH HOSPITAL, 172, Shaftesbury-avenue, W.C.—Second Resident Medical Officer, unmarried. Salary £50 per annum, with board and laundry.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with rooms, board, and washing.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale, W.—Ophthalmic Surgeon.

INFANTS' HOSPITAL, Vincent-square, Westminster.—Physicians' Assistant. Salary £80 per annum.

ITALIAN HOSPITAL, Queen-square, W.C.—House Surgeon for six months. Salary £60 per annum, with board and residence.

LEICESTER INFIRMARY.—Assistant House Surgeon. Salary at rate of £60 per annum, with board, apartments, and washing.

LONDON HOSPITAL, E.—Medical Officer in charge of Department of Electrical and Physical Treatment.

LONDON TEMPERANCE HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £75 per annum.

MAIDSTONE, KENT COUNTY OPHTHALMIC HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

MANCHESTER ROYAL INFIRMARY.—House Surgeon for six months. Salary at rate of £100 per annum, with board and residence.

NEW HOSPITAL FOR WOMEN, Euston-road.—House Physician, Resident Obstetric Assistant, Clinical Assistant for Saturdays, and Anæsthetist (all females).

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Examiner.

ROYAL HOSPITAL OF BETHLEM, Lambeth-road, S.E.—Resident Physician and Medical Superintendent. Salary £750 per annum.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—Assistant House Surgeon for six months. Salary £20, with luncheon and tea. Also Clinical Assistants for six months.

SHEFFIELD CHILDREN'S HOSPITAL, EAST END BRANCH.—House Surgeon. Salary £70 per annum, with board, lodging, and washing.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, and washing.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

TORQUAY, TORBAY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, washing, &c.

UNIVERSITY OF LONDON.—Examiners.

WARMINSTER UNION, Wilts.—District Medical Officer and Public Vaccinator. Salary £90 per annum.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician for six months. Board, lodging, and laundry allowance provided.

WESTMINSTER HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with board and residence.

YORK COUNTY HOSPITAL.—House Physician. Salary £100 per annum, with board, residence, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Act at Barnet, in the counties of Hertford and Middlesex; and at Ballyward, in the county of Down.

THE Secretary of State for the Home Department gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuits Nos. 40 and 42, more particularly to Bow, Shoreditch, Bloomsbury, and Whitechapel County Courts.

Births, Marriages, and Deaths.

BIRTHS.

BURGESS.—On Nov. 2nd, in London, the wife of J. Hay Burgess, M.B., F.R.C.S., Capt., I.M.S., of a daughter.

HUMPHRY.—On Nov. 1st, at St. John's-street, Chichester, the wife of Philip R. Humphry, M.R.C.S., L.R.C.P., of a son.

ROBERTS.—On Nov. 5th, at Kalimpong, Bengal, the wife of C. L. Digby Roberts, M.B., Ch.B. Edin., Church of Scotland Mission, of a daughter. (By cable.)

WEBB JONES.—On Oct. 21st, at Henrietta House, London, the wife of A. Webb Jones, F.R.C.S., of a son.

WILSON.—At College-crescent, Fitzjohn's-avenue, N.W., the wife of J. Clark Wilson, M.D., M.R.C.P., of a daughter.

WOOD.—On Oct. 31st, at Wrington, Somerset, the wife of W. Vincent Wood, M.R.C.S., L.R.C.P., of a daughter.

DEATHS.

BINGHAM.—On Nov. 2nd, at Derby, John Joseph Bingham, M.D., of Alfreton, Derbyshire, aged 66 years.

CLARK.—On Nov. 4th, at Cross Deep, Twickenham, William Thomas Marston Clark, M.R.C.S., L.R.C.P., D.P.H., aged 53 years.

HOLMESTED.—On Nov. 5th, 1910, at Tuxford, Notts, Charles Wakeham Holmested, L.R.C.P., L.R.C.S., aged 63 years.

LORD.—On Nov. 5th, at Woodfield-avenue, Ealing, Richard Lord, M.D., M.R.C.S., in his 73rd year.

IN MEMORIAM.

IN memory of Henry Hugh Clutton, M.C. Cantab., F.R.C.S., of 2, Portland-place, who passed away Nov. 9th, 1909, aged 59.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HATTERS' "NEW DISEASE."

A CASE of importance to the hatting industry came before Judge Brown, K.C., at the Hyde county court last month, and the decision of the judge was reserved till recently, the questions at issue not being quite easy. The applicant was a working hatter and sought compensation for mercurial poisoning. The theory is that the mercury got into the system by being inhaled from the fur impregnated with it. The mercury was probably used in the form of corrosive sublimate for the preservation of the skins. In his judgment his honour doubted whether a workman could be said to be employed in a process, &c., when the employer did not provide the mercury or even know it was there. His honour thought not, and said "it would open a very wide door if it were otherwise, and would establish liability wherever an employer used in his business any article procured elsewhere by him, which wholly or in part was made of, or contained, or was even impregnated with lead, mercury, phosphorus, or arsenic." The judge was of opinion that Schedule III. of the Workmen's Compensation Act only referred to a process in which the employer himself used the mercury in the ordinary acceptation of the term, and therefore that this case was not within the Act. He dismissed the application with costs and invited an appeal. If this is the law, the judge had no choice as to what his decision must be. But it tells heavily against the workers, and to the non-legal mind it does not seem equitable that they should be exposed to such risks without a chance of compensation. The obvious thing would be, as it seems, to get rid of the poisonous impregnation to prevent the danger to health and life, against which at present there appears to be no protection.

LEICESTER MEDICAL UNION AND THE PEARL LIFE ASSURANCE COMPANY.

To the Editor of THE LANCET.

SIR,—I have been requested to forward you the following resolution, passed unanimously at the last meeting of members, which it is hoped you will insert in your journal:—

[RESOLUTION.]

"That the members of the Leicester Medical Union strongly disapprove of the new scale of fees proposed by the Pearl Life Assurance."

I am, Sir, yours faithfully,

Leicester, Nov. 7th, 1910. DOUGLAS BRYAN.

WANTED, A SUGGESTION FOR TREATMENT.

To the Editor of THE LANCET.

SIR,—In reply to "M.D.'s" appeal in THE LANCET of Nov. 5th, p. 1392, may I venture to suggest to him that, if he is free from any cause which may set up reflex irritation, such as enlarged prostate, renal or cystic calculus, &c., he would obtain relief from his enlarged knee-joints by applying two blisters, each 4 × 2, one on each side of the last dorsal vertebra. He will find full directions regarding this mode of treatment on p. 929 of THE LANCET of Sept. 24th last, where he will also find the reasons for adopting it.

I am, Sir, yours faithfully,

Nov. 8th, 1910. P. W. L.

OLD MEDICAL BOOKS.

AMONG a three days' sale of books at Sotheby's recently were included a few lots of medical interest. A black letter by Ulric von Hutten, "Of the wood called Guaiacum that healeth the Frenche Pockes, and also helpeth the Goute in the feete, the Stone, Palsey, lepre, dropsy, fallynge evil, and other diseases, translated into Englyshe by Thomas Paynall," small 4to, 1540, was sold for £8 15*s*. Another black letter, a fine copy, of Nicholas Monardus' "Joyful Newes out of the New-found Worlde wherein are declared the rare and singular vertues of divers Herbs, Trees, Plantes, Oyles and Stones, with their applications, as well to the use of Phisicke as of Chirurgery," 1596, brought £6 7*s*. 6*d*. "The Herball of J. Gerarde," 1636, 24*s*. "Select Observations on English Bodies: or Cures both Empericall and Historicall, performed upon very eminent Persons in desperate Diseases ..... now put into English by James Cooke," 1657. This was in original calf, and the catalogue stated "no portrait." The auctioneer was of the opinion that no portrait was issued with this edition. It realised £13.

AN INFANT KILLED BY CREASOTE AND A "COMFORTER."

IN the Hackney coroner's court the death of an infant, 13 weeks of age, was recently proved to be due to the following circumstances. The mother, the wife of a warehouseman, went out shopping, leaving the deceased alone with her two other children, whose ages were respectively eight and three years. The younger of these had seen his mother give the infant one of the objectionable rubber teats, known to ignorant mothers by the name of "comforters," and had also seen her dip it in a bottle of essence of aniseed before giving it to the baby to suck. The child of three proceeded to do this, but dipped the comforter in a bottle of creasote which stood on the mantelpiece where the aniseed was kept. The medical evidence given was to the effect that death, the immediate cause of which was bronchitis, had been accelerated by injury due to the creasote, and the jury returned a verdict of "Accidental death," the coroner making the observation that the case might serve as a warning to parents to keep dangerous things out of the reach of their children.

THE DESTRUCTION OF FLEAS.

To the Editor of THE LANCET.

SIR, Could any of your correspondents give an effective way of (1) destroying the pulex irritans: (2) keeping them off the person, the usually given methods having failed. A recent writer has stated that three parts of their life is spent on the ground, and anyone accustomed to stand by the bedsides of the sick poor can confirm this.

I am, Sir, yours faithfully,

Nov. 5th, 1910. MEDICUS.

SUPERSTITIOUS REMEDIES.

A CORRESPONDENT sends us the following list of "remedies," drawing our attention to the almost incredible fact that such superstitions still linger in out-of-the-way places in Ireland and Wales. The first five remedies are for epilepsy, and come from Roscommon:—

1. Where a person falls at the time of a first attack, if on a flagged pavement or in a court, at once lift a flag. Kill a fowl and cut a piece of the warm flesh. Place the bit of fowl with a silver coin in the hole and replace the flag, and there will be no return of the fit.
2. A child fell on a road on her way to school, having an attack of epilepsy for the first time. An old woman ran from her house and said "Don't touch the child." She then undressed the girl and taking the chemise she burnt it, then re-dressed the girl with a new chemise in place of the burnt one.
3. Dig a hole in the road where the person falls and put in a silver coin.
4. Procure the water in which a corpse has been washed and give a wineglassful to the patient three times a day. [This remedy was tried on the brother of the informant, but as he vomited the cure was of no avail.]
5. Procure the milk of a foal (not a mare), which is very rare, and give a teaspoonful three times a day.

For warts the following receipt is held good in County Mayo:—Cut 12 pieces of straw with the joints in the centre of each piece, place them in a hole in the ground, and as they decay the warts will wither.

For shingles an old Welsh gardener told his mistress that he was able to cure the affection by passing his hands over the affected parts, as he was the great-grandson of a man who had shot and eaten a bit of an eagle, which had given him and his descendants this miraculous power.

"*Hollins Cross.*"—The meat solution was analysed by THE LANCET and the report appeared in Vol. I., 1899, p. 240. According to Dr. Robert Hutchison (Food and Dietetics, London, Edward Arnold) it is made in the following way: Beef is chopped up finely and placed in jars, with its own weight of 2 per cent. hydrochloric acid. The mixture is heated in a Papin's digester for 12 to 15 hours with occasional stirring, till all the fibres of the meat are loosened. It is then rubbed up in a mortar to a fine paste and again heated under pressure for 15 to 20 hours. It is finally neutralised with carbonate of soda and made into a paste with water. The result is a fine "sludge" of finely divided meat fibre, part of which has been converted into peptone. One tin, which is recommended as a day's ration, contains half a pound and costs 2*s*. It is supplied by H. Poths and Co., 4, 5, 6, Bury-court, St. Mary Axe, E.C.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1910:—

Nov. 4th–12th (London).—Ninth International Motor Exhibition.
,, 7th–12th (Cape Town).—Twelfth South African Medical Congress (1910).
,, 11th–19th (London).—Stanley Exhibition.

In 1911:—

Feb. 20th–25th (Cairo).—Fifth International Congress for the Blind.
May–October Dresden).—International Hygiene Exhibition.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Birmingham).—British Medical Association.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September Brussels).—Exhibition of Fractures.
Sept. 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
,, 18th–23rd (Sydney).—Australasian Medical Congress.
,, 24th–30th (Rome).—International Congress on Tuberculosis.
,, 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.

October (Cologne).—International Congress of Criminal Anthropology.

In 1912:—
September (Prague).—International Congress of Radiology and Medical Electrology.
September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
September (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

In 1913:—
(London).—Seventeenth International Congress of Medicine.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—H. Charles Cameron, H. H. Dale): at 4.30 P.M.

Papers:
Professor Robert T. B. Wild: Pharmacology and Therapeutics of Sulphur and some of its Compounds.
Dr. H. Hume Turnbull: The Therapeutic Use of the Digitalis Group.

PATHOLOGICAL SECTION (Hon. Secretaries—C. Bolton, J. C. G. Ledingham): at 8.30 P.M.

Professor A. Powell: The Bentley-Taylor Method of Mounting Mosquitoes.
Dr. B. Bradley: The Biological Characteristics of B. Typhosus, with Special Reference to the Fermentation of Dulcitol and Cyobinose.
Dr. C. Bolton: The Effects of Diet upon the Formation and Healing of Acute Ulcer of the Stomach.
Dr. Firth and Dr. Ledingham: A Typical Chloroma.
Dr. Petrie and Dr. O'Brien: Experimental Production of the Carrier-state by Feeding.
Dr. Firth, Dr. Bainbridge, and Dr. Ledingham: Case of Fatal Infection associated with the B. aertryck.
Mr. S. G. Shattock and Dr. L. S. Dudgeon: Dried Mouse Cancer.

THURSDAY.

DERMATOLOGICAL SECTION (Hon. Secretaries—H. G. Adamson, J. H. Sequeira), at 11, Chandos-street, W.: at 5 P.M.

Cases:
Dr. A. Whitfield: Parakeratosis Variegata (?).
Dr. H. G. Adamson: Pemphigus Foliaceus of 16 Years' Duration.
Dr. Graham Little: (1) Mycosis Fungoides (with sections); (2) Granuloma Annulare.
Dr. Winkelried Williams: Parakeratosis of Finger of 20 Years' Duration, following a Dissection Wound.
And other cases.

FRIDAY.

OTOLOGICAL SECTION (Hon. Secretaries—H. J. Marriage, Sydney Scott), at 11, Chandos-street, W.: at 5 P.M.

Cases and Specimens:
Mr. Arthur Cheatle: Congenital Malformation of Pinna.
Dr. H. J. Davis: (1) Venous Thrombosis of both Orbits and Cavernous Sinuses, following Mastoid Disease; (2) Thrombosis of Internal Jugular extending to the Sternum in a Supposed Case of Enteric Fever with Mastoid Disease.
Mr. Sydney Scott: (1) Lateral Sinus Thrombosis developing after Operation for Acute Mastoid; (2) Specimen showing Otitic Retro-cerebellar Abscess.
Dr. Dan McKenzie: Infiltration of Both Auricles (? Chronic Lymphangitis).
Mr. C. E. West: Chronic Dermatitis of the Pinna due to Infection by Staphylococcus Aureus, under Treatment by Vaccine.
Mr. H. J. Marriage: Large Tubercular Polyp removed from the Middle Ear in an Injant aged 7 Months.
And other cases and specimens.

ELECTRO-THERAPEUTICAL SECTION (Hon. Secretaries—Reginald Morton, G. Harrison Orton): at 8.30 P.M.

Paper:
Dr. Alfred C. Jordan: The Röntgen Ray Examination of the Œsophagus.
Dr. Stanley Melville: Demonstration of a New Tube Stand.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8 P.M., Clinical Meeting. Cases will be exhibited by Dr. Voelcker, Mr. Fairbank, Mr. M. Heath, Mr. D. Fitzwilliams, Mr. Ashdowne, Mr. Barker, Dr. J. W. Carr, Mr. C. Symonds, Mr. H. French, and Mr. W. Low.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

FRIDAY.—8.30 P.M., Sir Rubert Boyce: Yellow Fever in West Africa (with lantern demonstration).—Dr. S. T. Darling: Autochthonous Oriental Sore in Panama.—Dr. R. F. Jones: Tropical Diseases in British New Guinea.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. G. Pernet: Clinique (Skin). 5.15 P.M., Lecture:—Mr. T. C. English: Surgical Affections of the Stomach.

TUESDAY.—4 P.M., Dr. G. Rankin: Clinique (Medical). 5.15 P.M., Lecture:—Dr. F. de H. Hall: Lymphadenoma and Intermittent Pyrexia.

WEDNESDAY.—4 P.M., Mr. C. R. Nitch: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. A. Latham: The Administration and Value of Tuberculin in Various Forms of Tuberculosis.

THURSDAY.—4 P.M., Mr. P. J. Freyer: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. T. C. English: Gall-stones.

FRIDAY.—4 P.M., Mr. G. French: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Bidwell: Rupture of a Gastric Ulcer.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Pritchard: Medicine,

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Mr. Beddard: Practical Medicine.

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. R. H. Cole: The Social Aspects of Insanity.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Pardoe: The Cardinal Symptoms of Urinary Disease (Surgical).

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. R. Wells: Differential Diagnosis of Early Forms of Insanity.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4 30 P.M., Special Lecture:—Mr. R. Howard: Some Clinical Aspects of Intracranial Tumours.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. R. Bradford: Sciatica.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical; Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting.) 4.30 P.M., Lecture: Mr. H. Evans: Treatment of Urethral Obstruction.

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture-demonstration:—Mr. A. de Prenderville: Anæsthetic Technique for Operation on the Nose and Throat.

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. Howell Evans). 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

MONDAY.—5.15 P.M., Demonstration:—Dr. J. H. Thursfield: Food and Food Diseases—The Treatment of Artificially Fed Children; Symptoms; Loss of Weight, Screaming, Vomiting, Colic (Special Post-Graduate Course.)

TUESDAY.—5.15 P.M., Demonstration:—Mr. H. A. T. Fairbank: Deformities—Infantile Paralysis of Arm and Leg. (Special Post-Graduate Course.)

WEDNESDAY.—5.15 P.M., Demonstration:—Dr. J. H. Thursfield: Food and Food Diseases—Diarrhœa (1) Acute, (2) Chronic; Treatment; Infantile Atrophy. (Special Post-Graduate Course).

THURSDAY.—4 P.M., Lecture:—Dr. Hutchison: "Consumptive Bowels."
FRIDAY.—5.15 P.M., Demonstration: Mr. H. A. T. Fairbank: Deformities—Flat Foot, Hammer-toe, Hallux Valgus, Spastic Paralysis. (Special Post-Graduate Course.)

LONDON HOSPITAL MEDICAL COLLEGE, Clinical Theatre, London Hospital, Mile End-road, E.
TUESDAY.—1 P.M., Clinical Surgery Lecture:—Mr. E. H. Fenwick: Removal of the Urinary Bladder.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.
TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. Ormerod.
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. S. A. K. Wilson: Syphilis and Muscular Atrophy.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.
WEDNESDAY.—4 P.M., Lecture:—Dr. Jex Blake: Cardiac Arrhythmia.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.
THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Syphilis—Treatment (Constitutional and Local in all its Forms).

ANCOATS HOSPITAL, Manchester.
THURSDAY.—4.15 P.M., Dr. E. B. Leech: Constipation. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.),

TUESDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (16th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (17th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (19th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 9th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Nov. 3	29·25	W.	0·03	65	47	37	38	39	Cloudy
,, 4	29·28	W.	0·43	65	48	39	40	41	Cloudy
,, 5	29·46	W.	...	56	47	35	36	36	Foggy
,, 6	29·45	W.		56	52	35	37	39	Cloudy
,, 7	28·85	S.W.	0·11	77	50	37	43	45	Cloudy
,, 8	29·43	W.	0·05	71	49	41	41	42	Cloudy
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An Address
ON
THE PROSPECT BEFORE THE MEDICAL STUDENT OF TO-DAY.

Delivered before the Medical Students' Association of the Belfast University at the Opening of the Session on Nov. 15th, 1910.

BY JAMES ALEXANDER LINDSAY, M.D. R.U.I., F.R.C.P. LOND.,
PROFESSOR OF MEDICINE IN THE UNIVERSITY.

GENTLEMEN,—Two problems confront the medical student: How to pass his examinations and how to obtain a foothold in professional life. The former is for the moment the more pressing; the latter is likely in the long run to prove the more serious. Of medical education I do not propose to speak to-night. It is at present in a state of flux, passing through a stage of evolution which will probably have salutary results. We are beginning to realise that too much has been attempted in the past, and that some limitation and concentration of the field of study must be effected. We cannot in the course of a five years' curriculum make even of the most promising medical student a good physicist, a good chemist, a good botanist, a good zoologist, a good anatomist, a good physiologist, a good pharmacologist, a good pathologist, and a good clinician. The thing is impossible, even if Harveys, Sydenhams, Hunters, Pagets, and Listers were as common as they are, unhappily, rare. What is now becoming clear—and one wonders that there was ever any doubt upon the subject—is that the preliminary subjects of the medical curriculum must be shorn of much of their detail, must be taught with a due regard to the ultimate destiny of the student, which in 19 cases out of 20, at a moderate estimate, is to become a practitioner of medicine. Further, medical education must steadily keep in view its two indispensable objects—viz., to enable the medical student to acquire a secure grasp of the essentials of his art, both on its theoretical and its practical side, and to give him sufficient practice in scientific method—in other words, an adequate intellectual discipline and training.

ALTERNATIVES OPEN TO THE YOUNG MEDICAL GRADUATE.

But it is of your after-career that I wish to speak to-night, of the life-work for which you are now, with more or less industry and earnestness, preparing yourselves. When you receive your diplomas from the Chancellor you will feel a temporary glow of satisfaction—very natural and human and proper. But the glow will not last long. A great novelist once wrote a novel with the title "What will He do with It?" That is the question which you will be presently asking about your piece of parchment. Is it to be a magic key to unlock the doors of fame and fortune, or only a ticket to a back-seat in the gallery of an inferior play-house? Time will tell. Much depends upon circumstance and opportunity, but more depends upon the holder of the parchment. Speaking generally, five alternatives lie before the young medical graduate: 1. He may become a resident medical officer in a hospital. 2. He may become an assistant in a laboratory. 3. He may enter one of the public services. 4. He may become a ship's surgeon. 5. He may become an assistant in general practice.

I have not time to contrast these careers in any detail, but will content myself with a remark or two. If you can, if financial and other circumstances permit, select an opening which will enable you to continue your education. However great your diligence, however thorough your training, you will on graduation be conscious of many gaps in your knowledge, many limitations in your experience. Take time, if you can, for further observation and reflection—whether it be in a hospital or a laboratory, or, better still, in both. Let your knowledge settle and clarify, or, to vary the figure, let it ferment and bring forth new forms and fresh combinations. There is no time in life when the mind is more receptive than during the two or three years following graduation, when released from the burden and torment of examinations and fascinated by the expanding vistas of his art, the young medical man tastes one of the purest joys of existence.

If the services should early claim you, there will lie before you a career with many attractions, and never more desirable than to-day, but with some definite and not inconsiderable limitations, with which you should acquaint yourselves before making your choice. If you should become a ship-surgeon—and the desire of seizing the only opportunity of seeing the world which may ever arise is natural, and even laudable—I have one or two cautions to suggest to you. Take two or three voyages, and no more; and then return to *terra firma*. The experience gained on shipboard is rarely of much value; the financial gains are in most cases scanty; the habits formed are not the best preparation for future professional life. In some ships in which I have been a passenger the doctor's duties seemed to be almost confined to taking what one of them described to me as a "smell round" the steerage quarters in the morning, and arranging dances and theatricals for the young ladies in the evening. Unless the ship doctor is of quite unusual stiffness of moral fibre, he is apt to sleep too much, to smoke too much, to take too many whiskies-and-sodas, and to devote more attention to current fiction than to Osler or Taylor or Rose and Carless.

An assistancy in general practice may be either desirable in itself and lead on rapidly to a partnership and a secure position, or it may prove laborious, unprofitable, and disappointing. Some time ago I encountered on one of the cross-Channel steamers a graduate of this school who had settled in the East-end of London. He complained of the hardships of his lot. I remarked, "Well, at any rate you have got your foot on the first rung of the ladder." "Yes," he replied, "and it is a *very dirty rung*." No doubt the lower rungs of the professional ladder often leave a good deal to be desired in point of cleanliness, as well as in other regards, but perhaps a little hardship at the commencement of one's career is not an unmixed evil. Ὁ μὴ δαρεὶς ἄνθρωπος οὐ παιδεύεται, says the stern Greek proverb—if one may still quote Greek in these degenerate days—which may be roughly translated, "We are all the better for an occasional application of the rod." Where things are too easy and nature too kind, where the savage lies in the sun and lets the bread-fruit drop into his mouth, nothing much is achieved in the domain of character. A visitor to Barbados once saw a negro enjoying his ease and thus addressed him: "How do you manage to pass the time, Sambo?" "I just lie in the sun, massa, and let the time pass me," was the reply. That is not a good model for the medical profession, which its worst enemies have never called an easy life. The rough and the smooth come in most lives, and it is well when the rough comes early, before the heart is too faint and the brain too tired to bear it.

The young medical graduate may at the outset of his career be undecided what department of practice will ultimately claim his attention—whether general practice or one of the special branches—and hence, he may be in doubt how to shape his course. Here, I think I may suggest two guiding principles. If there be a decided taste for, and early selection of, some special branch—e.g., public health or ophthalmic surgery—it is probably wise that the young graduate should soon bend his energies to his future life-work. In the absence of such special taste or early choice the best course is for him to cultivate himself as widely as possible, to enlarge the field of his experience in many directions, to make his professional armour as complete as he can. Specialism is the great feature of modern practice. It is the necessary corollary of advancing knowledge and the growing complexity of our art, and it is idle to impugn it. But we all know the dangers of a too narrow specialism. I have heard of a throat specialist, consulted for a pharyngitis, who gave some excellent advice as to the management of the throat, but overlooked the fact that the patient was in the early stage of typhoid fever. Cultivate yourselves as variously as you can, and do not be in too great a hurry to terminate your period of preparation, your medical novitiate. "Tout vient à point à qui sait attendre," says the wise French proverb, which we very inaccurately translate, "Everything comes to him who waits," thus turning one of the truest of proverbs into one of the most false. Everything does *not* come to him who waits—far from it. But everything, or nearly everything, does come to him who knows *how* to wait, to him who spends the waiting time well.

FINANCIAL REWARDS.

Let us now look at the career which awaits you in the future—the career of medical practice—in some of its

general aspects. Is medicine, as some assert, an overcrowded, arduous, and ill-paid profession, with little certain leisure, heavy responsibilities, and a relatively poor prospect of attaining length of days? Or is this view unduly pessimistic? And first, as to the question of overcrowding. It can hardly be denied that during the last three or four decades there has been in most civilised countries an undue rush to medicine, that the supply has exceeded the demand. This rush has been even more marked in France, Germany, Italy, and America than amongst ourselves, and it has been contemporaneous with a notable dearth of candidates for the Church—a very significant circumstance. It is highly probable that if some of those whom I address had lived a generation earlier, instead of handling the scalpel, or the stethoscope, and attending to the sick, you would have been engaged in expounding theology, baptising infants, and joining happy couples in holy matrimony. Whether this involves your loss or gain is a question which I shall not attempt to determine. But I do not think that overcrowding of the medical profession is an urgent question in Ireland. Belfast, with a population of about 380,000, has 247 medical men on its register, of whom about 230 are in practice, which works out at about one medical man to 1650 people, and this is a proportion which is supposed to afford a reasonable prospect of a livelihood to the medical practitioner. Cork, with a population of 76,000, has 93 medical men on its register; Limerick, with a population of 38,000, has 35 medical men; and Londonderry, with a population of a little over 40,000, has 34 medical men. If we allow for those recently qualified and not yet in practice, for those engaged in special branches, such as lunacy or public health, and for retired veterans, these figures, though ample, are not excessive. The case of Dublin, with two Universities and two other qualifying bodies, is exceptional. In England the ratio varies greatly, as might be expected. For example, Sheffield has a ratio almost the same as that of Belfast, while Brighton has no less than one medical man to 600 people—a very high rate, but accounted for by more or less obvious reasons.

But granting that, speaking generally, the medical profession is somewhat overcrowded, are not other professions in a like case? The congestion at the Bar has long been notorious. Of those called to the Bar it might be truthfully said, "Many are called but few are chosen." A well-known judge said recently to a friend of mine that there were 10,000 barristers in England, and only work for 500. I cannot guarantee the accuracy of these figures, but my authority is good. Or take the scholastic profession. In the *Times* of Oct. 7th, 1910, there were some interesting figures regarding the overcrowding in this profession. Of 4836 students who left college in July, 1909, prepared for scholastic work, it was found that in the following October 38 per cent. had not secured permanent work as certificated teachers, while 31 per cent. had secured no work at all. Now, how many of the graduates of this school are unplaced three months after graduation? Comparatively few, I think, except those who are lying out, waiting for some appointment. The large majority find billets of some kind in a few weeks or months. I grant that the billets are not always lined with swan's down, that the work is often hard, and the pay rarely munificent. But billets of some kind are found with surprising rapidity. The young recruits of our profession, whatever be their hardships, do not at any rate join the ranks of the unemployed. They do not frequent soup-kitchens, or go on deputations to the Home Secretary, or cry out for a "living wage."

Is medicine an arduous, a hard profession? Certainly it is. That is one of its glories. You will have "to endure hardness," many of you at least, and it will be good for you. If you are not prepared to have, occasionally at least, a rough time of it, to rise often at the unwelcome tinkle of the night-bell, to leave the dinner-table sometimes before you have finished your second cigarette, to resign the joys of the links on occasion because the telephone summons you elsewhere, to encounter fatigue cheerfully and to face danger with a light heart, turn back before it is too late, for you have mistaken your vocation.

Is medicine an ill-paid profession? That is a question difficult to answer. No doubt we all wish that it were better paid. "I should like to possess riches," said the poet Shelley, "because I think I could use them well." That is what we all think. Now I do not believe that finance is a strong point of our profession. No profession does so much for nothing or is so often defrauded of its just dues. Our legal brethren understand these things better. When you compare a bill of law costs—magnificent in amplitude, rich in detail—with the modest reminder which the practitioner of medicine sends to his patients at Christmas-time, you will recognise that law has at least one point of superiority over medicine. Further, there are no great financial prizes in our profession. If any of you have the ambition to become millionaires you have not started on the right path. You had better give up medicine and turn your attention to rubber, or petroleum, or whisky. That some branches of our profession are systematically sweated by the public can hardly be denied; witness the Irish Poor-law service, where in some cases I am credibly informed that the salary barely covers the doctor's car-hire. Those who expect good service on those terms are expecting too much from human nature. Again, medicine has no comfortable sinecures, no snug posts with light work and good pay, where virtue may enjoy its ease and suffer no hardship.

But there is something to be said on the other side. The financial rewards of medicine, if seldom brilliant, are often substantial, and they are fairly secure. If the standard of remuneration is in many cases too low, the fault is largely with ourselves. With ourselves, too, might rest the remedy, but a too careful regard for the amount and the security of our financial rewards is, upon the whole, opposed to the traditions of the medical profession. Ruskin says that the doctor likes his fee well enough, but that he would rather lose his fee and save his patient than gain his fee and lose his patient. I hope this is true, and that it always will be true.

OPPORTUNITIES TO EXTEND KNOWLEDGE.

Let us turn to some wider considerations. Medicine offers you, gentlemen, a work which is in touch with the reality of things, which is in contact with nature at first hand. Law is man-made. Theology is trammelled by tradition. Medicine looks, or should look, at the facts of nature as they are. She can afford to lift "the Veil of Isis"—that "thick web of fiction which man has woven round nature," as Huxley says. You will be first and essentially practitioners of an art—the art of healing; but it may be the high privilege of some of you to extend the frontiers of knowledge, to sound a little more deeply the unplumbed sea of mystery, by which we are surrounded. Research is an essential function of modern medicine, and, rightly understood, it is worthy of every encouragement. The difficulty is to find your true researcher, the man who will not only *seek* but *find*. When you have got him, he is a very important person indeed, but there are a good many imitation articles in the market. You may be destined to extend knowledge, and as Bacon says finely, "We see that voluptuous men turn friars and ambitious princes turn melancholy, but *of knowledge there is no satiety*." The physician should also be a naturalist, and while man is his special field of observation, he must include in his purview everything which has a direct relation to man on his physical side, and that takes him far. Think of the revelation of the methods of nature, of her mysterious workings, which has come with the development of the comparatively new science of bacteriology. Our "invisible friends and foes" have become potent realities to us, and we are gradually learning how to avail ourselves of their assistance or how to guard ourselves against their attack. Think of the light thrown on the problems of mind by the stupendous advance in our knowledge of the anatomy and physiology of the brain. A great metaphysician of a bygone generation—the greatest of his time—once wrote a paper on the thesis that a knowledge of the structure of the brain could throw no light on the phenomena of mind. We smile now at such a contention. The tables are completely turned, and the metaphysician and the psychologist look to the physiologist and the physician for light and leading. It is hardly presumptuous to say that any true theory of human nature must come from the side of medicine. Two of the most eminent of modern philosophers—Wundt and William James—owe much to having laid the foundations of their speculations in the study of our art. Practise your art, then—this first and chiefly—but advance knowledge if you can. It is probable that important facts, unrecognised, lie around us, if we had eyes to see. I once heard a great preacher drawing a vivid picture of the miseries of human life, and he described a man dying on a mountain

"with, perhaps, the plant which might have healed him growing by his side"—a moving picture, rhetorical, but in essence true and with many applications. We fail to see many things because "there is a veil upon our eyes." See that you open your eyes as widely as may be, that there be not upon them the veil of prejudice or superstition, of sloth or carelessness.

Medicine offers you, further, a field which is ever extending its borders, ever touching life at more points. In the infancy of our art its attention was confined to the healing or alleviation of wounds and diseases. The famous leech in the "Iliad," Machaon, knew a good deal about plasters and ointments, purges and febrifuges, but he did not know how to prevent suppuration or ward off ague. He would have thought it most unreasonable to require such knowledge from him. It was at a much later date, in quite modern times, that the prevention of disease, now justly regarded as more important than its cure, became one of the essential tasks of our art. And how vast is the field of prevention, how far in this matter does practice lag behind knowledge? It is not too much to say that if all the knowledge which science now puts into our hands were fully utilised, if there were no financial or economic difficulties, nearly all infective diseases—that grievous brood of Furies which has pursued poor humanity from the dawn of history until now—would be banished or reduced to insignificant proportions in the course of a single generation. Then, in even more recent times, the promotion of health—the science of hygiene or eugenics—has become organised, and just now there is slowly rising above the horizon the fourth, and final, task of the art of medicine—namely, a care for the purity of the species, a thought for the interests of the unborn, a determination that, as far as may be, the stern word of the Hebrew Scripture shall no longer apply, that "the sins of the fathers shall *not* be visited upon the children." To heal disease, to prevent disease, to promote health, to see that the fountain of human life is not polluted at its source—these are your tasks, gentlemen. They are worthy of *you;* see that you are worthy of *them.*

MEDICINE AND SOCIAL EVOLUTION.

Medicine, again, may be fairly described as a profession which is growing in public esteem, and more and more approving itself to an age of which the ideals are largely utilitarian. The great discoveries of Pasteur and Lister, of Koch and Behring have profoundly impressed the imagination of the world. It has been recognised that in some important fields the veil was truly being removed from nature. Turning to another field, the spectacle of a regenerated Cuba, a Panama Canal with a moderate death-rate, a West Africa partially rescued from the scourge of malaria—all the fruit of applied medical science—has seemed to herald the dawn of a new era for humanity, when man might hope for a final victory over infective disease. And the success—still partial, but none the less ultimately assured—of the Anti-tuberculosis Movement amongst ourselves tells the same tale. In many fields medicine is steadily extending its scope. Only the other day England, following in sadly-belated fashion the example of continental nations, admitted the doctor to inspect her schools and scholars. He is not yet admitted to a similar duty and privilege in Ireland, but this cannot be long delayed. When that day comes, as come soon it must, and the doctor enters the primary schools of Ireland as an official with authority, he will find a fair field for his energies, and if his language should be a little warm, let us hope that the Recording Angel will be lenient, due account being taken of the nature of the provocation. Our profession is still much under-represented in Parliament, and we have still to wait for a Ministry of Public Health. If we had a solid phalanx of medical men in the House of Commons who would cry out for attention to the health of the people with the same energy as others cry out for *Dreadnoughts* and Territorials, it would be better for the nation. We spend £70,000,000 a year on defence—on men, ships, guns, and powder—and how much on an organised attempt to stem the tide of disease and improve the national physique? A mere song by comparison. The machinery for destroying life is much more elaborate and much more costly than that directed to its preservation and improvement. Why? The only answer which I can suggest is that we are still barbarians, with a thin veneer of civilisation; still heathens, with just a slight tincture of Christianity. Man is a fighting animal—especially the Irish man—and the fighting instinct has its uses and is not without its noble side. Yet it is probably destined ultimately to disappear, but not in our day.

Medicine is probably destined to take an ever-increasing part in the work of social evolution. The great task which lies before the twentieth century is the organisation of society upon a scientific basis. We have got to rid ourselves of the dead hand of a past which we have outgrown. We have got to open our eyes to the light which is now streaming in upon us from so many quarters, to avail ourselves of every fresh insight gained into the powers of nature, to make opinion and practice really accordant with fact and experience. In this great work medicine must take a prominent part. Problems such as those of infant mortality, the increase of insanity, the falling birth-rate, the hygiene of trades and occupations, physical education and eugenics, and many kindred questions lying at the very root of social efficiency, cannot be settled, cannot, let us rather say, even begin to be understood, without the intervention of medical science. The medical man is, no doubt, primarily a healer—that is his indispensable function; but he must also be an educator, a pioneer of progress, a social reformer, a leader of opinion. He possesses knowledge which is useful, not only in the sick room and the hospital ward, but in the school, the factory, the farm, the senate. He must spread the light. "There is no darkness but ignorance," says our great poet, and Schopenhauer speaks shrewdly when he says, "All ignorance is dangerous and most errors must be dearly paid. And good luck must he have that carries unchastised an error in his head unto his death."

THE QUALITIES OF THE MEDICAL PRACTITIONER.

Once more, medicine offers you a career which includes a certain ethical training and discipline. What do these include, and are they altogether on the right side? Well, I do not claim for our profession that it produces any exceptional proportion of saints or heroes. It does produce some—Dr. McClure does not stand alone; but let that pass. I should rather claim that as medicine sees things as they are—man and nature unveiled—as the medical man is in touch, close touch, with realities, he should be first and foremost a man of common sense, level-headed and discerning, sympathetic but not sentimental, helpful but self-respecting, and he should be specially on his guard against vagaries of thought, opinion, and practice. The history of our art, which is far too little studied, affords many warnings against the follies of medical practice, the fleeting fancies of the hour. The popular folly of the hour just now is that soured milk is a panacea for most of the ills that flesh is heir to, and that if we can only introduce a sufficient number of the *Bacillus bulgaricus* into our large intestine all will be well. And leaders of our profession and eminent scientific luminaries lend their sanction to rubbish of this kind. We shall see how long this fad will endure. Probably it will have a brief day, but when it has "mingled with the infinite azure of the past" there will still remain the fact that buttermilk *does* possess some useful nutrient properties.

But it is often hinted that our work tends to make us callous to suffering. Now, by an absolutely invariable law of human nature the frequent repetition of any impression weakens its intensity. Even the twentieth cigarette is not quite so sweet as the first or the second. The spectacle of disease and death is our daily portion. We come to regard them with comparative calmness. It could not be otherwise, and to quarrel with this fact is merely to tilt against human nature. Yet I think we may claim without presumption that the medical man's sympathy, so long as there is anything to be done, is rarely wanting. His instinct is to act rather than to talk, and perhaps he is not always sufficiently mindful of the fact that there are occasions in life when kind words mean a great deal. But medicine is essentially a sympathetic profession. The Bar can never shake off the taint of contentiousness. The priest is always to some extent a man apart. But the doctor is a man amongst men, whose business it is to help them, who stands by them in the hour of their extremity, who places whatever knowledge or skill he may possess at their disposal, and who is often sorry that he cannot do more. "We should neither weep nor laugh at human beings," says Spinoza, "but endeavour to comprehend them." I think our profession fulfils that ideal at least as well as any other profession. A very eminent living physician once said to me

that the most important quality for a practitioner of medicine was—what do you think?—skill? wisdom? courage? resource?—No; but *hopefulness*. Christian Science has played, and is playing, such vagaries before high heaven as might well make the angels weep, but it has done us one service—it has emphasised the importance of the mental factor in the treatment of disease, of the weight to be attached to the expectation of cure and the determination to get well. Hope is, indeed, the sheet-anchor of poor humanity in the dark hour of sickness and suffering, as in other dark hours. There are times in most lives when if it were not for hope—hope that the clouds will some day break, that the dark night will be succeeded by some brightness of dawn—where should we be? Therefore when you enter the sick-room beware of the clouded brow or the mournful voice. You must for the moment at least dismiss your own troubles if you wish to relieve the troubles of others. You must have "a heart at leisure from itself" if you would cheer other sad hearts. Hence, as a profession, doctors are cheerful men by a sort of necessity of the case, an inherited professional habit of mind, for which, perhaps, we deserve little credit. The "weeping philosopher" may have his uses in the world, but let him not attempt to practise physic.

STATE MEDICAL SERVICE.

One last topic I suggest to you, but it is too vast to be dealt with adequately at the close of an address. A proposal has recently been put forward for the nationalisation of the medical profession—i.e., the reorganisation of the medical profession as a department of the Civil Service. If this were effected, doctors would become servants of the State, they would be subject to the supervision, direction, and control of the State, and private practice would cease. Medical men would be distributed according to the circumstances of the case and the needs of the locality; overlapping and competition would come to an end, work would be more evenly distributed, remuneration would be more equally awarded, sweating of the profession would be abolished. It is an attractive programme, but the practical difficulties in the way of its realisation are enormous. I must just hint at one. The value of a medical opinion varies from something less than zero to any figure you like to name. How will the State adjust the corresponding fee? Yet the suggestion is one worth thinking over. It must be remembered that there is at present a strong disposition to extend the area of State action, and that this tendency is sure to grow. It is impossible to say with any approach to certainty what, in the future, the State may or may not do, what functions it may or may not undertake to discharge. An organised State medical service is not an impossibility. Amongst its advantages would be the adoption of the One-portal Method of entry into the profession—on the lines of the Staats Examen of Germany—a reform towards which medical opinion in this country is steadily tending.

In conclusion, let us not lend too attentive an ear to those Cassandras who would assure you that in selecting the medical profession you are choosing a hard and thankless lot. You will not have an easy life, but it will be an interesting one. You will make many friends, and you will meet with some gratitude—perhaps as much as you will deserve. The patient whom you cure, and the patient who gets well when you happen to be in attendance—the two things are not quite synonymous—will probably let the world know about it. Few of you will achieve wealth, but all of you will, I hope, have bread-and-butter, and occasionally cheese. You will be members of a great brotherhood, in which there is much fraternal feeling and not more jealousy than might fairly be expected under the circumstances. Your work will tend to keep you in touch with the progress of science and all the wonders which are yet to be. Some of you may even live to pay your daily rounds by aeroplane or dirigible, without too much risk to your neck. You will probably witness an ever-increasing victory of man over disease, the gradual lightening of the dark shadows cast by malaria and plague, tuberculosis, and typhoid fever. You may watch the gradual evolution of a true sanitary conscience in the nation, a conscience which will banish those plague spots in our civilisation—the slum, the fever-den, the sweater's workshop, the insanitary schoolhouse, the foul dairy. You may, if you use well your opportunities, "see life steadily and see it whole." Few men have a better "conning tower" than ourselves. And then, when you are nearing what Kipling calls "the end of the passage," you will probably feel that your work has not been wholly in vain, that the world is a little, even if only a very little, the better and the sweeter because you have lived in it

HEREDITARY CRANIO-CLEIDO-DYSOSTOSIS,

WITH A REVIEW OF ALL THE PUBLISHED CASES OF THIS DISEASE: THEORIES OF THE DEVELOPMENT OF THE CLAVICLE SUGGESTED BY THIS CONDITION.

BY DUNCAN C. L. FITZWILLIAMS, CH.M. EDIN., F.R.C.S. ENG. & EDIN.,

SURGEON IN CHARGE OF OUT-PATIENTS, ST. MARY'S HOSPITAL.

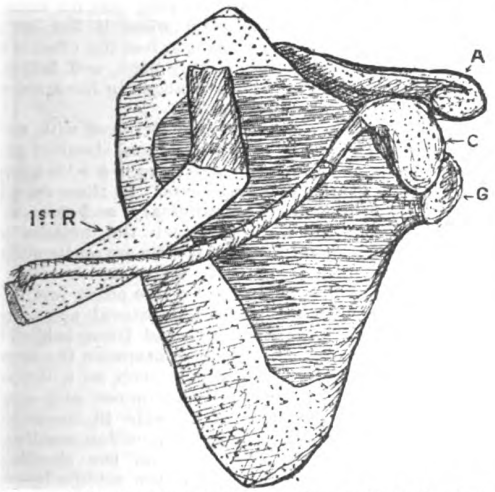
CONGENITAL defects of the clavicle occur and are usually associated with imperfect ossification of the cranial bones. This disease is undoubtedly rare, but its effects are so striking as to lead observers to place on record any instances which occur. So long ago as 1766 Morand noticed a typical example, but it was not till 1903 that Marie and Sainton accurately described the main features of this condition under the name of hereditary cranio-cleido-dysostosis. In 1905 Villaret and Francoz tabulated 45 cases, and reported an instance in which a mother and her three children were all affected. Two examples have come under my own observation, and I have been able to collect 58 others. A tabulated analysis of these 60 cases is appended to this paper. The records were often imperfect, but in all the identity of the condition is, I think, indisputable.

The first of my cases was a girl, aged 8 years, whose father, mother, brothers, and sisters were all free from deformity. Her right clavicle was in two portions, the division occurring at the junction of the middle and outer thirds. The sternal end was tilted upwards at its outer extremity, so as to over-ride the inner end of the acromial portion and form such a prominence in the neck as to induce the parents to seek treatment for the child. The acromial portion, owing to the weight of the limb, drooped and swung forwards and inwards, as in the ordinary fracture of the clavicle; its inner end lay under the sternal fragment and pointed upwards, backwards, and inwards, so that the right shoulder was lower, further forwards, and nearer the middle line than the left. An asymmetrical appearance was thus given to the upper part of the trunk when seen from in front, while posteriorly the vertebral border of the scapula on the affected side was more prominent than that of its fellow. The two portions of the clavicle were united by a ligament which became more evident on attempting to separate them. The point of the right shoulder could be forcibly adducted towards the sternum through a considerable distance, the point of disunion acting as the hinge. The prominence in the neck already referred to was not altogether due to the over-riding and tilting of the one fragment by the other, but was also accounted for by the fact that their adjacent ends were thickened in a very characteristic manner, contrasting markedly with the thin peg-shaped extremities seen in ununited fractures. There were no cranial, facial, dental, or other structural defects discovered. The arm movements were unimpaired. There was no history of trauma in infancy, nor had any pain or inconvenience ever been associated with the deformity. The lump had first been noticed when about 5 or 6 years, and was thought to have gradually become more prominent.

I have no hesitation in asserting that the condition in this child was a developmental defect. As regards the degree of deformity and position of the fragments, this case was typical of a class in which only one clavicle is affected. The position of the fragments may vary, so that the acromial overlies the sternal portion (Hultkrantz), or end-to-end fixation may be found (Carpenter).

The second case was that of a male child, aged three months, who died from marasmus. It had the large skull and shrunken-looking face so frequently mentioned in the reports of these cases. The ossification of the skull cap was extremely defective, the bones thin and translucent, the sutures widely open, and the fontanelles abnormally large, so that fully one-half of the vault was still in a membranous condition. In the shoulder girdle the scapulæ were well formed, but the clavicle on each side was represented by a

thin but distinct bar composed mostly of bone, but partly of cartilage. This bar, passing from the cartilage of the first rib, if not from the edge of the sternum, to the posterior end of the coracoid process, was attached to these points by short ligaments, and represented, I believe, the inner two-thirds of the clavicle. Unfortunately, no record was kept of the musculature of the two sides. Dr. F. J. Poynton and Dr. Reginald Miller showed this case to the Royal Society of Medicine, and it appears in the analysis as Case 51. My sincere thanks are due to these two gentlemen for being allowed to examine the specimens removed post mortem.



Sketch of the shoulder-girdle removed from Case 51. Shows first rib; A, acromion process; C, coracoid process; and G, glenoid cavity.

Other Features.

The features pathognomonic of hereditary cranio-cleido-dysostosis, other than those which are found in the clavicle, occur in the bones of the head and face. Particularly noteworthy are the shape and size of the skull, to which attention is drawn in 40 cases. In only 3 instances is the head stated to be normal; of the remaining 17 cases the notes are in many instances very incomplete on this point, and we may conclude that these characters either passed unnoticed or that no particular attention was paid to anything but the curious condition of the shoulder girdle.

The skull changes consist both in deficient and also in defective ossification of the bones forming the cranial vault. During infancy in this disease a large part of the vertex remains in its membranous condition. The anterior and posterior fontanelles are disproportionately large, or may, by the wide separation of the parietals, form one extensive fontanelle. This membranous area is further increased in size by an open metopic suture in front, and the absence of the interparietal portion of the occipital bone behind. This last-named piece of bone is developed in membrane, and is therefore affected in common with the other membrane bones of the vault; but as the remainder of the occipital bone is developed in cartilage it consequently escapes abnormality. As age advances this membranous area iminishes in size until the metopic suture, sagittal suture, and posterior fontanelle are obliterated by bone. This is usually complete by the twentieth year. Concurrently with this the anterior fontanelle shrinks until, a few years after the rest of the space, it is completely closed. Great delay in the closure of the anterior fontanelle is sometimes met, and in some cases it probably remains open throughout life; in Case 7 this fontanelle was "as large as the palm of the hand" at the age of 47, and in Case 24 was still unossified at the age of 56.

The delay in the transformation into bone of the membranous parts of the cranium is accompanied by excessive bone formation in those areas to which ossification has already extended, as if nature tried to compensate the unprotected membranous areas by increased bone formation in their immediate neighbourhood. As a result of this six prominent bosses develop on the vertex, arranged in three pairs, one behind the other, corresponding to the frontal, parietal, and occipital bones. The three bosses on the one side are separated from those on the opposite side by a broad median furrow, which is deepest in front and gradually becomes shallower as it extends backwards, while each symmetrical pair is separated from the other by a transverse furrow, one of which corresponds to the coronary and one to the lambdoidal suture; of these the anterior is the better marked, but is broader, shallower, and less evident than the median furrow. The formation of these bosses gives to the anterior part of the head an appearance resembling the hot-cross bun head occasionally seen in congenital syphilis, and this has caused observers occasionally to identify the condition with rickets, but in well-marked cases the frontal bosses are more prominent and the median furrow deeper than those found in syphilis and rickets.

A thickening analogous to these bosses is sometimes seen in the clavicle on either side of the interval between the two parts, as was strikingly demonstrated in my case. With this distortion of the normal outline of the head a corresponding variation takes place in the diameters of the skull. Where actual measurements are taken, the circumference, length, and breadth are all found to be enlarged, but not proportionately, the increase in breadth being greater than that in length, so that the skull acquires brachycephalic characteristics. Scheuthauer found on post-mortem examination of Case 24 a large number of Wormian bones situated in the sagittal and lambdoidal sutures, and that the spheno-occipital junction was markedly angular, with the convexity upwards.

In every case where the skull changes are present in a well-marked degree, they are accompanied by profound alteration in the skeleton of the face, the bones of which are said to be atrophied or undeveloped, the face itself frequently being described as small, and small it is when compared with the normal. The disparity in size between the small face and large head is frequently well depicted in illustrations which accompany many of the published records of this condition. Besides their diminutive appearance, the features are altered in a very characteristic manner. The supra-orbital ridge, partaking in the increased girth of the cranium, prominently overhang the orbits, while the bones bounding the orbits below, in common with the majority of bones of the face, are small and ill-developed and appear flattened or sunken in comparison. The roof of the orbit is sometimes depressed, thus causing some degree of exophthalmos. The general aspect of the orbit resembles that of a patient with a mild degree of hydrocephaly. The nasal bones are short, ill-formed, and not infrequently deviated to one or other side. Peculiarities, such as narrowness of the upper jaws or high vaulting of the palate, are mentioned 18 times, while irregular dentition is noted on 19 occasions. The reason for both these conditions is the same—namely, stunted growth of the superior maxilla, which gives rise to a V-like alveolar margin, thus greatly restricting the space available for the eruption of the teeth. Also with badly developed superior maxillæ and with overcrowding of the teeth, irregularity in the line of eruption is bound to occur. An exactly similar condition may be reproduced in children who suffer from naso-pharyngeal obstruction, where the disuse of the nasal air-passages entails lack of development of the maxilla, narrowing of the palate, and overcrowding of the teeth.

Various suggestions have been offered to explain these facial peculiarities—fœtal rickets occurring at the second or third month, and arrest of growth of the zygomatic arch; but most authors appear to regard lack of development of the facial and cranial bones as due to the same cause. Of the first two views nothing need be said. The last is easily shown to be fallacious, for not only are the bones of the face preformed in cartilage, whereas those of the vault are not thus outlined but are developed solely in membrane, but also a similar appearance is reproduced without the action of this disease by any condition in which there is delay in the closure of the vault of the skull, such as in the common forms of hydrocephaly. Because the increased intracranial bulk normally causes the cartilaginous base to expand and develop, but where the vertex remains unclosed, increased volume is readily accommodated by a separation of the bones of the vault, which "open like the petals of a flower," while the basal portions undergo a bending at the lateral margins, causing an angle to appear at the central part in the neighbourhood of the spheno-occipital junction, as was

noted in Scheuthauer's case. Want of expansion at the base of the skull must necessarily entail a lessened growth in the bones, which are firmly attached to this part of the cranium, hence the changes found in the nasal bones and superior maxillæ. In the lower jaw, however, which is not thus firmly attached, the stunting influence is less potent, and as we should expect, the face is frequently mentioned as being prognathous or the lower jaw is reported as underhung (Cases 45 and 54). Therefore the lack of development of the facial bones is secondary to the maldevelopment of the cartilaginous base, and has not a primary pathological significance.

I looked through the numerous skulls in the Museum of the Royal College of Surgeons of England in the hope of finding a skull with these characteristics among them, but was quite unsuccessful, an indication of the rarity of the condition.

The hereditary nature of this affection, insisted upon by Gegenbaur as long ago as 1864, although denied later by Gross, was fully recognised by Marie and Sainton when naming the disease by the title under which it is now known, and is conclusively proved by a consideration of this series—eight families producing no less than 31 affected individuals. In Case 17, not included in the above number, the father and brothers are said to be similarly affected, but no details are given. There can be little doubt that if the immediate ancestors and descendants of many other cases had been examined, this hereditary tendency would be even more clearly demonstrated. Transmission evidently is possible from parents of either sex, for 5 mothers and 3 fathers transmitted it directly to 23 children. I can find no evidence from the records of transmission to the third generation, but one must bear in mind that, among hospital patients, even with easily recognised and popularly familiar conditions, information as to the grandparents is rarely obtained.

The two sexes seem to be affected with equal frequency, 28 instances occurring in females and 26 in males; in 6 no mention was made of the sex of the individual.

Muscles.

The state of development of the muscles acting on the shoulder girdle has been noted by many writers, their superficial situation enabling accurate observation to be made; in a few exceptional cases opportunities have arisen for post-mortem examination. In my first case the muscles, as far as I could tell, presented no abnormality. I was not present when the specimen from the second case was removed, and unfortunately no note was made of the development and relationship of the various muscles.

The sterno-cleido-mastoid muscle seems to vary very much with the state of development of the sternal portion of the clavicle. When that portion of the bone is well represented the muscle is normal; but where there is only a small rudiment of bone present, the clavicular head of the muscle is reduced to a thin band partly attached to the bone and partly to the ligament prolonging that outwards. The sternal head of the muscle is always much less affected than the clavicular head (Kappler).

The clavicular portion of the trapezius, having no outer end of the clavicle for its insertion, is very frequently absent (Case 26), the muscle only coming as far forward as the tip of the acromion (Gegenbaur). It may, however, be present and find attachment to the coracoid and the ligament extending to that process of bone from the sternal portion of the clavicle (Scheuthauer).

The fibres of the deltoid muscle appear to be unaffected, but dissection shows that the anterior fibres are frequently lacking or only represented by a few fasciculi which take origin either from the inner border of the acromion process or from the fibrous band already referred to. In Shermann's first case the deltoid and infraspinatus muscles were very feebly developed. The posterior fasciculi of the muscles are well developed; and Villaret and Francoz noted enlargement of the tubercle on the spine of the scapula, and attributed its growth to the abnormal and compensatory activity of these fibres.

The clavicular head of the pectoralis major is usually present, but is feebly developed when the sternal portion of the clavicle is small; it was completely absent in Case 26. The chondro-sternal portion remains normal. There is some doubt as to the presence of the subclavius muscle; Gegenbaur, Kappler, Villaret and Francoz all question its existence, even where the two portions of the clavicle are well developed, and they consider that the movements of the bone are due to the action of the other muscles inserted into it. Scheuthauer, however, in the course of his dissections found the muscle hypertrophied and inserted into the under surface of the ligamentous representation of the clavicle. The deeper muscles seem unaffected.

In spite of the abnormal condition of the muscles, ordinary movements are uninterfered with. Many writers mention that the patients themselves were totally unaware of anything unusual, and Carpenter's cases had reached adult life, performing strenuous work, without noticing any disability. An illustration is published of a boy balancing himself on his hands with his feet in the air, showing that the shoulder girdle may retain its strength even when it has lost its rigidity. Other cases, however, seem to feel the effect of the condition, their arms becoming rapidly tired, and fatigue in the shoulders, after carrying her baby about in her arms, was complained of by one woman (Case 7).

But if the normal movements are uninterfered with, movements which are quite foreign to the normal shoulder girdle are allowed, especially in cases where there is a wide interval between the ends of the two fragments. In these cases the range of movements is truly extraordinary, and seems to be only limited by the distance to which the muscles will stretch. In the published illustrations, the favourite attitude in which to depict these cases is with the shoulders in apposition in the middle line in front of the chest just below the chin, giving a most bizarre and unnatural appearance. If when in this position they are viewed from behind, the upper part of the trunk resembles in appearance the narrow-shouldered outline seen in an animal such as a dog or a horse, in which there is no clavicle to prop out and support the shoulders. With the arms at the side in the ordinary position of rest the shoulder assumes the position usually seen in fractures of the clavicle—the point of the shoulder is lowered, swung forward, and is nearer the middle line than is normal. The scapula not being propped out, the anterior portion comes to lie in apposition with the chest wall, a winged appearance being produced by the prominence of the vertebral border. The humerus is slightly abducted and directed away from the side. This deformity is the more noticeable when the condition is unilateral and comparison can be made with the sound side. By pressure on the upper costal arches the position of the scapula just described may have some influence in producing the depression, so often noted, in the middle and lower parts of the sternum.

Clavicle.

Hereditary cranio-cleido-dysostosis is a condition which affects those bones which develop wholly or partly in membrane. For this reason it throws some light on the developmental origin of bones about whose morphology there still exists some doubt. It is interesting, therefore, to see what is the result of the dissection made by this disease upon the clavicle. The following table shows the incidence of the condition on each side throughout the 60 cases:—

	Left.		Right.
Both clavicles absent, 6 cases	—	.....	—
One clavicle alone absent	2	.....	0
One bone alone defective	1	.....	3
Sternal end alone represented	23	.....	27
Acromial ,, ,,	1	.....	2
Both portions present, but ununited	14	.....	17
Both portions joined, but showing by angling, notching, or arching, formation from two parts	5	.....	2
Ligament prolonging inner end outwards	13	.....	11

From this we see that throughout the series both the clavicles are totally absent on six occasions. Twice the bone is completely absent from the left side, the right bone being more or less represented; but the right bone is invariably present in some degree if there is any representation of the left.

The table also shows that when the bone is defective but not altogether wanting, the commonest abnormality is the absence of the outer or acromial portion, with the presence in a varying degree of the inner or sternal portion. This occurred 23 times on the left and 27 on the right side. Frequently the sternal end is fairly well developed, sometimes it survives only as a small cartilaginous nodule; in every case it is attached near the upper part of the manubrium sterni. With five exceptions (Cases 17, 21, 34,

No.	Name of reporter.	Sex and age.	Family history.	Head.	Clavicles.	Aspect and intelligence.	Remarks.
1	Abram.	M. 16	—	Head broad and bossed.	Only small nodules articulating with the sternum on each side, connected to a well-developed coracoid process by strong fascial bands representing the costo-coracoid membranes, to which the muscles are attached. The subclavius muscle is absent.	—	Dentition irregular; no episternal notch; manubrio-sternal junction opposite the attachment of the third costal cartilage.
2	Still.	M. 6½	Mother died from tuberculosis. Two other children healthy.	Head large and broad; anterior fontanelle 4¼ by 3½ inches.	Sternal ends present on both sides, more developed on the left; acromial portions absent.	Did not talk till 3½.	Face peculiar, nose flattened, terminal phalanges of thumbs short and nails curved. Walked late.
3	Seymour Taylor.	M. 20	—	Sketch shows head normal.	Sternal ends present and sterno-mastoid muscles attached thereto. Some attempt at development of the acromial end. Strong fibrous tissue representing the costo-coracoid membrane.	Intelligent.	—
4	Walsham.	M. 11	—	Head typically rickety; fontanelle unclosed.	Sternal two-thirds present on both sides, acromial one-third absent. Fibrous tissue passes from the sternal portion to the coracoid process.	—	—
5	Marie and Sainton.	M. 39	Father and mother well. Mother had six children, one premature. The patient had two children, the elder No. 6; the second died from convulsions at 2½, his head being deformed and open, like his brother, No. 6.	Head very large laterally; frontal and parietal bosses; both fontanelles open.	On the left side sternal end is deeply situated and small. On right side the two halves separated two fingers breadth.	Good.	Face small, nose depressed and deviated to the right; face prognathous, orbits overhanging. Dentition irregular; cleft palate; sternum depressed; genu valgum. Died from hemiplegia; never had syphilis.
6	,,	M. 12	Son of No. 5.	Head large, broad, and bossed; anterior fontanelle open.	Left side, two halves united by fibrous tissue. Right side, sternal part absent, the acromial part ending above the coracoid.	Poor.	Face small; dentition irregular; palate narrow and pointed.
7	,,	F. 47	Father died from paralysis, and mother from exhaustion. Nine children, seven alive and well.	Head large, broad, and bossed; anterior fontanelle and sagittal suture open.	Sternal portions only present in a cartilaginous state 3 cm. long; acromial portions absent.	Good; height, 1·46 metres.	Narrow arched palate; teeth shed; genu valgum; unaware of any abnormality of shoulders. Never had syphilis.
8	,,	F. 10	Daughter of No. 7.	Large head; frontal, parietal, and occipital bosses; anterior fontanelle persistent.	Sternal portions only present.	Normal.	Narrow arched palate, late dentition; flat feet, scoliosis, genu valgum.
9	Carpenter.	M.	A son 16 and a daughter 5, normal.	—	Bones on both sides in two halves. Sternal portions 3 inches long united by ligament 1½ inches long; sternal part overrides the acromial part.	Feeble development.	Unaware of any abnormality; sternal depression.
10	,,	M. 19	Son of No. 9.	—	Both clavicles kinked, but the two halves firmly united.	—	Large depression in lower half of sternum.
11	,,	M. 14	Son of No. 9.	—	Left clavicle very arched and prominent. Right side sternal part 2¼ inches overriding the acromial end, which is 1¼ inches; united by ligament.	—	Large transverse process of seventh cervical vertebra.
12	,	F. 12	Daughter of No. 9.	—	Left side normal. Right side sternal portion 2 inches overlapping the acromial, 1¼ inches.	—	Large transverse process of seventh cervical vertebra; flat feet.
13		F. 8	Daughter of No. 9.	Large head.	Sternal portions small; left side 1¼ inches, right side ¾ inch. Acromial portions absent. On left side x rays show a faint shadow between the acromion and coracoid. Sterno-mastoid muscle normal. Anterior part of deltoid and clavicular head of pectoralis major absent.	Small	Large transverse process of seventh cervical vertebra; large first (terminal?) phalanges.
14	,,	M. 7	Son of No. 9.	—	On left side the clavicle is notched, but the two halves firmly united. Right side, sternal part, 1⅜ inches; acromial part, 1½ inches; united end to end by strong ligament.		Transverse process of seventh cervical vertebra very prominent.

No.	Name of reporter.	Sex and age.	Family history.	Head.	Clavicles.	Aspect and intelligence.	Remarks.
15	Voisin and de Lepinay.	F. 6	Parents died from tuberculosis.	Head brachycephalic and bossed; both fontanelles, the metopic, and sagittal sutures open.	Left represented by a piece 2·5 cm. long at junction of inner and middle thirds; attached to sternum by ligament and extends outwards to the first rib, not to the acromion. Right sternal end 1·5 cm. long, the thickness of a crow quill.	Height, 1·18 metres; thin, intelligent.	Kyphosis and scoliosis, deformed chest. Bony palate not joined, but the soft parts bridge across the deficiency. Congenital dislocation of the radii backwards. The thumb longer and the fingers shorter than normal with enlarged ends. Genu valgum and flat feet; teeth irregular.
16	Morand.	—	Only survived a day.	—	Absence of clavicles, sternum, and costal cartilages.	—	—
17	Martin.	M. 30	Father and brothers had the same deformity.	—	Inner end present on one side (which not stated), the bone being only three-quarters the length of its fellow. A nodule of bone was developed in connexion with the coracoid.	—	—
18	Stahmann.	M. 9	—	—	Left clavicle absent and replaced by fibrous or cartilaginous tissue; right normal.	Normal.	Unaware of his defect.
19	Gegenbaur.	F. 56	Information not obtained of the parents of the mother and her two husbands.	—	Left side, sternal end 5 cm., right side, 6 cm. Sterno-mastoids attached to fragments, deltoids to acromion. Clavicular head of pectorals only slightly developed.	—	No other deformities.
20	,,	M. 36	Son of No. 19 by first husband.	—	Acromial portions absent on both sides. Sternal end 7 cm. left side and 6 cm. right side.	Small, 1·52 metres; fat.	Bent xyphisternum.
21	,,	M. 14	Son of No. 19 by second husband.	—	Sternal fragments 6 cm. left side and 5 cm. on right side. Acromial end joined by pseudarthrosis to the sternal end on the left side, absent on the right side.	Small, 1·31 metres.	—
22	,,	F. 22	Daughter of No. 19 by second husband, and had a normal child.	—	Sternal fragments, left 6 cm., right 4 cm. Acromial fragments, left 4 cm., right 5 cm.	—	—
23	Niemeyer.	M.	—	—	Total absence of left clavicle.	—	Scoliosis.
24	Scheuthauer.	M. 56	—	Skull thin and porous, Wormian bones present; fontanelles and sutures still open; head bossing, and an angle at the spheno-occipital synchondrosis.	Rudiments of the sternal ends with a fibrous band passing from the sternum to the glenoid cavity, to which were attached the sterno-mastoid, great pectoral, subclavius, and deltoid muscles. A small process 1 inch long was developed above the glenoid. The subclavius muscle was very large.	Small.	Atrophy of facial bones, malformed nasal bones; thorax flat. Died from phthisis; old hæmorrhage in frontal lobe.
25	,,	M. Old	—	Vault of skull compact; fontanelles and sutures open.	Small sternal nodules on both sides.	—	Atrophy of the facial bones. Skeleton in the Museum of Anatomy and Pathology, Vienna.
26	Dowse.	F. 15	Mother and six sisters well; no information as to father.	Large head; frontal and parietal bosses, with a mesial depression extending from the frontal region.	Only acromial ends present, slightly better developed on the right side.	Fat; normal intelligence.	Teeth irregular and ill developed; poorly shaped feet and broad sternum.
27	Kapler.	F. 16	Father and three sisters have congenital talipes varus; one sister dead.	Large head (figured in "Le Traité des Maladies Chirugicales Congenitales," Kirmisson, Paris, Masson, 1898, p. 497).	Sternal fragments only; right 1½ cm., left 4 cm. by ½ cm. broad; no fibrous continuation. Only one head of the sterno-mastoid muscle is present on the right. Other muscles normal.	Small and fat; 1·29 metres; intelligent.	Talipes varus congenital; great depression of sternum. Phthisical.
28	Hamilton.	$\frac{M}{F}$	—	Fontanelles and sutures abnormally large.	Total absence of both clavicles.	—	Died when 6 months old from marasmus. Numerous congenital dislocations.
29	Guzoni degli Ancaroni.	F. 60	Father and mother dead; well formed.	—	Sternal ends present; left 8 cm., right 5½ cm.; fibrous cord on left side.	Small, 1·47 metres.	Dorsal kyphosis; large intercostal spaces; low sterno-clavicular articulations. Had three abortions at the third month; no cause.

No.	Name of reporter.	Sex and age.	Family history.	Head.	Clavicles.	Aspect and intelligence.	Remarks.
30	Gibert.	F. 15	—	Large head, vault nearly all membranous.	Absent on both sides.	—	Nose crooked, face small. Died from acute osteomyelitis.
31	Todd.	—	—	—	Sternal and acromial fragments ununited on both sides.	—	Condition noted post mortem. Photograph.
32	Van den Bussche.	—	—	—	Sternal ends short; acromial ends absent on both sides.	—	Two illustrations.
33	Hultkrantz.	F. 46	—	Forehead large, median furrow; anterior and posterior fontanelles open.	Sternal ends; left 5 cm., right 4 cm. Prolongations passing out to the coracoid process. Acromial ends absent.	—	Teeth bad, dentition irregular; palate pointed.
34	,,	F. 28	—	Broad head; posterior fontanelle open.	Left side, inner end 6·4 cm., outer 5 cm; outer fragment over-riding the inner fragment. Right side, inner end 4·5 cm., outer absent.	—	—
35	,,	F. 1½	Daughter of No. 34.	Fontanelles and suture enormous; frontal bone cleft to within 1 cm. of root of nose.	Sternal ends; left 2·3 cm., right 1·5 cm. Fibrous prolongations to the coracoids.	—	Palate narrow.
36	,,	F. 1½	Daughter of No. 34.	Persistence of sutures and fontanelles; sagittal suture 2 cm. wide.	Sternal fragments, 1·5 cm. and 2·3 cm., with fibrous bands passing out to the coracoid process.	—	Pointed palate.
37	,,	F. 3½	Daughter of No. 34.	Sagittal suture and both fontanelles open.	Sternal portions 3·2 cm. on each side, with fibrous bands passing towards the coracoid processes.	—	Palate pointed and dentition irregular.
38	Schorstein.	F. 13	Father well, mother rickety; three brothers well. No syphilis or tubercle.	Large head; frontal and parietal bosses, median depression; fontanelles open at 9 years old.	Acromial two-thirds of the clavicle absent on both sides, except for a small nodule near the right acromion which was hardly visible to the X rays; sternal portions cartilaginous. Sterno-mastoid muscles attached to fragments.	Small, thin, anæmic.	Teeth bad and very irregular; slight sternal depression. Walked when 4 years old. Photographs and radiogram.
39	Pinard and Varnier.	M.	—	Head not large.	The bones in two halves on both sides.	Medium-sized, intelligent.	Palate narrow and pointed; never had syphilis. (I have been unable to consult this work, as the volume is not in any of the medical libraries in London.)
40	,,	—	Child of No. 39.	—	The bones in two halves like the father.	—	Patient dead.
41	—	—	Child of No. 39.	Natiform skull.	Both bones angled, but firm.	—	Palate highly arched.
42	—	F. 22	Daughter of No. 39.	Frontal and parietal bosses; sagittal groove; fontanelles closed.	Sternal over-riding acromial portions on both sides.	Very small, 1·51 metres.	Contracted pelvis, angling of sternum, palate narrow, dentition irregular.
43	Hamilton.	F. 38	Eight brothers and sisters normal.	Frontal bosses separated by a mesial furrow.	Sternal portions 2¼ inches long, united to the acromion process by a fibrous band better marked on the left side.	5 feet high, slight.	Scoliosis and lordosis; palate pointed, narrow; dentition very irregular and teeth badly developed. Did not walk till 3 years; double flat-foot.
44	Wolf.	M. Adult	Father had scoliosis: skull malformed like his son. Mother and 11 brothers and sisters well.	Large frontal, parietal, and occipital bosses; deeply sunk posterior fontanelle.	Sternal fragments 6 cm. Acromial parts represented by ligament better developed on the right side.	—	Scoliosis; nose deviated to the right; teeth very defective; muscles normal.
45	Hirtz and Louste.	M. 49	An only son, father dead. Only walked at 3 years old, with late dentition and peculiar aspect. Mother dead; cause unknown.	Forehead small, with prominent bosses and mesial furrow. Anterior fontanelle not closed; the posterior had closed late and irregularly. Parietals were prominent.	Sternal portions thin; left, 5 cm.; right, 4 cm.; that on right side cartilaginous.	Stood in a penguin-like attitude. Lordosis; face flat; intelligent.	Apparent exophthalmos due to depression of inferior orbital rim. Bridge of nose depressed by arrest of development of zygomatic arch. Jaw underhung; dentition late and irregular; palate pointed; palatal suture absent. Looseness of phalanges of the hands; nails affected.
46	Preleitner.	M. 12	—	Characteristics poorly shown in photograph.	Over-riding of the fragments on each side. Sternal portions 6 cm., acromial 3 cm.; adjacent ends enlarged.	Weakly aspect.	Radiogram.
47	,,	F. 8	—	Photograph shows broad bossed head.	Bone divided on both sides; sternal portions 5 cm., acromial portions 3 cm.	Photograph shows flat face.	Nose depressed; eyes deeply set. Radiograms.

No.	Name of reporter.	Sex and age.	Family history.	Head.	Clavicles.	Aspect and intelligence.	Remarks.
48	Shermann.	M. 3	Father and mother normal and well.	Frontal bosses; skull bones poorly ossified; fontanelles and frontal suture open.	Left side, rudimentary; right sternal half present alone. Scapulæ deformed; supra- and infra-spinati and posterior part of deltoid atrophied.	Normal.	Curvature of long bones needing operation. Photographs and radiogram.
49	,,	M.	—	Large square flat-topped head; marked depression behind the anterior fontanelle.	Both clavicles divided into the two halves.		—
50	,,	F. 8	Daughter of No. 49.	Fontanelles and sutures closed; marked depression at the site of the sutures.	Clavicles completely absent and X rays showed no trace; muscles normal.	Nose flattened.	Sternum depressed.
51	Gross.	F. 12	Father, mother, brothers, and sisters normal.	Enormous head, 507 mm. circumference, 174 mm. antero-posterior, and 147 mm. transverse diameters. Prominent frontal bosses; mesial furrow in frontal region, where the suture is open in its upper two-thirds.	Sternal portions 2 cm. on each side, cartilaginous. Clavicular head of pectoralis major small, of deltoid absent, of trapezius absent; sterno-mastoid normal.	Small and poorly developed; 1·18 metres high; orbits sunken.	Palate narrow; dentition irregular. Pigeon-chested, furrowed laterally; dislocation of the shoulder. Adenoids. Photograph and radiogram.
52	Spriggs.	F. 12	Father normal, mother has myxœdema; three other children well. Maternal uncle phthisical.	Cranium very bulging; frontal prominences.	Both clavicles in two halves united by ligament; adjoining ends enlarged; inner over-rides the outer part.	Face small; intelligent.	X rays show fragments very imperfectly ossified; depression of sternum. High palate; irregular dentition.
53	Poynton and Miller kindly lent the author the specimens shown.	M. ¾	Mother and father and four brothers and sisters normal.	Skull cap shown; large fontanelles and wide sagittal, metopic, and lambdoidal sutures.	Both clavicles completely absent, but well-developed bars of cartilage, partially ossified, attached to the first costo-chondral junction and base of the coracoid process by ligament. (See description in text.)		Died from marasmus. Specimens obtained post mortem.
54	Villaret and Francoz.	F. 36	Father died, 36; cause unknown. Mother died, 35; cardiac trouble and emphysema. They were first-cousins. Grandmother and five brothers and sisters normal. An uncle deaf from birth.	Fontanelles did not close till tenth year. Frontal, parietal, and occipital bosses; median frontal groove.	Left side normal, but highly arched. Right side, sternal portion 6·5 cm., overriding the acromial portion, which is small and atrophied and represents the outer third. The two united by ligament.	Slightly built, 1·43 metres.	Perforation of the palate posteriorly, the palate being very arched. Dentition poor and irregular; supplementary canine; jaw underhung. Nose deviated to the left. Orbital margins below are not prominent, giving the appearance of exophthalmos. The transverse process of the seventh cervical vertebra more prominent on the affected side; slight scoliosis; narrow pelvis.
55	,,	F. 9	Daughter of No. 54, born at 7 months. Father was alcoholic and epileptic. This is the third child. (First, born at 7 months, died in 5 hours; the second, full time, died at 21 months from tubercle. The first two children were by a different father.)	Frontal, parietal, and occipital bosses; median frontal furrow. Ossification completed in seventh to eighth year.	The clavicles on both sides are in two halves and are similarly arranged. The sternal fragments are 4 cm. long and are cone-shaped. The acromial fragment is small, moves with the scapula, but is little moveable on it. The two portions are united by a fibrous cord 2 cm. long. The coracoid processes are easily felt. X rays showed the fragments to be cartilaginous. Muscles normal.	Height, 1·14 metres.	Palate not perforated, though arched, with depression at its highest point; teeth small and irregular; lower lips rather large.
56	,,	M. 6	Fourth child of No. 54 born at full time.	Frontal, parietal, and occipital bosses; mesial frontal furrow deep. Anterior fontanelle not closed.	Both bones in two parts; sternal fragment left side 4 cm., right side 3 cm. The acromial fragments slightly more marked than in the last case. No fibrous attachment to be felt.	Nose depressed, orbits deep; face is overhung by the prominent forehead.	The head of the humerus is easily dislocated on both sides owing to the laxity of the ligaments. The transverse processes of the seventh cervical vertebra feel prominent. Palate arched; dentition irregular.
57	,,	F. 7/12	Fifth child of No. 54.	The same as the last case; large open fontanelles.	Clavicles normal.	—	—
58	Couvelaire.	F. 23	Mother dead; cause unknown. Father living and well.	Large frontal bosses, mesial frontal furrow; anterior fontanelle open.	Clavicles only represented by nodules 2 cm. long articulating with sternum and to which are attached the sterno-mastoid muscles. No fibrous prolongation felt.	—	Dentition bad. Lordosis of spine; genu valgum more marked on left side.
59	,,	M. 10/12	Second child of No. 58. First child normal.	Sutures and fontanelles large and open.	Clavicles absent on both sides.	—	—

36, and 48), when the sternal end alone is present, the condition is bilateral; of these exceptions, the clavicle on the opposite side is normal in one, in two portions in three, and rudimentary in the fifth. In marked contrast to this is the number of cases in which the acromial end alone is present, only two exemplifying this arrangement. In Case 6 a small nodule passing from the acromion to the coracoid process is all that represents the clavicle on the right side, the left bone being normal; in Case 26 the abnormality is bilateral. In neither case is any ligament mentioned passing towards the sternum. It can therefore be laid down as a rule to which there are very few exceptions: firstly, that when half the clavicle is absent it is the acromial portion which is wanting; and secondly, when this condition is present it affects both sides.

When both halves of the bone were present but were ununited (31 instances—14 on the left and 17 on the right side) the condition was usually bilateral. In three instances, however, the opposite bone was normal (Cases 5, 12, and 60); in two it was excessively arched (Cases 11 and 54); and in one it was distinctly notched (Case 14). Great variation in size is exhibited by the two fragments, but the inner is almost invariably the larger of the two, as is well seen in the first case which came under my own observation. In this case, too, the ligament binding together the two portions illustrates the bond of union usually found when both fragments are well developed. In only one or two cases when both fragments are well represented is the absence of fibrous or ligamentous tissue noted.

Where the sternal end alone is present it is interesting to examine the records, for in 26 instances (14 on the left and 12 on the right side) a fibrous or ligamentous prolongation is found extending outwards. When these prolongations are tabulated according to their position, it is singular to find that the majority pass, not to the acromion, but to the coracoid process. Scheuthauer found on dissection a band passing to the upper part of the glenoid cavity having in its outer end a process of bone an inch in length. This state of affairs was the same on both sides.

Table of Ligamentous Prolongations.

	Left.	Right.		Left.	Right.
To coracoid ...	10	9	To rib	0	1
To glenoid ...	1	1	To acromion ...	1	1

Seymour Taylor and Walsham each remarked that this ligament appeared to represent the costo-coracoid membrane. Martin, in the earliest record we have, gives a clear account of a nodule of bone plainly felt connecting the sternal end of the clavicle to the coracoid process; the side, however, is not mentioned.

The primitive shoulder girdle is composed of one dorsal and two ventral bars; the anterior ventral bar is the precoracoid, and the posterior is the coracoid. In fishes a dermal plate is added to the precoracoid, and the fusion of these elements is said to give rise to the clavicle in higher vertebrates. In birds, as flying necessitates a pectoral girdle firmly adjusted to the trunk, the coracoid and clavicle are well developed. In all mammals, except monotremes, the coracoid as a bone reaching the sternum practically ceases to exist. In carnivora and herbivora the clavicle also is undeveloped, but in man and other animals which use their upper extremities in climbing, eating, and similar actions besides mere progression, the clavicle is well represented, although only uncertain traces of the coracoid and precoracoid remain.

Ossification is stated to commence in the clavicle in the middle of the shaft, and to extend through the underlying cartilage to its extremities. The process begins in this bone earlier than in any other. An ossific centre can be recognised in it about the sixth week, but Couvelaire has detected it even as early as the thirtieth day. The inner end has a secondary epiphysis which appears later.

Considering the affection hereditary cranio-cleido-dysostosis, we find that it affects those bones which develop in membrane, preventing and retarding their development and ossification; therefore the portion of the clavicle which is most affected will be that part which develops primarily in membrane. Among the cases we find that the sternal portion is present alone on the left side on 23 occasions and the acromial portion alone only once; while on the right side the figures are 27 and 2 respectively. That is to say, the sternal portion was present alone on 50, and the acromial portion alone on only 2 occasions. From this we are driven to the conclusion that the outer end of the bone is the part which arises from membrane, while the inner originates in cartilage. Whether this membranous portion represents the dermal structure found in fishes, or is a membranous structure which has arisen *de novo*, as Mr. Jenkins has suggested to me, I am unable to say, but that it is membranous in origin is, I think, beyond doubt. The frequency with which the bone is met with in two separate fragments (31 times), or in which the bone, although joined, shows evidence of its two halves by angling or notching (7 times), is strongly in favour of a double origin. Additional evidence of the dual origin of the bone may reasonably be adduced, however, from other well-recognised characteristics.

1. The supra-clavicular nerve is occasionally included in a foramen on the anterior and upper aspects of the bone at a point a little external to the centre. This inclusion indicates that the nerve has been surrounded by the fibres of the growing bone, possibly, though not necessarily, at the site of junction of the two portions.

2. On rare occasions a vein, passing from the cephalic to the external jugular, is included in a foramen at the same situation. This vein represents the original termination of the cephalic vein still to be seen in some animals, but which has been diverted in man, presumably by the development of the clavicle. Its inclusion may be accounted for in the same manner as the nerve.

3. The curvatures of the bone differ, the inner being in the opposite direction to the outer. These are well seen in early life before muscular action has come into play; indeed, they are well seen in cases where the bone is present in two halves, and muscular action can have had no effect.

4. There is very frequently a tubercle at the junction of the middle and outer thirds of the bone on its anterior aspect, which goes under the name of the deltoid tubercle on account of its supposed association with the development of that muscle. This tubercle can often be felt well marked in children of poor musculature at an age when muscles have as yet left little impression of their bony attachments. It is also significant that on the under and posterior aspects of this part of the bone there is another prominence developed—namely, the conoid tubercle. These tubercles may be analogous to the prominent line frequently left at the junction of epiphysis with diaphysis.

5. On looking at the configuration of the bone it is at once seen that the inner two-thirds are cylindrical, like most limb bones developed from cartilage, while the outer third is flat and tabular, resembling more the membranous cranial bones.

6. In about 45 per cent. of bones a small nutrient foramen can be seen on the under surface between the deltoid and conoid tubercles, some distance to the outer side of the main nutrient foramen.

Many observers have endeavoured to recognise the morphological portions of the clavicle by means of microscopic sections and different staining reactions, but so far without throwing any very clear light upon the subject. Gegenbauer, whose description has been followed in most anatomy books, placed the primitive membranous portion in the middle of the bone, and stated that cartilage developed later at each end, and from these cartilages the bone increased in length. Kölliker, from the investigation of embryo rabbits of 2 millimetres, thought the bone began to ossify in the centre over a bar of cartilage, this cartilage differing in some respects from that found elsewhere in the body. Couvelaire, on cutting sections through human embryos of 19 and 50 millimetres long, came to the conclusion that the bone ossified from a core which was completely surrounded by cartilage. Paterson, from the microscopic examination of sections of rabbits, rats, and human embryos, formed the opinion that "the clavicle possibly contains more than one morphological unit (judged by its ossification directly in the outer part and indirectly through cartilage in its inner part)." My own investigations strongly support this view. My former colleague, Mr. Jenkins, by means of serial sections, has constructed a wax model of the shoulder girdle in relation to the trunk of a human fœtus of 16 millimetres long. The model shows the clavicle in two parts, both apparently cartilaginous. Mr. Jenkins believes that the inner mass forms the sternal end of the clavicle, while the outer mass disappears, the acromial end being developed from separate mesodermal tissue.

If, then, we admit that the bone is made up of two halves

and the outer represents the membranous portion, what does the inner represent? And here, although absolute proof is impossible, the different possibilities are worthy of consideration. These possibilities are two in number.

1. That the inner end is a new formation altogether, and does not represent anything found in the primitive shoulder girdle of lower animals.

2. That the inner end represents part of a primitive bar of cartilage or bone extending from the glenoid cavity to the sternum, of which the other parts are represented by the coraco-clavicular ligaments and part of the coracoid process.

The first of these alternatives has nothing to recommend it, while very serious objections can be raised against it. For in all developmental errors those structures which have the oldest phylogeny appear earliest and therefore suffer least, while the more recent the modification the later it appears, and consequently the more will it be affected. Now, according to the table of defects in the clavicle which has been drawn up we see that the outer end suffers far more frequently than the inner, which therefore must be looked upon as the more ancient structure.

We are in consequence thrown back on the second of the two alternatives, and everything points to the probability of this being the more correct of the two views. In many of the cases in which the acromial end of the clavicle is suppressed, this bar, extending from the sternum to the glenoid cavity, is well represented by the more or less developed inner end of the clavicle, by the ligament already mentioned proceeding outwards to the coracoid process, and by the base of the coracoid itself. When both halves of the bone are present but ununited this bar is represented by the inner half of the bone, the ligament joining the two halves, the coraco-clavicular ligaments and the coracoid as before.

While, therefore, there can be little doubt that the inner portion of the clavicle does represent a part of this primitive bar, there still remains the task of deciding whether this bar is a precoracoid or a coracoid, and here again, though it is impossible to dogmatise, the possibilities may be set the one against the other. In endeavouring to trace, in the component parts of the greatly modified and highly specialised shoulder girdle of man, the representatives of the elements of the primitive pectoral girdle, I can only discuss those views which this investigation indicates as the more probable. The chief possibilities may be stated as follows:—

1. The coracoid is represented by the base of the coracoid process, the coraco-clavicular ligament, and the inner two-thirds of the clavicle, the precoracoid being represented by the tip of the coracoid process and the costo-coracoid ligament.

2. The coracoid is represented by the base of the coracoid process only, and the precoracoid by the inner two-thirds of the clavicle and the costo-clavicular ligaments.

3. The coracoid is represented by the tip of the coracoid process and the costo-coracoid membrane, the precoracoid being either absent or, as in the second possibility, represented by the inner two-thirds of the clavicle and the costo-clavicular ligaments.

The coracoid process develops from a primary ossific centre which appears during the first year at the base and extends, not only towards the apex, but also towards the base, and forms part of the glenoid cavity. Several secondary centres, which appear later, only form a small portion of the process. Sabatier holds that the basal portion alone represents the ancestral coracoid, and as far as the coracoid process is concerned this view seems to be supported by two significant facts.

First, it is in the basal portion of the bone that the primary centre of ossification appears, pointing strongly to the fact that this portion of the bone has the oldest phylogeny. Secondary ossific centres, we know, have frequently but a short ancestry, being developed in response to the requirements of function. A good instance of this is seen in man, where the adoption of the erect attitude has rendered the older or reflected attachment of the rectus femoris muscle almost useless, and in consequence a new or straight tendon of origin has appeared; in connexion with this there has developed a small secondary epiphysis capping the anterior inferior spine of the ilium, which is present in no other animal. The same reason—namely, requirements of function—probably account for the appearance of the variable number of small secondary epiphyses in the coracoid process. The short head of the biceps and the coraco-brachialis probably account for the appearance of one or more at the apex of the process; while the long head of the biceps may account in the same manner for the small scale-like epiphysis which is sometimes present at the base.

A second point in favour of Sabatier's view is that this primary basal epiphysis extends downwards to take part in the formation of the glenoid cavity, for throughout the range of animal life the coracoid is a far more important factor in the shoulder girdle than is the precoracoid, and is the element which takes part, and sometimes takes the largest share, in the formation of the glenoid cavity, the remainder of the joint cavity being formed by the scapula, while the precoracoid is altogether excluded. As the ligament in the specimen from my second case is attached to the back of the coracoid near its base, it is fair to assume that it is probably in morphological unity with this portion of bone and is probably part of the old coracoid. This means that the specimen represents an almost complete coracoid bone, made up of the inner two-thirds of the clavicle, the base of the coracoid process, and the intervening coraco-clavicular ligament, and therefore answers to the conditions laid down for the coracoid in possibility No. 1. The relationship of parts revealed in the wax model, already referred to, also seems to support this view.

There still remains to be accounted for the tip of the coracoid process and the costo-coracoid ligament. This ligament, sometimes termed the bicornuate ligament, is a distinct thickening of the costo-coracoid membrane, running from the tip of the coracoid process along the lower margin of the subclavius muscle to the cartilage of the first rib, and can frequently be traced on the sternum close to the sterno-clavicular articulation. It is sometimes well marked in man, and occasionally presents in its substance chondral particles (Sutton), but is better marked in the quadrumana. This ligament and tip of the coracoid process would necessarily represent, in a rudimentary condition, the precoracoid bone as laid down in possibility No. 1, and not, as some believe, the coracoid bone itself. For if we allow for the moment the costo-coracoid ligament and tip of the coracoid process to be the representatives of the coracoid bone, as in possibility No. 3, it would follow that the base of the process, which from its manner of ossification is evidently not in series with the tip, must consequently be the precoracoid; and we here have the precoracoid forming part of the glenoid cavity to the exclusion of the coracoid—a state of affairs which, I believe, is unprecedented throughout the animal kingdom, and certainly unknown in the primitive type. Possibility No. 3, therefore, does not commend itself.

Returning to possibility No. 1 it will be argued that the reversed relationships of the two bars, the coracoid being cephalad to the precoracoid, renders this view untenable. But the reversed relationship is more apparent than real, for the inner ends of the two bars are in close proximity at the sternum, while of the outer ends, the coracoid is the base of the coracoid process, and the precoracoid is the tip of the same process of bone. In the former the line of the bar is angled in a cephalad direction at the coraco-clavicular ligaments, while in the latter the tip of the coracoid process is curved forwards and downwards in a caudad direction owing to the function it has assumed—namely, that of giving origin to the short head of the biceps, which according to Brodie was originally attached to the acromion process, the outer part of the coraco-acromial ligament representing the old tendon of origin. It is only fair to assume that the present shape of the coracoid process is largely influenced by its present function, and that originally the tip was nearer the head than the base of the bone, and therefore, the true position of the tip of the process and the costo-coracoid ligament is, as the name indicates, precoracoid.

Sutton's view, that the precoracoid bar is represented in man by the interarticular cartilage at each end of the clavicle, is not borne out by the condition found in the shoulder girdle of any of this series of cases, and fails to take into account the different origins of the two portions of the clavicle. Speaking of the interarticular fibro-cartilage at the sternal end Professor Paterson states that "the meniscus is not to be regarded as homologous with the rodent supra-sternal cartilage, but is rather to be associated morphologically with the cartilaginous inner end of the clavicle." If, then, as

we have assumed, the inner end of the clavicle is the inner end of the old coracoid process, this meniscus at its inner end may quite well represent the epicoracoid bone found in monotremes. Howe's view that the epicoracoid is represented by the tip of the present coracoid process leaves the costo-coracoid ligament unaccounted for. Against the second possibility may be urged the grave objection that it leaves the tip of the coracoid process and the costo-coracoid ligament unaccounted for. Considering, therefore, the relative merits of these different views it must be admitted that the possibility which is placed first appears to have most in its favour, while the reasons which can be urged against it are much less weighty than those against either of the other two.

Theories as to Cause.

A great many opinions as to the cause of the condition hereditary cranio-cleido-dysostosis have been advanced. Alcoholism, tuberculosis, syphilis, and rickets have all been advocated; but the accuracy of these opinions appears less and less probable with the growth of our knowledge of the subject. The position that hereditary cranio-cleido-dysostosis bears to achondroplasia is helpful in enabling us to obtain an idea of the true nature of both these affections, the former being a condition of maldevelopment of the membrane bones, while the latter is a condition affecting the development of those bones which originate in cartilage.

It might be suggested that the cause in both affections is due to the presence or absence of certain chemical constituents which are necessary for the correct ossification of membrane bones in the one case and of cartilage bones in the other: in much the same way as we know that hæmophilia must be due to a hereditary absence from, or presence in, the body of certain chemical constituents. Couvelaire advanced a somewhat similar view when he said that hereditary cranio-cleido-dysostosis was "the expression of a general taint with a predominance in certain osseous groups." This idea was prompted by the recognition of the frequency with which other malformations were met in individuals suffering from this condition.

In support of this the following defects are noted in this series of 60 cases: peculiarities in the shape of the sternum, 10 cases; scoliosis, lordosis, or kyphosis, 11; prominence of the transverse processes of cervical vertebra, 6; genu valgum, 4; peculiarities of the hands, 4; curvatures of the long bones, 3; and flat and pigeon chests, 2 each. Besides these anatomical departures from the normal, a large number of the patients are mentioned as undersized and of poor general development. In some the intelligence seemed to be diminished, but this was by no means the case in the majority. Couvelaire gives no hint as to what he thinks this taint may be. We are, therefore, constrained to leave the discovery of the cause until such time as we shall have a more accurate knowledge of the forces, chemical or vital, which govern development.

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Brook-street, W.

TWENTY CASES OF PULMONARY TUBERCULOSIS TREATED BY CONTINUOUS ANTISEPTIC INHALATION.

BY DAVID B. LEES, M.D. CANTAB., F.R.C.P. LOND.,
CONSULTING PHYSICIAN TO ST. MARY'S HOSPITAL AND TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

TWELVE months ago, on Nov. 2nd, 1909, I read before the Therapeutical Section of the Royal Society of Medicine a paper on the Physical Signs of Incipient Pulmonary Tuberculosis and its Treatment by Continuous Antiseptic Inhalations.[1] In this paper I gave full details of the method of treatment advocated, and narrated 30 cases of incipient or early pulmonary tuberculosis in which it had been employed with success. Now that another year has elapsed I desire to record the present condition of these cases, and to add an account of 20 subsequent cases in which the same method of treatment has been used.

My summary of the results a year ago was as follows:—

> I consider 22 out of the 30 as certainly cured. In 13 of them the cure has stood the test of time, for they have all remained well and in active work for a whole year. These are Cases 2, 3, 4, 5, 6, 7, 8, 9, 12, 13, 14, 15, and 16. To these may probably be added Case 1. Eight other cases—Nos. 18, 19, 21, 22, 24, 25, 26, and 29—are apparently quite well, but they have not yet stood the test of time. Five cases—Nos. 10, 11, 17, 20, and 27—I look upon as nearly cured. Only three cases remain about which one feels any doubt as to the favourable issue; they are Nos. 23, 28, and 30, and all these three cases have improved very considerably.

In a subsequent letter[2] I stated that "in all these three cases the doubt has been replaced by a practical certainty of cure."

At the end of a year after the reading of my paper I have to report that of the 14 cases in the first group at least 12 are still quite well and in constant active work—these are Cases 2, 3, 4, 5, 6, 7, 9, 12, 13, 14, 15, and 16. About the two others (Nos. 1 and 8) I have no further information. Seven of the eight cases whom I classed as "apparently quite well" have remained quite well during the last year and in active work. These are Nos. 18, 19, 21, 24, 25, 26, and 29. The eighth (No. 22) had a slight relapse in December and January at a time when he had reduced the use of the inhaler to two hours daily and was working hard for ten hours a day. He lost 4½ pounds in weight, the dull areas in his lungs became larger, and the air-entry feeble, with slight crepitus at his apices. But a fortnight in bed with persistent inhalation restored him. On March 8th, 1910, he had gained 9 pounds in weight and his physical signs were much improved On Oct. 26th, 1910, he writes that he has been continually hard at work since February, and that he is able to do his business without undue fatigue. He has still a slight cough.

Of the five cases—Nos. 10, 11, 17, 20, and 27—which I described as nearly cured, Case 10 wrote to me some months ago that she was quite well and could perform her duties without fatigue; about Nos. 11 and 17 I have no further information. No. 20 had a slight relapse in January, 1910, after having discontinued the inhaler for several weeks. A return to the treatment quickly produced an improvement, and she again gained weight, but signs of a small cavity in the outer and upper part of the right lung became evident. Under persistent treatment these signs progressively diminished, and in October, 1910, she is stated to be apparently quite well. Case 27 is unusually chronic, and has had pain in her right chest from time to time, but the physical signs are slowly but steadily improving. She has no cough and is increasing in weight.

Finally, as to the three cases Nos. 23, 28, and 30. No. 30 writes on July 9th, 1910: "It is exactly a year to-day

[1] The paper was published in the British Medical Journal of Dec. 11th, 1909, and also in the Proceedings of the Royal Society of Medicine.

[2] Brit. Med. Jour., Dec. 25th, 1909.

that I was taken ill. My weight is 11 st. 7 lb." [total gain 13½ pounds]. "My breathing is very good, and I have a good appetite. I am enjoying very good health." He has been actively at work. The little boy, No. 28, has remained quite well, and his physical signs are quite satisfactory. He has gained 7 pounds in weight. Case 23, the most severe of all the thirty except Case 3, writes on Oct. 25th, 1910: "I feel quite well. I have been back at business since April, and am stronger than when I returned. I feel no fatigue after the day's work, and have played cricket and golf all the summer. When I returned in April my weight was 12 st.; it is now 12 st. 4 lb."

CASE 31.—The patient, aged 69 years, was seen at his home in consultation with Dr. Hickley of South Lambeth-road on July 20th, 1908. Not a temperate subject. Had an operation for hæmorrhoids six months ago. Hæmoptysis for a week three months ago. Thinner lately, but had very little cough. Four days ago dyspnœa developed suddenly, and was found by Dr. Hickley to be due to pneumothorax on the left side. Gradual improvement took place, but when I saw him the left side was still to some extent distended and the heart displaced to the right. Dullness at all four apices, especially the two lower apices, with crepitation, blowing expiration, bronchophony, and audible whisper. Considering the age of the patient, the history of chronic alcoholism, the pneumothorax, and the marked evidence of pulmonary tuberculosis, the prognosis appeared to be almost hopeless. But he was advised to adopt the plan of treatment by continuous antiseptic inhalation (of which full details were published in my paper referred to above), in the hope of securing at all events some alleviation and improvement. Accordingly he practised continuous inhalation by means of a Yeo's inhaler for six weeks, during the first three of which he remained in bed. He then gave up the inhaler and went to the seaside for a fortnight. He then returned to business, and more than a year later (January, 1910) Dr. Hickley found that he was well and at work. In October, 1910, Dr. Hickley reported that he is still well, and leaves home for his business in the City every morning before half-past eight.

CASE 32.—The patient, aged 38 years, came for advice on June 28th, 1909, on account of attacks of epigastric discomfort with flatulence and shivering, which had recurred about twice a week since he paid a visit to New York three years before. No vomiting, hæmatemesis, or melæna. Smoked "a good deal." Moderate dilatation of the stomach was found on examination, and in addition it was noticed that small dull areas were present at both apices of the left lung only. He had a short rather frequent cough. On August 10th he was no better, and had lost 2 pounds in weight; the dull areas at the apices of the left lung were larger and a little crepitus was detected, but the right lung was still normal. On Sept. 27th the condition was unaltered, and lavage of the stomach was advised. This was performed by Dr. Bindloss of Harrow, and gave much relief. On Nov. 3rd the stomach was found less distended, but the shivering attacks continued, and the possibility of malaria was considered. The spleen was normal. He had lost 3 pounds in weight. There was no cough or sputum, but fresh signs of tubercle were found in the right lung, as well as in the left, with tenderness and crepitus. A blood examination by Dr. Spilsbury showed "red corpuscles, 5,400 000; hæmoglobin, 110 per cent.; white corpuscles, 3900 (polymorphonuclears, 48 per cent.; small mononuclears [lymphocytes], 48 per cent.; large mononuclears, 4 per cent.)" and the conclusion was drawn that the absence of anæmia was against the idea of malaria, while the increased proportion of lymphocytes was in favour of tuberculosis. A little sputum was obtained, and found to contain epithelial cells and some pneumococci, but no tubercle-bacilli. The opsonic index to tubercle was found by Dr. Parry Morgan to be 1·15. On Nov. 11th I saw the patient at his own home in consultation with Dr. Bindloss, when we again found the dull areas in both lungs. He was kept in bed and used continuous antiseptic inhalation (as above defined), the inhaler being removed only at meal-times. Four grains of quinine were administered three times a day. On Nov. 18th no more shivering had occurred, and the dull areas were all distinctly smaller. On the 30th, the treatment having been continued, he was found to have gained 6 pounds in weight, the dull areas were still diminishing, and no more shivering had occurred. There was still a little fine crepitus at the apices. He continued the persistent inhalation for three weeks longer, and on Dec. 20th had gained 1½ pounds more. Omission of the quinine was followed by a slight relapse of shivering and gastric symptoms, but in February, 1910, he wrote: "I am feeling better and weigh 10 st. 1½ lb."—a further gain of 1½ pounds, or 9 pounds in all. In October, 1910, he wrote that he had done his full work since January, that his digestion was now "almost perfect," that the shivering attacks had gradually become less frequent and had been absent for the last five weeks, and that he coughed only when he "caught cold." His weight was now 9 st. 11½ lb. in summer attire.

CASE 33.—A patient, aged 39 years, of Dr. R. H. Wilkin, Wickham-brook, Newmarket, seen on Oct. 13th, 1909. He had had cough two years; hæmoptysis 14 months ago; has not worked since; dyspnœa 12 months; night-sweats; and weight fell from 11 st. 11 lb. to 10 st. 9 lb. Then he improved, lost his night-sweats, and gained weight; but a fresh hæmorrhage occurred three months ago. His weight now was 10 st. 13 lb.; there were dull areas at all four apices, especially at those on the right side; feeble air-entry, with a little crepitus, but no bronchial breathing or audible whisper. Clearly he had offered considerable resistance to the disease; hence further improvement might be hoped for in spite of the long duration. He was treated by continuous antiseptic inhalation. I did not see him again until June 15th, 1910, when he reported that he had worn the inhaler about 20 hours daily for five months, and 18 hours daily for the last three months. He had improved at once and steadily until a month ago, when sudden cold east winds increased his cough. He felt much better, slept well (before using the inhaler he was often kept awake by cough until 2 A.M.), enjoyed his food, and had no indigestion. He looked well, and coughed once only during the examination, but he had lost 3 pounds in weight. His dull areas were distinctly smaller, and hardly any crepitus could be detected. In October, 1910, Dr. Wilkin wrote that the patient was "just holding his own," and that he had not again lost weight, but that he still coughed a good deal and expectorated occasionally. He was not yet able to do even half a day's work.

CASE 34.—A patient, aged 30 years, of Dr. J. W. Ellis of Swavesey, Cambridge, seen on Oct. 18th, 1909. He had been ill eight months, recurrent slight hæmoptysis; "brings up thick phlegm." Teeth very decayed and foul. Large areas of dullness at all four apices and several lower areas. Tenderness, very feeble air-entry, marked crepitus, and some bronchial breathing and audible whisper. The disease was extensive and advanced; the prognosis appeared to be grave. He was very feeble and looked very ill. Under continuous antiseptic inhalation, carried out under special difficulties and rather imperfectly, he improved steadily. On Nov. 13th, 1909, he had gained 5 pounds in weight in three weeks, the dull areas were smaller, and less crepitus was present, with hardly any bronchial breathing or audible whisper. On Dec. 18th he had gained 2 pounds more (7 pounds in all), and the physical signs were still improving. On Feb. 24th, 1910, he was going on well, and had almost lost his cough, his appetite had improved, and he had been able to do two or three hours' work every day. No crepitus could now be detected in his lungs. In October, 1910, he wrote: "I am able to do my work from about 6 o'clock in the morning until about 5.30 at night," but that he weighs 7 pounds less than in February. He had not used his inhaler much of late, and had given up the malted milk. His cough was variable, but at present better.

CASE 35.—The patient, aged 31 years, unmarried, was brought by Dr. J. Ashton of St. John's-hill, Battersea, on Nov. 16th, 1909. She had had cough for six months at least, slight hæmoptysis four months ago. Appetite poor. Dullness at all four apices, and four lower areas, with crepitus, but no bronchial breathing or audible whisper. After treatment by continuous antiseptic inhalation for a fortnight she stated that the cough was "ever so much better," and she had gained 2½ pounds in weight. The physical signs had already begun to improve. Unfortunately, in December she had an attack of colitis, which reduced her strength, and the inhalation was less regularly employed. In February her cough became worse, and it was found that all her dull areas were larger. She was therefore kept in bed for a fortnight, and the inhaler was used persistently except at meal-times. This soon checked the cough, which had become severe, and she looked brighter, but she had lost a pound in weight, and the dull areas were still slowly increasing. The situation of her home in London was such that it was difficult to obtain sufficient fresh air, so she was sent to Ventnor, where the windows were kept widely open and she used the inhaler continuously. After five weeks she returned much improved, and the inhalation treatment was again reduced. Her condition once more became less satisfactory. But a return to more thorough treatment again produced an improvement, and when I saw her on Oct. 2nd, 1910, she had gained 3½ pounds in the last seven weeks, and the physical signs were much more satisfactory. Total gain, 7½ pounds. She is to spend the winter at Arosa in Switzerland under medical observation, and is to practise antiseptic inhalation eight hours a day for the first two months and six hours a day subsequently.

CASE 36.—The patient, aged 53 years, married, was sent by Dr. G. A. Simmons of Westminster on Nov. 19th, 1909. She had had short hacking cough on and off for four years, with occasional streaks of blood and small clots in the expectoration. Her mother had died from phthisis at 52, and an uncle and two aunts had died from the same disease, in two cases after only a few weeks' illness. Dullness was present at all four apices and several lower areas, with extensive crepitus and apical tenderness. She was advised to remain in bed for ten days and practise continuous antiseptic inhalation. This was carried out, but the calls on her time were such that subsequently she could not use the inhaler more than two hours daily. She visited me again three months later (Feb. 15th, 1910), when I found that she had gained 9 pounds in weight, that the dull areas were all smaller, that the tenderness had entirely disappeared, and that no crepitus could be heard. I have not seen her again since February, 1910, but in answer to my inquiry Dr. Simmons writes (Oct. 13th, 1910): "Mrs. —— recovered completely, as far as could be made out, from her lung trouble; but she died about three months ago from cerebral hæmorrhage."

CASE 37.—The patient, aged 28 years, married, was seen at her home in consultation with Dr. Ashton of Battersea on Dec. 14th, 1909. Cough, called "nervous," for four years. No hæmoptysis. The cough became bad and accompanied by expectoration seven months ago. *She had been treated for six months by tuberculin injections given regularly every week.* When Dr. Ashton was called to see her in November, 1909, she was exceedingly ill, seemed collapsed, and had a temperature of 103° F. He at once stopped the inoculations, and suggested that she should adopt the treatment by continuous antiseptic inhalation as advised for Case 35. This was begun on Nov. 17th, 1909. Improvement followed immediately. After a fortnight the temperature had fallen to 101°, after a second fortnight it was normal. Her condition improved rapidly and steadily. When I saw her with Dr. Ashton on Dec. 14th, 1909, she was sitting up in bed, happy and smiling. Her husband and her mother bore testimony to the extraordinary improvement in her condition. I found extensive signs of tuberculous pulmonary disease and evidence of a pleural effusion on the left side. This was aspirated by Dr. Ashton and a pint of clear serous fluid was withdrawn. After this there was further improvement and she was able after a while to go out of doors.

More than four months later, in May, 1910, Dr. Ashton sent her to my house for an opinion about a small swelling at the site of the aspiration, from which pus exuded. I found that there was still much dullness and absence of breathing at the left axillary base in the neighbourhood of this opening, that the left side was very little used in respiration, and that there were signs of a dry cavity at the right apex. She was admitted into St. Mary's Hospital through the kindness of my colleague Dr. Willcox, and small pieces of the eighth and of the ninth ribs were removed by Mr. Clayton-Greene, and a drainage-tube inserted. Her general condition improved after this operation, and she returned home, but the discharge continued and she gradually grew weaker. Four months later she was readmitted into St. Mary's Hospital in a moribund condition. A necropsy was made by Dr. Spilsbury on Nov. 9th, 1910. The left lung was quite collapsed. Its upper lobe was wholly converted into a branching cavity. A smaller cavity existed below the apex of the left lower lobe, which had ruptured into the left pleura; the rest of this lobe was collapsed. The right upper lobe was universally adherent to the pleura and contained a large cavity. A smaller cavity existed below the apex of the right lower lobe. Much old fibro-caseous tubercle in base of upper lobe and in the middle lobe. Only the lower half of the right lung could have been capable of respiratory function. No caries of rib.

CASE 38.—The patient, aged 23 years, unmarried, was sent to me on Dec. 18th, 1909, by Dr. C. J. Horner of Walthamstow, who had read my

paper already referred to. She had had cough about a month, occasional night-sweats, loss of weight, some pyrexia (to 100° F.), and occasional pain at the left posterior base. Slight dyspepsia. No hæmoptysis. Her weight now was 8 st. 1½ lb.; two years ago it was 8 st. 10 lb. Dullness at all four apices, and two lower areas in the right lung, with poor air-entry but no crepitus, no prolonged expiration, and no audible whisper. Marked dullness and distinct pleural friction-crepitus at the left posterior axillary base. Under treatment by continuous antiseptic inhalation her cough ceased within a week, and there were no more night-sweats. The inhaler was worn persistently. On Jan. 18th, 1910, she had gained 3½ pounds in weight; there was better air-entry and very slight crepitus at the end of inspiration; the friction at the left base had now disappeared, and the area of dullness at this place had resolved itself into two separate dull areas. She felt so much better that she desired to go back to her work as a teacher. On Jan. 30th, 1910, she looked well and had a good colour. She felt quite well, the dyspepsia had disappeared, and no cough since the last visit. She had gained 3 pounds more in weight. The dull areas were all much smaller; a little occasional crepitus could still be heard. She was permitted to return to work. On Feb. 25th, 1910, she had gained 2 pounds more, making a total gain of 8½ pounds, and had now her normal weight of 8 st. 10 lb. She had done her full work as a school-teacher for a month without fatigue. She was advised to use the inhaler six hours a day for three months longer and to practise breathing exercises.

CASE 39.—The patient, aged 29 years, was sent by Dr. Hingston of Liskeard on Jan. 29th, 1910. He had had cough for some months; no hæmoptysis. His father died from phthisis at 64; a brother died from the same disease at 35. Dullness at all four apices and four lower areas; poor air-entry and slight crepitus, but no prolonged expiration or audible whisper. Weight now 12 st. 4½ lb.; he formerly weighed 13 st. Under continuous antiseptic inhalation he improved at once. On Feb. 22nd, 1910, he felt "much fitter, in fact quite well," had lost his cough, and had gained 6½ pounds in weight. His dull areas were all smaller, there was now good air-entry at the left apex, rather poor entry at the right apex, with slight prolongation of expiration at the right apex posteriorly, and slight tenderness and some inspiratory crepitus at the right lower apex; no other morbid sounds. On March 22nd, 1910, he felt "extraordinarily well" and "better than he had felt for two years." Had inhaled for eight hours daily and at night. The physical signs showed further improvement. In April and May he travelled to Egypt and the Mediterranean, still using his inhaler on an average four hours daily. He ascended the Great Pyramid so fast that he tired out his Arabs, and felt "perfectly fit" after an hour's "very hard climb" on Vesuvius. As the result of this hard exercise his weight had fallen to 12 st. 2 lb., but he felt and looked very well. On July 23rd, 1910, he stated that he was quite well and had walked 28 miles without fatigue.

CASE 40.—The patient was a clergyman, aged 47 years, sent by Dr. T. G. Lithgow of South Farnborough, on Jan. 30th, 1910. "Caught cold" in October, 1909 (had been regularly visiting one of his parishioners suffering from phthisis who died in March, 1910); felt very ill during the week following Christmas. "Very violent cough with heavy yellow expectoration, and a few streaks of blood" during the last three weeks. Dull pain over his chest lately, and several attacks of severe dyspnœa had occurred, lasting from 10 to 15 minutes. His appetite was poor, he slept badly, and felt quite unfit for work. I found large dull areas at all four apices, and four lower areas, with poor air-entry but only slight crepitus, indicating an extensive pulmonary tuberculous infection but in an early stage. There was obvious dyspnœa during the examination, with deep breaths and frequent short cough. His nervous tone was very low, he started when gently percussed, and his knee-jerks were much exaggerated. Some years previously he had experienced a "nervous breakdown," and of late excess of study and hard work, with other unfavourable circumstances, had much reduced his strength.

The prognosis appeared to be extremely gloomy. He was advised to go to bed at once on his return home, to practise continuous antiseptic inhalation, and to take milk and malted milk at frequent intervals. On the sixteenth day of his use of the inhaler his wife made the following note: "Temperature nearer normal; sleep natural (seven hours); cough much less; pain in lung gone; catarrhal condition almost gone; emaciation (of face) less; breathlessness better; hearing better; nervous irritation gone; mental depression better." On Feb. 23rd, 1910, Dr. Lithgow reported: "He came downstairs yesterday and feels better. No cough while wearing inhaler, but fresh air seems to irritate. Temperature has on five occasions since 30th Jan. been barely 99° F.; never above. Dyspnœa less." I found that he had gained 4½ pounds in weight; that his nervous tone was better; that nearly all the dull areas were smaller; that there was more entry of air and very little crepitus. He was advised to apply for six months' leave of absence, but to remain at home for the present, using the inhaler persistently in his own house and garden.

On March 16th, 1910, he had gained an additional five pounds (or 9½ pounds in all); his physical signs were still improving, and no sign of breaking down of lung had appeared. As he complained of heartburn, a mixture containing bicarbonate of soda, bismuth, and eight drops of tincture of nux vomica three times daily was prescribed. (Dr. Lithgow had previously given him three minim doses of liq. strychnin. thrice daily for three or four weeks.) On April 6th Dr. Lithgow wrote that "after some jerkings 12 days ago he discontinued the medicine, but on April 2nd both legs were convulsed and the right arm, with risus sardonicus of right side of face. A squint is said to have been noticed, and there has been a dislike of bright light. Pupils normal. Urine clear, 1015, acid, no albumin." On April 14th I saw him at his home in consultation with Dr. Lithgow, as the attacks of spasm had recurred and double (convergent) squint had been observed. I found that there had been no headache, vomiting, delirium, hallucinations, constipation, or pyrexia. The urine was normal. It was now three weeks since the nux vomica was omitted, yet the spasmodic attacks were more frequent though less severe. The double squint, when it occurred, was convergent. The contact of the stethoscope, also tickling of the sole, made him start. Knee jerks moderately increased; no clonus. Sensation normal. Cough had almost entirely ceased, and the physical signs were very satisfactory. We concluded that the nervous symptoms were not due to strychnine, were not indications of tuberculous meningitis, and were not uræmic. They were obviously the expression of a functional neurosis. Massage was ordered. On April 17th a marked change for the better was reported and the improvement was maintained. On May 6th Dr. Lithgow stated that he was "still improving." In October, 1910, Dr. Lithgow informed me that he was still making progress, but that his nervous tone was not yet normal.

CASE 41.—The patient, aged 23 years, was brought to me by Dr. G. D. Pidcock of Hampstead, on Feb. 7th, 1910. In August, 1909, while on the Continent he had a severe "cold," with coryza and cough, which made him feel "run down." In October slight hæmoptysis occurred; it lasted about a week. The sputum was then examined by Dr. Pidcock, and tubercle bacilli were found. A physician who examined him found no physical signs in his lungs, but advised that in view of the discovery of the bacilli, he should be sent to Ventnor and live as much as possible in the open air. This was done. When I saw him some weeks later there was dullness at all four apices and several other areas, with poor air-entry at the left apex, some crepitus at the right apex and at both lower apices, with a little audible whisper at the left upper apex posteriorly. He was advised to adopt the treatment by continuous antiseptic inhalation, but at first it was very imperfectly carried out, and when I saw him again on March 24th he had lost 4 pounds in weight and all his dull areas were larger, though there was still hardly any cough. He consented to make a more thorough trial of the inhalation method, remained in bed for a fortnight, and wore the inhaler persistently for four weeks. On his third visit, on April 22nd, he had gained 4½ pounds in weight and his physical signs were much improved. On June 18th he stated that there had been no cough or sputum since the last visit, and that he felt quite well. Dr. Pidcock states that when the sputum was last examined it contained "only a few bacilli, and these were all clumped."

CASE 42.—The patient, aged 35 years, unmarried, was seen on Feb. 18th, 1910. She had suffered from "hay-fever" every year for the last three years. Had had "a little cough lately," and a short cough occurred three times during the examination. She was found to have moderate areas of dullness at all four apices and some lower areas, with feeble air-entry, and over the largest dull area (at the right lower apex) there were some tenderness, slight double crepitus, and some prolonged expiration. Under continuous antiseptic inhalation she began at once to improve. On March 11th she had gained 4 pounds in weight in three weeks; all her dull areas were smaller, and the tenderness at the right lower apex had disappeared. She was advised to inhale eight hours daily for four weeks longer. On April 15th she felt better and had gained 3 pounds more (total gain 7 pounds); the cough was now very slight and only before breakfast, and the physical signs were less marked. On May 21st she felt very well, had no cough and no sputum, and her appetite was good. She was advised still to wear her inhaler four hours daily, and all day long if an attack of hay-fever should occur. A letter from her, dated Oct. 11th, 1910, says: "I am still using the inhaler for two or three hours a day; it has been a great boon to me when I have had the beginnings of hay-fever ..... and I wish that so simple a treatment were more widely known."

CASE 43.—The patient, aged 31 years, unmarried, was sent by Dr. Simmons of Westminster on Feb. 25th, 1910. She had had cough more or less for two years, worse for some months. No hæmoptysis. Had lost 6 pounds in weight. A brother died from phthisis at 26, and a sister at 14. Many dull areas were present, the largest being at the right upper and lower apices. Poor air-entry, some prolonged expiration, some crepitus, and audible whisper at the right apex, where cavitation appeared to be developing. She obtained three months' leave of absence from her duties, remained in bed for three weeks, and used the inhaler night and day. I saw her a second time on April 6th; she had gained 4 pounds in the six weeks, all her dull areas were smaller, and the condition of the right apex was much more satisfactory. She came to me a third time on May 13th; she had gained 2½ pounds more, making a total gain of 6½ pounds. She looked well, and her physical signs were further improved, but she still coughed occasionally. She was advised to use the inhaler at night and for six hours daily for three weeks longer; at the end of this time to return to work and practise inhalation three hours every evening and at night.

CASE 44.—The patient, aged 28 years, was brought by Dr. J. L. Forrest of Terrington St. John, Wisbech, on March 23rd, 1910. Four years ago he had pleurisy on the left side. Cough since December, 1909. "Influenza" in February, 1910, after which his cough became worse, and he brought up sputum; this had been found to contain "a considerable number" of tubercle-bacilli. He was very depressed and thought that as he was consumptive he must certainly die. His normal weight was 10 st. 12 lb., but he now weighed only 10 st. 1 lb. Dullness at all four apices (large areas at the right upper and lower apices and at the left lower) and four lower areas. Air-entry practically absent over the dull apices; slight crepitus here and there, but no sign of cavitation. He was advised to remain in bed for two weeks and to practise continuous antiseptic inhalation, and was reassured as to his prospects of recovery. On April 23rd Dr. Forrest wrote: "He is much improved; he put on 7 pounds weight in three weeks, and says he now feels very fit indeed. For ten days the temperature was 99° F. in the evening; now it never exceeds 98·6° in the evening and is 98° in the morning. Cough and expectoration now very slight." On May 4th Dr. Forrest reported: "He had a slight rigor two days ago and the temperature rose to over 100°, so he is to be kept in bed a few days. Sputum examined again; report states that tubercle-bacilli are fewer than six weeks ago." I saw him a second time on May 18th, when I found that he had gained 12½ pounds in eight weeks, all his dull areas were smaller, there was now good air-entry everywhere, but there were some indications of cavitation at the right upper and lower apices (where the largest dull areas were situated). He was advised to use the inhaler not less than six hours daily, and, if possible, at night. He acted on this advice, and when he presented himself for the third time on August 17th I found that in the three months he had gained 2 pounds more (total gain 14½ pounds), that he felt better, and could do more work without fatigue. He complained that his cough was still troublesome for periods of about four days at intervals of about three weeks, and that at these times he brought up yellowish sputum. His dull areas were all much smaller, and the cavities slowly contracting; no active signs. He was advised to persevere. His weight was now 11 st. 1½ lb.

CASE 45.—The patient, a boy, aged 6½ years, was seen at his home in consultation with Dr. J. E. B. Wells of Hoddesdon on April 10th, 1910. At the age of only 11 months a mass of tuberculous glands pressing on the trachea had been removed by operation. He was "a delicate, bright, intelligent child with very carious teeth, poor appetite, cough (worse at night), an evening rise of temperature (which has been twice

followed by profuse sweating), and a morning fall of about 2° F. The sputum has been examined; it contains no bacilli." A linear scar was present on the left side of his neck. A few small cervical glands could be felt. Dullness existed at the left apex in front and at all the characteristic areas posteriorly. Some crepitus could be heard in the left upper lobe and at the angle of the left scapula. The abdomen was normal. It was advised that he should be persuaded to wear a Yeo's inhaler and to practise continuous antiseptic inhalation for a month. On April 28th Dr. Wells wrote that the boy had taken kindly to the inhaler and that he had greatly improved. "Temperature nearly constantly normal for three days; eating well and putting on flesh. The cough is gone, as well as the sweating at night." Three months later (August 9th) he was brought to my house on his way home from Margate, where he had spent ten weeks, and had had no cough during the whole of this time. The characteristic small areas of dullness could still be demonstrated (including now the right apex also), but no morbid sounds.

CASE 46.—The patient, aged 30 years, unmarried, was seen on April 12th, 1910. She had given much time to athletic sports (tennis, hockey, and golf), and won prizes and championships. In 1908 she had influenza and some months later she was found to have dilatation of the heart. This was treated by baths and exercises and recovery followed. She had had a cough for more than a year, and frequently brought up a small amount of sputum, which was often slightly blood-stained. For several months her evening temperature had been 99° F. The sputum had twice been examined for bacilli but none were found. Her weight now was 8 st.; she once weighed 8 st. 9 lb. She thought that she had lost half a stone this winter. Dullness was present at all four apices and some lower areas. Air-entry at apices poor, and slight crepitus could be heard here and there, and at one spot a little prolongation of expiration, but no audible whisper. She was advised to remain in bed for two weeks and to practise continuous antiseptic inhalation. On May 4th she had gained 6 pounds in three weeks, looked and felt better. Her temperature, which had been 99·6° F. at first, gradually fell, and for three days had been normal. Cough better, dull areas smaller, air-entry more free, still a little crepitus. On her way home she caught cold from draughts in the train on a cold day, and her temperature rose to 99°. Yet on June 8th she was still improving, and had gained 4 pounds in weight in five weeks. Total gain, 10 pounds; present weight, 8 st. 10 lb.

CASE 47.—The patient, aged 21 years, was seen at a nursing home in Devonshire-street in consultation with my colleague, Mr. V. Warren Low, F.R.C.S., on April 28th, 1910. He had been admitted into the home under the care of Mr. Low two days before on account of a tuberculous knee, for which he had been under treatment for a considerable period in a large town in the Midlands, and the opinion had been finally expressed by a well-known surgeon that amputation was the only course by which life could be saved. For 11 months he had also suffered from cough, and for the last six weeks the cough had been very distressing. He brought up a copious expectoration, chiefly mucoid. Temperature 102° F. on his admission; it rose to 103°, and was now 101·8°. The right knee was much enlarged and tensely swollen, and was very painful. His cough was frequent, and whenever he coughed an expression of pain was seen on his face, the inflamed knee being jarred by the effort of coughing. His condition was, indeed, most distressing, but Mr. Low had been able to give some relief by the application of a von Bier's elastic bandage round the upper part of the thigh. The patient's condition made it difficult to examine his lungs accurately, but I found that he had large dull areas at all four apices and some lower areas. Crepitus could be heard, especially at the lower apices, but no definite evidence of cavitation. It was advised that he should practise continuous antiseptic inhalation, and be fed freely with milk and malted milk, while the treatment by repeated applications of the elastic bandage (which always gave relief) was continued. Mr. Low and I agreed that in his present condition amputation would be fatal. Under the use of the inhaler the cough was at once relieved, and it almost disappeared within a few days. His knee progressively improved, and after a month (May 24th) he was sent back home with the leg on a splint, and his medical man was requested to continue the employment of the elastic bandage three times a day. In July a little pus was found to be exuding from the outer side of the knee, and a consulting surgeon was called in. His opinion was that the joint was disorganised and full of pus, and that immediate excision or amputation was necessary. Arrangements were to be made for the operation on the next day, but the patient refused to allow anyone but Mr. Low to operate on the joint, so his father brought him up again to the nursing home in Devonshire-street. Here his temperature was found to be 98·6° F., and the chart showed a subnormal temperature during the whole of the last week, including the day on which the surgical opinion was given. The knee was obviously much smaller than in April, it was not tense, or painful, or tender. The small discharging cavity was examined with a probe and found to be separated from the joint. Mr. Low was of opinion that suppuration had occurred in a bursa about the head of the fibula. The patient's general appearance was greatly improved, he was stouter in the face and looked happy and smiling, he was free from pain and had hardly any cough. I found that all his dull areas were much smaller, that there was poor air-entry and slight crepitus at his right apex, and some suspicion of cavitation at his left apex, while the crepitus at his lower apices had disappeared.

On Oct. 16th Mr. Low kindly informed me that this patient is still progressing satisfactorily, that he has no cough at all, and that his temperature has been normal for several months.

CASE 48.—The patient, aged 29 years, was sent by Dr. T. Gash of Rochester on May 17th, 1910. Five years ago he suffered from "pneumonia"; he was in bed for six weeks, and was "tapped twice," a pint of *clear* fluid being withdrawn on each occasion. It can hardly be doubted that this was really a tuberculous attack. In July, 1909, he had "influenza," and Dr. Gash detected evidence of tuberculosis of the lungs and prescribed treatment by continuous antiseptic inhalation in accordance with the recommendation in my paper. (His weight was then 9 st. 13 lb.) He had accordingly used the inhaler for 17–18 hours a day for four and a half weeks. More than a year ago he lost his first child at the age of 11 months from "meningitis." The second baby is now dying from "tuberculous mediastinal glands"; the glands under the jaw were first affected. When I examined this patient he had already gained 4½ pounds in weight. The dull areas in his lungs were very extensive, and there appeared to be cavities at both apices and also at the left lower apex. On June 11th, 1910, he had gained 4½ pounds more, his dull areas were smaller, and his cavities drier; very little crepitus now audible. Hardly any cough. By his own desire he now spent three weeks in Crooksbury Sanatorium, under the care of Dr. F. R. Walters, who kindly permitted him to wear his inhaler for 15 hours every day. On July 11th there was a further gain of 2½ pounds and a further improvement in his physical signs. On Oct. 6th it was found that the cavities were practically healed and very little abnormal sound was heard. Cough and sputum very slight. Total gain in weight 12 pounds. He had not used the inhaler for a month and could do a day's work on his farm without much fatigue.

CASE 49.—A patient, aged 26 years, of Dr. E. B. Randall of Forest Gate, was sent to me on May 23rd, 1910, by a previous patient (Case 38). Dr. Randall wrote: "Her brother, aged 23, died of phthisis six months ago, and she has had a cold and cough on and off since, but came to me with a fresh cold in March, and her cough has continued; there are tubercle-bacilli in her sputum." Her weight was 7 st. 9½ lb. There were rather large dull areas, with double crepitus at the right apex, and inspiratory crepitus at the left. Under treatment by continuous antiseptic inhalation her cough diminished quickly and the sputum became much less. On June 13th she had gained 5 pounds in three weeks, all the dull areas were smaller, much less crepitus was heard, but there were indications of a small cavity at the right apex. She continued to use the inhaler at night and more than eight hours in the daytime. On July 11th she stated that the cough and sputum had nearly disappeared, and there was a further gain of 5 pounds. The physical signs showed further improvement. On Sept. 27th she had gained 6 pounds more, making a total gain of 16 pounds; her weight was now 8 st. 11½ lb. She had had no cough and no sputum for several weeks. Had walked eight miles without fatigue. Had a good colour. Felt and looked exceedingly well. She was full of gratitude for her recovery and said, "I feel I want to tell everybody about it!" She was still in mourning for the brother who had died from the same disease.

CASE 50.—The patient, aged 22 years, was seen at her home in consultation with Dr. H. Tipping of Palmer's Green, on June 7th, 1910. Her cough began in November, 1909, and she was then found to have tubercle bacilli in her sputum. She progressed fairly until four weeks ago, when the cough became worse. She had lost over 7 pounds in weight, had vomited after coughing, and her temperature had been of hectic type—99° to 100° F. in the morning and 102° (twice 103°) in the evening. During the last eight days she had practised continuous antiseptic inhalation, but had renewed the solution on the inhaler only three or four times in the 24 hours; yet the cough had ceased while she wore it. She was found to have rather large areas of dullness, with crepitus, at all four apices, and other dull areas, but no sign of cavitation. She was advised to continue the treatment and to renew the solution on the inhaler regularly every hour during the daytime. I have not seen this patient again, but Dr. Tipping informed me that gradual improvement followed. In about 10 days the temperature fell to 98°–99° (morning) and 100° (evening). Signs of a small cavity developed at the right apex. On July 14th hæmoptysis occurred and lasted for 48 hours, and on the 17th again for 32 hours, then it ceased. Absolute rest was advised. In September Dr. Tipping wrote that she had continued to improve, her lung condition showed an "all-round improvement," but a cavity was still present. She was now walking about quietly. In October she "continues to improve, her weight is increasing; she coughs only at night and in the morning. Is doing light house-work."

The 30 cases reported in my first paper were all incipient or comparatively early cases, though three or four of them were very acute and rapidly advancing when the treatment was instituted. In every one of these 30 cases the result is highly satisfactory. Some of the 20 additional cases now reported came under treatment at a much later stage of the disease or were attended with grave complications. In such instances recovery must be comparatively slow, and the final issue may be doubtful. Any case of pulmonary tuberculosis, if allowed to progress unchecked for many months, may easily reach a condition which is incurable by any form of treatment. But my contention in these two papers is that this ought never to be allowed to happen. Pulmonary tuberculosis is recognisable and ought to be discovered before there is any breaking down of lung tissue. To suspend the diagnosis until tubercle bacilli are detected in the sputum is like delaying the diagnosis of cancer until the glands are involved.

Weymouth-street, W.

HASTINGS WATER-SUPPLY.—The very important question of the water-supply is again before the ratepayers of the borough of Hastings. In February last a majority of 4792 in a poll of 5908 decided against a Bill which the council proposed to take to Parliament, but whereas that Bill included other schemes in addition to the water clauses the present Bill applies only to the Crowhurst valley waterworks, and seeks the usual powers for the purpose of improving and increasing the water-supply. The town council has adopted the Bill by the requisite majority, realising as it does the importance of the matter to the people of Hastings. The demand now exceeds the supply; the storage reservoirs only hold three days' supply, and the works do not possess duplicate machinery. Even if the present Bill is carried through Parliament the year 1915 will be here before the town possesses an additional supply of water.

ON FRACTURES IN THE NEIGHBOURHOOD OF JOINTS.[1]

BY ROBERT JONES, F.R.C.S. EDIN., CH.M. LIVERP.,
HONORARY SURGEON TO THE LIVERPOOL COUNTRY HOSPITAL FOR CHILDREN AND THE ROYAL SOUTHERN HOSPITAL; LECTURER ON ORTHOPÆDIC SURGERY, LIVERPOOL UNIVERSITY.

THE subject selected for this discussion is the management of certain fractures in the immediate neighbourhood of joints. In opening the discussion my remarks will be of a strictly clinical nature and will be based very largely on personal experience and practice. It is a common observation that until quite recently the subject of fractures has remained obscured by reason of the rapid progress made in other departments of our art, and the attraction they prove to most of our able colleagues. Indeed, it is scarcely an exaggeration to say that in many of our hospitals the treatment of a broken bone is left from first to last in the hands of a junior house surgeon. Such delegation of responsibility is often doubtless justified, but I am afraid the house surgeon himself sometimes feels that he is dealing with a comparatively unimportant branch of his art—a feeling engendered by the seeming indifference of his chief.

It is due largely to the brilliant and earnest work of Arbuthnot Lane that our attention has been re-awakened in this subject, and whether we are in agreement with him or not, we must all feel that his strenuous advocacy of his methods has been productive of much that is good.

Every general practitioner is supposed to be able to treat a fracture, but there is now a tendency for our students to be taught to rely too much upon a radiograph for diagnosis; the result of this must mean disaster, and will in some measure account for many stiff and useless joints which so often confront us. The correct interpretation of an X ray photograph amply repays study, but it involves a long and patient education. The radiograph should be used as a court of appeal only after a diagnosis has been attempted, and should not be made to deprive the student of his powers of clinical observation. I would prefer to have a bone skilfully plated in any part of my body by a truly aseptic surgeon rather than that it should be left in the hands of a surgeon, however able, who would treat it in direct violation of mechanical and physiological principles. There really should not exist two schools, one operative and the other mechanical. Each surgeon should decide for himself whether in a particular case an operation should be performed or not, and the way a successful result will be achieved will depend largely upon his special ability. The word "unjustifiable" should be rigorously excluded from our vocabulary when we deal with practices which differ from our own.

During the last 25 years I have treated an unusually large number of fractures involving the function of joints, a goodly proportion of which were not recent and involved disability or deformity, or both. The mere appearance of a joint does not seriously distress a patient; disability invariably does. From the patient's point of view impairment of function is a much more serious deformity than any mere outward change of shape.

I regard every case of fracture as the potential cause of disability, and am still learning from my own mistakes (and sometimes from those of others) certain fundamental rules for clinical guidance. It is necessary, for instance, that we should recognise the importance of Wolff's law, "that the internal structure of bone and then its outward appearance are adapted to the strains to which it is subjected and to the function it performs, and that the structure varies to meet alterations both in strain and function." Normal bone, in fact, is structurally fortified at that point where most work is required of it. By deflecting strain to another part, the structure is correspondingly strengthened there and weakened where it is no longer wanted. The "pathogenesis of deformities is therefore functional." It is therefore necessary in all fractures about joints clearly to appreciate the mechanical function of the joint. What is required is a knowledge not so much of its mere anatomy as of its movements and the directions of the normal lines of strain during muscular exercise.

[1] A paper read before the Surgical Section of the Royal Society of Medicine on Nov. 8th, 1910.

Again, a study should be made of the common disabilities which accompany so-called neglected fractures about joints. In fractures about the shoulder they are deficient abduction and rotation; in the hip, a diminished range of internal rotation, of abduction, and often of extension; in the elbow, fixation at an angle usually of about 130°; in the knee, genu valgum and sometimes flexion. The special deformities or disabilities peculiar to each injury should be studied, anticipated, and avoided.

In case some impairment of function should be feared we should know what particular movement and position of the joint it is most important to preserve, and we should direct the treatment accordingly. As an example I will take the case of a fractured scaphoid. This accident, as we know, occurs very much in the same way as a Colles's fracture. The neck of the scaphoid is usually fractured at its narrow part by a cross strain due to a fall on the hand, which is held more pronated than when a Colles's is produced. The diagnosis even in an early stage is not difficult. Added to the general signs of a sprained wrist there is marked tenderness to slight pressure in the anatomical snuff-box. If such a case is seen early and the wrist be hyper-extended, and be kept in that position for about 14 days, an excellent functional result may be assured. If, on the contrary, it be sent to a masseur with a bias towards strenuous passive movement, a thickened wrist with marked limitation in movement will probably ensue. To those of us who have seen old cases of fracture of the scaphoid the explanation is simple. The main disability consists in a loss of the power of extension. We therefore at once secure our right of way by hyper-extending and fixing the wrist in hyper-extension. The displacement usually occurs during some movement of the hand, and the vigorous masseur often produces displacement of the fragment and traumatic arthritis by exercising his art injudiciously. Again, in the old neglected case of fractured scaphoid or other carpal bone, where the patient appears with a stiff and somewhat flexed wrist, I often apply a club-foot wrench (plate) and fix the hand in hyper-extension. This restores to the patient his firm power of grip which we all lose when our wrist is flexed. I shall have a word or two to say later on the operative treatment of fracture of the scaphoid, but for the moment I am illustrating the value of obviating disability by the anticipation of subsequent events.

Again, as the result of long experience I have formed very definite opinions as to the relative value of passive and active movements, and as these are not quite in accord with prevailing views I will explain them later.

Finally, mere æsthetic considerations of appearance should always be subordinate to questions of restoration of function. In recognition of this principle I always endeavour to preserve a clear right of way free from obstruction by fragments of bone and callus, so that movements of the joint are not impeded, and furthermore to preserve the alignment of bones so that the lines of stress shall fall normally across the joint.

In teaching I constantly emphasise the important rôle of a correct alignment, particularly in the case of the lower limbs. At the ankle-joint it is essential to a good recovery. In fractures about the condyle of the femur it is almost of equal concern. Any deviation from correct alignment means alteration in structure in accordance with Wolff's law—an effort made by Nature to adapt the parts to the deviated lines of muscular stress or to the deviated lines of the force of gravity. These deviations may produce changes identical with those of traumatic osteo-arthritis. A faulty alignment, whether there be end-to-end apposition or not, means erroneous deflection of body weight, a cross straining of the fracture and a stretching of certain structures in the joints which lie above and below the fracture.

I shall scarcely refer to the question of splints. The splint is only a small practical detail compared with the method in which it is used. Inflexible fixation by wire or plate, fixation by splint and bandage, or no fixation, may each be simply good or bad. A surgeon may succeed or fail in any or all of the three methods according as he has or lacks the necessary knowledge and skill. If he has not a clear idea of the precise mechanical effect he wishes to obtain, neither splints, plates, nor massage will avail him.

UPPER EXTREMITIES.

Shoulder.—Coming to definite injuries, I will briefly allude to the so-called fracture of the anatomical neck of the humerus, which most often occurs in old people. It is not always a

genuine fracture through the anatomical neck, but includes both tuberosities in the upper fragment. It is very often impacted, and never requires more by way of treatment than is afforded by a sling and a modest axillary pad. Gentle rubbing may be continued from the time of the accident, but no passive movements should be permitted within less than from two to three weeks. At the end of six weeks the patient usually recovers with an excellent range of movement—a range which allows him to button the back of his collar and reach his brace from behind.

Fracture of the surgical neck requires more care. The head is usually rotated upwards and outwards by muscular action, and if there be much displacement a pull in the abducted direction will elicit crepitus. The ends should be manipulated under extension until a sufficient interlocking occurs so that the head responds to every movement at the elbow. When this is secure the elbow should be pushed towards the shoulder so as to compress the fractured ends, and the arm should be brought down to the side and there fixed for a few days by pad and bandage. At the end of a week it will be found that the spasm of the scapular muscles has passed off and treatment can be continued as in the higher fracture by pad, sling, and bandage.

One of the most common complications of fractures of the upper humerus is dislocation of the head. I have no less than 40 X ray photographs of this condition. I have had the opportunity of seeing the case immediately at the time of accident on several occasions, but more frequently I have not seen them till a later stage. Manipulation should be tried first while the structures are relaxed, and if this fail the arm should be extended perpendicularly while the surgeon manipulates the head. This manœuvre I have found the most successful, and X ray photographs exhibit very clearly the range of movement which followed a reduction by this method where I was assisted by my colleague, Mr. Newbolt. The patient was an old gentleman aged 74, a huge muscular man, and he now possesses an extremely useful shoulder. In a recent case failure to reduce by manipulation should be followed by open operation to replace loose ends. An excellent device to secure this object is that of McBurney, who introduces a hook through a drill hole in the lower end of the dislocated head, whereby, with but little handling of the parts, reduction is effected. The removal of the fragment is always indicated in old cases where nerve or artery is involved. I have been most interested to note the free range of movement which often follows these cases even when neglected. Good rotation inwards and fair abduction have been present in spite of the great deformity.

Elbow.—Fractures about the elbow-joint in children are the source of much trouble to the practitioner, and we have all seen cases of fractures through or above the condyles in which stiffness and limitation of movement have resulted in spite of the most assiduous passive movements begun early and continued late. Medical men have often consulted me with almost the identical story. They say: "For the first week I have treated this supracondylar fracture in exactly the position you advise; the movement seemed quite good and we have regularly applied passive movements once or twice every day and kept the arm at right angles. Instead of becoming more slack this stiff arm is the result." They are astonished when they hear that the stiffness is probably the direct result of passive movement, and that if the arm be slung up and left alone movement will return again. A patient some years ago brought her boy to me with a stiff elbow following a fracture of the epicondyle. Her story was that six weeks previously Dr. A had placed the child's arm in a sling and a week later went for his holiday. The child was then transferred to Dr. B, who immediately began a vigorous campaign of passive movement. Several times a day the arm was flexed, pronated, supinated, and extended, and the ever-growing stiffness was a further stimulus to action. When I saw the child he had a stiff, painful elbow, and the mother, full of indignation, threatened Dr. A with penalties. Dr. B, who was really the unintentional offender, received nothing but praise for his energetic care. I explained to her that both men had done their best and that a third stage of treatment was still needed. The arm was slung up at an acute angle for a fortnight and gradually dropped to a right angle, when active, not passive, movements were allowed, and in less than a month a very considerable range was obtained.

I will now for a moment explain my views as to the erroneous teaching in regard to passive movements. While nothing but good results from early and gentle massage in recent fractures, provided it be applied without moving the parts, great harm often results from combining passive movements with massage at a very early stage of treatment.

I will illustrate this by a case of supracondylar fracture. Such a case, treated either with an angular splint or in the straight position, very often results in limited movement confined in area from the right angle to midway to extension. This is due to faulty alignment, to the obstructive effect of excessive callus exudation in front of the elbow, or to a projection there of the upper fragment of the humerus. The object of the surgeon being to prevent this, he corrects the faulty alignment by acutely flexing the elbow and at the same time secures a right of way before he is opposed by callus exudation. To do this he supinates, then acutely flexes the elbow. For some days it is left in this position and then transferred to a sling, the wrist being kept immediately below the chin. At the end of a fortnight the wrist is dropped two or three inches and the patient is allowed to move the wrist from its resting place back to the chin. If this can be done it may be lowered still further a few days later; if, however, it has stiffened in its new position it requires again to be slung in the more acutely flexed position. At the end of three weeks passive movements may be begun. They should consist of only one movement in each direction (pronation, supination, flexion, and partial extension), and then the arm should be replaced in a sling. This passive movement should be slowly and gently done, the fracture being protected from strain by the surgeon's hand. During the whole of this period massage can be harmlessly and even beneficially practised. Early passive movement, such as is so generally practised, is positively harmful; it disturbs the uniting fragments of bone and leads to fresh plastic effusion, excess of callus, and increased formation of connective tissue about the joint, all of which are conducive to increased stiffness. The oft-repeated to-and-fro movements only do so much daily damage, and no time is given for recovery before a fresh injury is inflicted. I never move such an elbow until I am satisfied that the union is not likely to be disturbed. This is true of all joints. They should be put through each of their movements once and then left to recover from the damage. In one, two, or three days each movement is again repeated, but only once. Passive movements thus applied are comparatively painless and are not followed by rebellious reaction, which is always an indication for continued rest.

Since I have employed the acutely flexed position elbows have ceased to be troublesome. It is very rare to have anything but an excellent result. In the old-standing cases with disability which come to me even now the story usually relates to rectangular splints, pads, bandages, and early movement. The deformities—whether the result of supracondylar fractures, separation and rotation of condyle, or backward dislocation with fracture of the coronoid—are almost always the same. In supracondylar fracture the prominent lower end of the shaft, assisted by new bone, blocks the way to flexion. In separation of the condyle the same kind of obstruction occurs. Callus exudates, bony displacements, and organised effusions oppose flexion, whether the arms are treated by splints in the straight or in the rectangular position.

For over 20 years I have instructed my house surgeons in all cases of fracture and dislocation about the elbow (with the exception of fracture of the olecranon, always easily diagnosed) first to supinate and then acutely to flex the elbow and to fix it in this position. If this advice were generally followed disability would be a rare instead of, as it is, a frequent sequel.

An X-ray screen will demonstrate the effective reduction of the backward dislodgment of the lower fragment in supracondylar fracture. It has been suggested by certain writers who follow this method in separation of the condyles and supracondyloid fractures that the acutely flexed position is liable to produce a forward displacement of the epiphysis. Even if this be so, no harm can come of it, for callus exudation cannot prove obstructive beneath the triceps, and there will be no sharp prominence of the lower end of the shaft to limit flexion.

If the forearm be dislocated backwards we must extend

and supinate and acutely flex, for in this way only can we reduce the dislocation; and should we be unable to flex the arm we may rest assured by such failure that the displacement still remains. If the radius is dislocated forward and inward a similar routine is effective; the supination and extension will reduce the luxation, while acute flexion will maintain the parts in position. If the fracture be intercondyloid the position of acute flexion has this advantage—that it secures for the forearm at once a right of way before exudation of callus and displaced condyles can prove obstructive. It is true that in this particular injury some widening of the condyles is apt to occur when the arm is flexed. The parents should be warned of this, and a very effective way is to ask them which they prefer, an artistic-looking or a mobile elbow. This saves all future complication. Should the injury be separation of the internal epicondyle, there can be no better way to keep it from the common downward displacement than by acute flexion, which relaxes the muscles arising from it.

An interesting and common fracture is that of the head of the radius. It is usually vertical, and occurs within the orbicular ligament. Like all fractures of the upper part of the radius, there is muscular spasm on attempts at supination. There is usually no crepitus, but always distinct pain on direct pressure. In such a case, if supination is obstructed, immediate exsection of the fractured piece is the best treatment. The rough edges should be trimmed, and in order to lessen callus formation, the bare cancellous tissue should be well compressed by means of a smooth steel implement. If the fracture be below the orbicular ligament crepitus is usually obtained, and full supination is effectively secured by the close approximation of the forearm upon the arm.

Fracture of the olecranon I treat by maintaining the arm in the straight position, and, if the line of fracture is transverse and the fragments well apart, I fix the fragments with screw or wire. In oblique or stellate fracture I do not operate. In fractures below the olecranon in the upper ulnar third I have sometimes employed Lane's plates.

I have met with fracture of the coronoid (plate) on several occasions, although recent writers doubt its occurrence. Traumatic myositis ossificans followed this injury in one instance, and this ossific complication is much more frequent than reports would suggest. I have between 40 and 50 radiographs of the condition, and will show you a series of four skiagrams of the same case marking the progress of the disease from the beginning to the end. I have been unsuccessful in my attack upon this disease, as in several instances after operation fresh accumulations of bone have occurred.

Before leaving the subject of injuries to the elbow I would allude to the treatment of old cases of many weeks' or months' duration which come with deformity and disability. The gunstock deformity if extreme can be remedied by supracondylar osteotomy. As a rule, however, no disability accompanies this deformity and operation can only be justified on æsthetic grounds. A far more important class is that where flexion is blocked, and both in old condylar and supracondylar fractures and in old dislocations very useful joints can often be secured. The patient is placed under an anæsthetic and the arm is forcibly flexed until, in spite of all opposition, acute flexion is attained. Mr. H. O. Thomas 20 years ago suggested this in the case of old dislocations of the elbow. It is equally successful in fracture dislocations. By way of illustration we will take the case of a fracture dislocation of some months' standing. We find the elbow at an obtuse angle with about 20 degrees of movement. At anæsthetic is administered and the arm is slowly but forcibly flexed. If this can be done safely at one sitting all the better. Often, however, it is only possible to flex it about 20 or 30 degrees without risk of fracture. The arm is securely slung at the acutest obtainable angle, and in two or three days another effort is made. It is interesting to note that by that time one can quite easily flex it several more degrees. In the most obstinate cases it is not necessary to reduce in more than three stages. It is then slung up for a fortnight and gradually lowered, as I have explained before. In the most unlikely cases a good range of movement often results, and it is well worthy of trial before excision of the joint is decided upon.

Wrist.—I have no new light to throw upon the much-discussed Colles's fracture, and can only very confidently assert my belief in the efficacy of complete reduction. Often no serious effort is made to obliterate deformity, and in no region can one conceive of a greater necessity for it, for exuberant callus must terribly handicap the tendons, both dorsal and palmar.

The text-books still describe the hand-shaking method of reduction with extension, flexion, and ulnar flexion. This indirect method of applying corrective force through a chain of small bones will not appeal to any of us who are in the habit of using the tubercle of our own scaphoid as a fulcrum in forcible manipulations, such as osteoclasis and manual wrenchings. I reduce a Colles's fracture in the following manner. The surgeon with his left hand palm upwards grasps the patient's left arm, placing the tubercle of his own scaphoid against the projecting lower end of the upper fragment; he then places his right hand palm downwards with the tuberosity of the scaphoid on the upper edge of the lower fragment, when, by a forcible pressure, the fragments are powerfully replaced in position and crepitus is often felt. If the reduction be complete the patient can at once move his fingers with less difficulty than before. In old cases of many weeks' standing, when deformity, marked disability, and sometimes pain exists, I place a Thomas's wrench on the lower end of the radius and forcibly reduce the deformity, usually without difficulty. Daily massage, splints for 14 days, and passive movements later, of the kind already described, are the indications in these old neglected cases. In the recent case, early massage, fixation for three weeks, then passive movements, will always result in a mobile hand and wrist. I now experience no difficulties with my cases of Colles's fracture when I treat them in the first instance. The chief cause of stiffness of fingers and wrist is the unreduced backward displacement of the lower fragment, which impedes the action of the extensor tendons while the same displacement interferes with full supination.

I have already referred to fractures of the scaphoid. The method of reduction I adopt is to flex the wrist acutely and place firm pressure on the dorsal fragment, then completely hyper-extend the joint. If this effect cannot be attained, the prominent piece, or even the whole bone, should be excised. The excision is much more successful if performed immediately rather than later. In the old neglected case where the power of grasp is diminished because extension at the wrist is limited, the wrist should be fixed in hyper-extension, even, if necessary, by the aid of the wrench.

LOWER EXTREMITIES.

The hip.—I will only deal with two types of fracture connected with the hip, the one associated with the young and the other with the old. The adolescent fracture is much more common than is generally appreciated, and is productive of the deformity known as traumatic coxa vara. It consists of a partial or complete separation at the epiphysis of the head, a fracture through the neck, or a fracture involving both neck and epiphysis. I will describe for clinical purposes a typical case of separation or partial separation due to a comparatively slight strain. It is of all injuries to the hip the most often overlooked, even by extremely good surgeons; it is furthermore often a serious matter for both the patient and surgeon if an early diagnosis be not made. A boy of perhaps 12 or 14 while playing football attempts to turn suddenly and feels a sharp pain and a disability in his hip. He hobbles off the field and after resting a short time walks back to school and rests. The surgeon is sent for and makes his examination. He finds the movements fairly free in the direction of flexion and extension and adduction; the rotations are distinctly painful, and abduction beyond a short range is not tolerated. The measurements of the limb are normal. Ten days or a fortnight's enforced idleness and the little patient is back to the playground, when simple games are proceeded with. In days or weeks another strain occurs, and further disability, with symptoms no more diagnostic than before. Games are prohibited for the rest of the term, and one day something gives in the hip and he has to be helped to his bed. There may be now a half- or three-quarter inch of shortening, and on examination a separation of the epiphysis, partial or complete, will be found. The case I have given is one I am very familiar with, and it is generally diagnosed as a sprain or as a synovitis. The X ray

photograph shows the femoral head in position and the femoral neck travelling upwards.

In another type the injury is much more severe, the disability more pronounced and lasting, and we find we are dealing either with a fracture of the neck or with a complete separation of the head.

There is a third type which completes the clinical group. A youth slightly injures his hip and is incommoded, hardly disabled, for a day or two. As the weeks pass he complains of an increasing lameness and stiffness at the hip. His symptoms are very much those of a starting hip affection. There is limitation of movement in all directions, shortening of the limb, elevation of the trochanter above Nélaton's line. The X ray shows a coxa vara of the epiphyseal type. The slight injury has partly torn the periosteum and separated the epiphysis, and under the strain of body weight the characteristic deformity occurs. (*a*) From the clinical side I would suggest that a single strain or a succession of strains of the hip-joint in adolescents if followed by disability and pain on abduction denotes an epiphyseal separation. (*b*) If strain completely disables the patient and is accompanied by elevation of the trochanter a fracture of the neck is to be diagnosed. (*c*) If a slight injury is followed by a limp, rigidity, and shortening of the limb we are probably dealing with a coxa vara following a partial epiphyseal separation, but exhibiting signs of traumatic epiphysitis. We must remember that a neglected traumatic coxa vara results in a stiff, adducted, and slightly flexed hip.

The treatment should consist of immediate fixation with extension and extreme abduction. By this means the sliding head or fractured neck is placed in its proper relation with the shaft. Under an anæsthetic the pelvis is fixed while the limb is abducted, so that the upper border of the acetabulum acts as a fulcrum. The patient is then fixed in plaster or, as I prefer, in an abduction frame until consolidation has occurred—probably for about six weeks.

Lest we have to deal with a softened femoral neck a simple calliper splint should be worn for some time, so devised and fitted that no strain upon the yielding femur is allowed while the patient walks.

In fracture of the neck of the femur in the old, several problems confront us, more especially in regard to nursing and in regard to the dangers of pulmonary complications. I am convinced, however, that quite a large proportion of cases, under appropriate mechanical control, make excellent recoveries with but little shortening and comparatively negligible disability.

An interesting question arises in cases of impacted fracture of the neck. Owing to the fact that there may be no shortening, practitioners sometimes hesitate to diagnose a fracture. The presence of external rotation and tenderness about the neck of the femur is sufficient to my mind to determine a diagnosis.

Opinion varies as to the propriety of disimpacting the fracture in those cases. I make a practice of disimpacting in every case where there is any shortening or external rotation of the limb, leaving only those cases in which there is no rotation and little or no shortening. It must be remembered that a patient with an impacted fracture can often lift the limb from the bed, though with more or less pain, and sometimes a correct diagnosis is only arrived at when spontaneous disimpaction occurs two or three weeks after the injury and a consultation is called for It is necessary to emphasise this statement as most authors insist that in no case of fracture of the neck can the limb be lifted from the bed. Cotton, in the latest work published, states, "Uniformly there is inability to raise the leg from the bed," but in a footnote he adds, "I have seen one exception to this rule."

Provided a case is one suited for complete mechanical treatment—i.e., that there exists no condition which renders the recumbent position inadvisable—I endeavour to secure immobilisation and apposition. This can only be done by fixation of the limb in the position of adduction with fixed rather than elastic traction. With elastic traction such as the weight and pulley there must be a sliding of fragments one upon the other when the muscles relax in sleep and on awakening. Liston's long splint and perineal bandage was an attempt to keep the joint at rest. Extension by weight and pulley sought the same end. Fixation by plaster is an advance on either of these plans, but has obvious disadvantages. The splint we use in Liverpool is a modification of the double Thomas's frame, so devised that adduction can be maintained at any desired angle. By its use starting pains never occur, for the pelvis, lower extremity, and splint are all firmly fixed together, and movements of the patient do not alter the tension in relation to the fracture. The patient and the frame are lifted together without in any way disturbing the fracture, and both the frame and patient can be carried together without divorcing the one from the other. This rigidity at the seat of fracture favours repair with a minimum of friction, and thus frees the joint from embarrassing obstacles. In six weeks a Thomas's knee bed-splint is applied with extensions, and passive movement on the lines already indicated are adopted, safeguarded by the splint against a slipping upwards of the femur. A fortnight later and the patient walks in a calliper, so that walking is permitted with no weight-bearing strain on the fracture. During the whole of this time massage is assiduously practised.

In those cases where hypostatic congestion is threatened the patient is placed in a Thomas's knee splint with the limb adducted and she is allowed to be propped up if necessary even in the sitting position. In old cases of fracture with very limited movement and no signs of traumatic arthritis adhesions may be safely broken down under anæsthesia and mobility restored by massage. The greatest care should be exercised in the manipulations. By these methods patients are enabled to walk early without in any way interfering harmfully with the fractured neck.

Split fractures of the shaft of the femur involving the trochanter may need a couple of screws, but nailing the trochanter to the neck in fractures of the aged is undesirable, and many surgeons who have enthusiastically advocated this method are now abandoning it. Good adduction makes for correct alignment, and the trabeculæ of bone laid down in the callus as it becomes hard will follow the normal lines in response to the normal strains placed on the fracture.

The knee-joint.—I treat fractures of the lower end of the femur by means of traction in the line of the limb. This, in my opinion, is best secured by means of a Thomas's knee splint. The backward and downward rotation of the lower fragment due to contraction of the gastrocnemius is of slight importance compared with the effect of upward traction of the quadriceps and hamstrings. This is a doctrine I have taught for many years, and I am pleased to find my opinion confirmed by Cotton in his work just published. The overlapping which we often find depicted by the Roentgen screen is a sliding of the lower fragment in front of the upper fragment. This can always be rectified by powerful traction. From the classical description we would infer that the upper fragment invariably lies in front of the rotated lower fragment, but this is not true in every case. The use of a double inclined plane to neutralise the action of the gastrocnemius is based on a theory which is not found to be true in practice. Our procedure in femoral osteotomy is suggestive in this connexion. In the many thousands of these operations performed, how few surgeons have ever resorted to the double inclined plane? Energetic traction to overcome shortening is the secret of a successful result. The spasm of muscle in any part of the body is very transient and readily yields to pressure and extension. When functional disability results it is usually due to the interference with movements of the patella by the *forward* displacement of the upper fragment.

If there exists as a complication a condyloid separation the displacement may be manually rectified by extension aided by lateral pressure. I have never found it necessary to fix the fragments by nail or screw, although there can, of course, be no objection to this practice. A surgeon obviously must attain his best results by methods he trusts the most. Two conditions, however, are essential to success: (1) Freedom should be secured for movements of the knee; and (2) a correct alignment of hip, knee, and ankle.

Fracture of the internal tuberosity of the tibia is very apt to result in a genu valgum unless a perfect reduction is made. The sartorius, semitendinosus, gracilis, and the internal lateral ligament of the knee run across and support the fragment. If the knee be kept straight and these structures be kept tense they form a most excellent internal splint. The displacement is usually slightly backwards. I have treated a large number of these cases and the results are generally quite good, although sometimes there remains a weakness of the internal ligament. The fracture may be

caused by direct or indirect trauma—indeed, it is not unusual to meet with cases where the injury has occurred solely from lateral strain. If within the first few days one is unable to secure a level intra-articular fracture line, open replacement with nail fixation should be made. I have seen much disability in connexion with these fractures when they have been inefficiently treated.

I have had an exceptional experience in having seen three cases of long-standing fracture of the spine of the tibia, each accompanied by marked interference with function. In the one case, a man of about 40 years was thrown off a bicycle six months previously. He was laid up with severe effusion and was not able fully to extend his knee. When he consulted me, three months later, walking was difficult and recurring effusion took place, although attempts had been made under anæsthesia to straighten the limb by means of manipulation, splint, and bandage, but with no success. He remained unable to extend his knee by about 15°, and a X ray photograph showed a mass of bone in the centre of the joint. On opening the knee by the incision which I adopt for semilunars I came down upon the tibial spine, which was displaced backwards, carrying with it the anterior crucial ligament, but surrounded by a mass of fibrous tissue. I removed the bone, leaving enough adherent fibrous tissue to enable me to fix the anterior crucial. The result is a much stronger and more useful knee, which even yet cannot be fully extended. I cannot remember ever seeing a reference to this injury in literature. A similar case shows the fractured spine lying in front of the joint, preventing extension by purely mechanical means; full restoration of function followed its removal.

Avulsion of the tubercle of the tibia is by no means a rare accident, and I have found it most common between the ages of 12 and 16. It may occur, as in the case of the femoral head, by a single strain or by a series of strains, and it is very apt to be overlooked. The symptoms consist of pain on acute flexion and on pressure, but there is never a complete loss of voluntary extension. When we remember that the tubercle is sometimes part of the main epiphysis, from which a long protuberance descends, that sometimes there is a separate epiphysis and that only a part of the ligament is inserted into it, one can understand the rarity of a complete displacement. It is never necessary to pin this fracture, for in the recent case a pad and splint will completely rectify the trouble. Both in the recent and the older case, a hinge knee-cap limiting flexion is an admirable contrivance. Later the quadriceps must be vigorously massaged. In a few instances I have met with a good deal of thickening and tenderness following these injuries. They occur in those cases where no diagnosis has been made and where the joints have usually been subjected to movements and massage. A linear incision with a chisel into the tubercle in its longitudinal axis acts as a charm, and in a few weeks a disability of some years' standing may be rectified.

Ankle joint.—A volume could be written upon injuries about the ankle-joint, but time will only allow me to refer (and that briefly) to a few of the more interesting fractures that call for special care.

An injury which I have several times met with is a split fracture of the outer portion of the lower and anterior articular surface of the tibia. A triangular piece in juxtaposition to the fibula which may involve only the anterior and external surface of the bone is displaced slightly forwards. This fracture occurs as a separate entity, but is often found in conjunction with a Pott's fracture and sometimes in connexion with a fracture of the astragalus, and then this injury is associated with considerable violence. It is generally produced by a fall upon the foot, such as occurs in the act of jumping. Unless the foot is X rayed the injury is likely to be overlooked and the consequences are anything but pleasant. In the neglected case the patient is unable to flex his foot even to a right angle. He complains of constant pain over the flexure of the ankle, increased on pressure, and the foot has the appearance of being swollen above the instep. There is a pain which catches him across the front of the ankle in walking, just when he is about to change his weight on to the other foot; this is the main ground for complaint. There is a widening of the lower end of the tibia and a forward projection. Indeed, the deformity is suggestive of a displacement backwards of the foot, but a comparison of the heels will at once correct this mistake. The displacement of the fragment is always forwards. If the case be recent, sharp pain is experienced over the slightly prominent lower end of the tibia and the foot cannot be properly flexed. To reduce the fracture the foot should be fully extended, and while firm pressure is made upon the forward fragment the foot should be acutely flexed. If this position be maintained for a few days the deformity will not recur. If the foot cannot be acutely flexed the tendo Achillis should be divided, or if the case falls into sufficiently reliable hands a plate or screw may be applied. In old-standing cases removal of the obstructive bone is required. When operation is refused an addition should be made to the heel of the boot so that the prominent tibia is not subjected to pressure. Even experienced radiographers fail to recognise this condition in old cases, for all that is seen sometimes is a thickening and blurring from osteitis of the lower margin of the front of the tibia. I have described this interesting fracture at length for the benefit of those remote from X ray installations.

The same type of fall upon the foot produces a transverse fracture of the astragalus. The posterior half is displaced backwards and usually lies just in front of the Achilles tendon. The anterior portion may be displaced forwards, but more generally remains *in situ*. The surgeon may at once decide on the wisdom of immediate excision of the displaced half. If one portion of the astragalus remains in position it may be safely left there, and good movement with no shortening may be predicted. After a large experience of the horizontal fractures of the astragalus, both recent and remote, I am biased in favour of immediate removal of the bone. More especially is this the case where it is driven into the os calcis. I regard the mechanical treatment of fracture of the astragalus and os calcis in combination as very unsatisfactory.

I shall only say a few words about Pott's fracture. Although this injury has been a constant source of irritation to both surgeon and patient, I believe it to be very tractable to reasonable treatment. The material deformities in Pott's fractures are two—first, the well-known outward dislocation of the foot, which must be fully corrected; secondly, a less generally recognised slight backward displacement of the foot. Failure to correct this fully is the most frequent cause of the stiffness and limitation of flexion of the ankle which too often follow the injury. All a Pott's fracture requires is really complete reduction, and secondly protection from erroneous deflection of body weight when walking is begun. This concerns the practitioner who first sees the case rather than the consultant. The reduction should be immediate in spite of the swelling and general effusion. Delay adds seriously to the difficulties and prospects. Some surgeons are afraid to exercise enough force. To reduce this fracture I first of all increase the deformity to disentangle the ends, and with the foot somewhat flexed pull the heel forwards and push the tibia backwards until I feel that the dislocation of the astragalus is amended. I then direct all the force that is needed to slightly over-correct the valgus. Unless there is a split fracture of the posterior portion of the tibia there is but little tendency to subsequent displacement, and for three weeks this over-corrected position is maintained. During that period I shall have carefully examined the position of the foot every few days. At the end of three weeks passive movements will be performed in the manner I have already suggested, but no weight-bearing should be done earlier than the fifth week. If the patient, although the position of the foot is perfect, is now allowed to walk without protection he will return to the out-patient department with a valgoid deformity, and herein lies the application of the second principle to which I referred—namely, the correct deflection of body weight. For six weeks or less the patient wears a boot with the heel crooked so that the body weight is deflected from the inside to the outside of the tarsus. If these simple methods are applied Pott's fractures will not prove in the least difficult. Unsatisfactory results are chiefly due to inefficient reduction and indiscriminately applied plaster. If when the case is not seen for a day or two after the injury difficulty is experienced division of the tendo Achillis will materially help the reduction of the displaced astragalus. In lateral deviation of several weeks' standing I have reduced the lateral displacement with a foot wrench, and where that is not available by a simple device which I learnt from

H. O. Thomas. It consists in placing a towel round the patient's heel and the surgeon's shoulders, and another round the lower end of the tibia and the surgeon's foot. When the surgeon endeavours to straighten himself, his thigh muscles pull the patient's tibia down and his shoulders pull the ankle up. After reduction and fixation walking is aided by the foot being kept in inversion by an altered heel and outside iron.

In old malunited cases I operate. If the main deformity is eversion I remove a wedge from the tibia three-fourths through the bone. The fibula is subjected to open osteotomy. The wounds are closed and the stitches removed in a fortnight, when the limb is fractured for purposes of correct alignment. I find it advantageous in this and other fractures and deformities to operate in two stages, so that in my subsequent manipulation I have only a simple fracture to deal with. In old cases of bad eversion and unreduced displacement of the ankle I remove the astragalus and correct the lateral deviation by osteotomy and wedge.

CONCLUSION.

I have given a brief outline of the methods and principles of treatment I employ. They are the result of long practice in a manufacturing and mining district, where I have had exceptional opportunities of seeing a very large number of injuries both immediately after the accident and at a later stage.

Briefly, I pay more attention to function than to appearance, consider correct alignment of more importance than meticulous care in reposition of fragment, believe that pain is always an indication for physiological rest, and therefore deprecate early forced passive movements.

If I prefer methods of manipulation and fixation in some cases where others of my colleagues would prefer an open operation, it is perhaps because for many years an increasing proportion of my work has been the treatment of deformities and disabilities whether of traumatic origin or not, and I have thereby gained confidence in using powerful but carefully graduated force in cases where another would hesitate to do so.

My object has been not so much to discuss various methods of treatment as to expose my own for discussion, and hope that those who follow may do the same for our mutual profit.

Liverpool.

ON THE USE OF POTASSIUM BICHROMATE IN THE TREATMENT OF PHTHISIS.

BY JAMES B. TOMBLESON, B.A., M.B., B.CH. OXON.

I AM glad to report the following six cases of phthisis treated by the internal administration of potassium bichromate.

CASE 1.—The patient was a man, aged 30 years, who had phthisis of four years' duration and who was losing ground. On July 27th his condition was as follows. Weight 129 pounds. Some cough, especially at night, small amount of expectoration containing three tubercle bacilli to a field. Appetite fair. Sleep fair. Right lung: Difficult to say exactly how much disease as the pleura was affected and thickened all over so much that all sounds were very distant. Left lung: Active disease over whole of the upper, and upper part of the lower, lobe, with a cavity at apex. Under treatment improvement was steady until Oct. 30th, when his condition was as follows. Weight 140¼ pounds. No cough. No expectoration. Appetite good. Sleep good. Right lung: No difference. Left lung: Clear except a patch of the size of a half-crown over which a few small crepitations are to be heard. Says he feels quite well, while his wife says that he *is* quite well.

CASE 2.—A woman, aged 27 years. Phthisis of seven years' duration. Had been in many sanatoriums and under all sorts of treatment with little and only transitory benefit, of late getting much worse, till on July 25th she was practically bedridden with condition as follows. Weight 100 pounds. Cough very bad. Much expectoration. Appetite very bad. Sleep poor. Cheeks fallen in. Right lung: Upper and middle lobes, resonance and air-entry much impaired, many moist sounds over whole extent. Left lung: Upper lobe in a similar condition. Under treatment there was steady improvement till on Oct. 30th the condition was as follows: Weight 123 pounds. Cough practically disappeared. Eats and sleeps well. Expectoration down to a third or less. Walks half a mile or more without fatigue. Lungs: A few small crepitations are still to be heard here and there over the front on both sides, nothing at all compared to what existed three months ago.

CASE 3.—A woman, aged 29 years. Phthisis of one year's duration. Condition on Sept. 3rd: Deep-seated disease in both lungs, with varying amount of physical signs. Frequent hæmoptysis, sometimes very severe. Much wasted and weak. Very short of breath, on the point of taking to bed. Under treatment, improvement was slow at first, possibly because she was a nervous woman and suffered a shock from the sudden death of a favourite dog; but it was more rapid afterwards, till on Oct. 30th she was much stronger, walking a fair distance easily; breath much better, hardly any cough, and no hæmoptysis for nearly three weeks.

CASE 4.—A woman, aged 65 years. Had phthisis as a girl, but recovered. Lets lodgings, and towards the end of a heavy season this summer was much run down and gradually became really ill with a bad cough and pronounced wasting. On Sept. 22nd I found her in bed quite convinced that she would never get up again. She was wasted and had a bad cough. She had a patch of dulness with impaired air-entry and many small crepitations on the left side extending from the apex to the third interspace. She was placed under the treatment to be described below. On Oct. 29th she walked up to the surgery to see me, and expressed herself as being much better; her cough was practically gone, her appetite and sleep were normal; she was much stronger, and she had put on a good deal of flesh. On examination her lungs showed no signs of disease, except that the resonance was very slightly impaired in the situation of the old trouble.

CASE 5.—A woman, aged 37 years. Old asthmatic with history of old phthisis, lately getting slowly worse, till she could not get about at all. Her condition on Oct. 1st was as follows. Very weak; could only sit up with difficulty for half an hour; no appetite and little sleep. Cough very bad, with much expectoration. (I did not examine for tubercle bacilli.) On examination I found both apices diseased, such disease extending over the front of both upper lobes. Under treatment her improvement was steady, till on Nov. 2nd I found her in a much improved condition, eating and sleeping better, feeling stronger, with the signs of disease in the lungs decidedly less.

CASE 6.—A woman, aged 23 years, had phthisis nine months and had only recently left a sanatorium; disease apparently progressing steadily. On Oct. 6th I examined her and found both upper lobes diseased, with early signs in the apices of the right middle and left lower lobe. She had a lot of expectoration, occasionally blood-stained, and the nurse in whose charge I found her said that she had as many as seven tubercle bacilli in a field. She had a poor appetite and was weak and listless. Placed under treatment, up to Nov. 1st, when I last saw her, she had rapidly improved both in the condition of her lungs and in general condition.

Of these six patients the last four do not know that they are under any special treatment; and no other medicine than the mixtures mentioned later have been used at any time during the treatment in any of the cases. Improvement has been noticeable after the expiration of the first fortnight of treatment. I am quite aware of the fact that the evidence given above is incomplete, but I hope that it will be sufficient to induce some to try it for themselves.

Now as to the treatment. I give the potassium bichromate in doses of ¼ gr. (2½ minims of a 10 per cent. solution in water) either alone or in a tonic mixture (phosphate, hypophosphite, or simple iron), such dose to be taken in a wineglass of water after food, at first twice and later three times a day. The first dose and possibly the second may cause vomiting, but this does not matter, as, in my experience, toleration is easily established without missing a dose. The colour of some of the mixtures changes from yellow to green, but this seems in no way to impair the efficacy of the mixture.

Westcliff-on-Sea.

TWO CASES OF COMPOUND FRACTURE, WITH TETANIC SYMPTOMS;

RECOVERY AFTER INJECTION OF ANTI-TETANIC SERUM.

BY E. K. WILLIAMS, B.A. CAMB., M.R.C.S. ENG., L.R.C.P. LOND.

I THINK that the interest of these cases is such that they are worth recording.

CASE 1.—The patient, a labourer, aged 53 years, and not a temperate subject, was supposed to have been knocked down or run over by a vehicle in the evening of Dec. 17th, 1909. The patient had no recollection of what happened between 5 P.M.—when he remembered being on the high road—and about 2 A.M. on the following morning. His description of what took place is as follows: "I woke up feeling very cold and stiff with a pain in my right leg; I knew where I was by the side of the road. I got up and felt that my right foot was hurt. However, I was able to walk to a cottage, some quarter of a mile away, where I roused up a man and asked him to allow me to stay in his stable. I opened the door and walked in and lay down on some straw and went to sleep. I was awakened by a man bringing me a cup of tea. I told him that I had hurt my leg and asked him to call my son, who was living in a neighbouring village, that he might bring a cart to take me home." It was not until the patient was being helped into the cart that the injury to the leg was recognised. He was brought to my surgery at 9.30 A.M.

Upon examination I found that the right foot was almost severed from the leg. The lower end of the tibia was shattered, and all that could be made out was a débris of blood, flesh, manure, and road dirt. Although the man was much collapsed immediate amputation was decided upon. He was given 8 ounces of brandy, which improved his condition, and in half an hour he was anæsthetised and I removed the leg 6 inches below the knee. Symptoms of collapse recurring some six hours after the operation another 8 ounces of brandy were given. The patient's condition until Jan. 5th, 1910, was as satisfactory as could be expected, although there was some sloughing of one of the flaps. On Jan. 6th the patient showed symptoms of delirium tremens, and at the same time he complained of stiffness of the jaw and side of the neck. He was unable to rest and took nourishment with difficulty; his pulse was 140 per minute, and the temperature was 102° F., his condition being altogether very critical. Remembering the advice given by Sir Edgecombe Venning in the course of a consultation on a previous occasion regarding the administration of large doses of alcohol in delirium tremens, a considerable dose of neat brandy was administered, with the result that the patient became quiet and was able to get some sleep. Anti-tetanic serum (40 c.c.) was injected into the right flank in the morning of Jan. 7th and 12 hours afterwards another 20 c.c. into the left flank. The muscular spasm, which had now set in, became more frequent and swallowing was difficult, the spasms being more marked in the muscles of the abdomen and the remaining leg. The patient, again showing signs of collapse, was given an ounce of brandy every four hours. On the following day another 40 c.c. of the anti-tetanic serum were injected (20 c.c. in the morning and the same quantity in the evening), with the result that the spasms became less easily excited, but the patient was so collapsed that four ounces of brandy were given and were repeated in two hours' time, and again he was able to get short intervals of sleep. After this no more serum was given. The spasms became gradually less intense and the patient obtained longer intervals of sleep. Liquid food, however, could only be taken three or four times a day, as the attempt to swallow was usually the signal for the "setting" of the muscles of the neck, and it was not until three weeks after the onset of the symptoms that the patient was able to swallow his first piece of solid food. Apart from the fact that there was some slight necrosis of the lower end of the tibia, which necessitated the removal at a later date of a small sequestrum, the patient made a good recovery.

CASE 2.—The patient, a farmer, aged 69 years, fell out of his cart in June last, and was hung up by one leg to some wire-work attached to the body of the cart. The horse took fright, and the patient was dragged about 90 to 100 yards. When I saw him the forearm was nothing but a shapeless mass of manure, road dirt, fleshy pulp, and tiny spiculæ of bone. Immediate amputation being necessary, I removed the forearm just below the elbow-joint, and at the same time injected 20 cubic centimetres of anti-tetanic serum. All went well until the end of the second week, when the patient complained of a sense of stiffness about the neck and jaw. A second injection was then made of anti-tetanic serum, and in three or four days the tetanic symptoms ceased and the patient made a good recovery. I feel sure that the early injection of the serum had a prophylactic action.

Billesdon, Leicester.

OSTEOMYELITIS OF THE LEFT CLAVICLE.

BY ANGUS MACDONALD, M.B., C.M. EDIN., D.P.H. VICT.
HOUSE SURGEON, MACCLESFIELD GENERAL INFIRMARY.

THE literature on this subject is scant and unsatisfactory, and as I have been able to watch a case in all its clinical aspects, perhaps the following facts may be of interest.

A boy, aged 5 years, was admitted to the Macclesfield General Infirmary at 3 P.M. on Friday, April 29th, 1910, manifestly ill. His respirations were 48, his temperature 103·6° F., and his pulse 160. His face was markedly cyanosed, and resembled that of a pneumonic. The history was indefinite. The boy's mother informed me that her son had swallowed a marble. She could not say for certain when this happened, for she had only learnt the fact from the boy on the previous Wednesday when he was first taken ill; but from what he had told her she was of the opinion that it was on the Tuesday that it must have occurred. No other facts could be ascertained.

On admission, a swelling was noticed on the left side of the patient's neck involving the left supra-clavicular, clavicular, and infra-clavicular regions, and the boy kept his head turned rather towards his right side. The swelling was moderate in amount, and the area was slightly hyperæmic as though a poultice had been applied for a short time thereto. It was very tender to the touch, and gave to the fingers a slightly boggy feeling, suggestive of exudation. The percussion note yielded over the said area was dull; auscultation, however, did not reveal any pathological signs. The lungs were next examined, but nothing of clinical importance could be detected. In view of the history of the case an X-ray examination was conducted, but gave no information. I should also add that the blood did not show a leucocytosis, nor did it give the glycogenic reaction. Exploratory needles were inserted over the area of the swelling but were of no avail. The case was discussed, but owing to the conflicting nature of the signs it was recommended to "wait and see," no diagnosis being definitely arrived at. During the same evening the patient's cyanosis increased, his respirations going up to 55. On the next morning (April 30th) the boy developed diarrhœa. His temperature dropped from 103° to 101° and at noon to 99°, his pulse becoming wretched and his face livid and pinched. His respirations went up to 60 in number. Stimulants, including oxygen, were administered, and he revived for two hours; at 3 P.M. he again collapsed, and death took place about 5 o'clock.

A post-mortem examination was made the same evening and the following is a summary of what was found. The child was well developed and well nourished. On incising over the left clavicle the same was found to be stripped of its periosteum, so much so that a single incision on its superior surface allowed the margins of the wound to sag and displayed the shaft. No pus was present, but the bone and its periosteum were separated by a layer of serum about 3 millimetres in diameter. It is interesting to note that the two extremities and joint cavities were unimpaired, the condition stopping short at the capsular ligaments. The bone was of a dirty slaty-blue colour and perfectly smooth. The pleuræ of both lungs were covered by a layer of fibrin 2 millimetres thick. The pleural cavities contained no free fluid, but the membranes were slightly vascularised here and there. On section both lungs showed patchy lobular consolidation. The left apex showed uniform consolidation, this condition having spread directly from the left clavicle. The heart on its pericardial aspect showed typical plastic

pericarditis, with the bread-and-butter appearance. The mitral valves had small vegetations on their surfaces, and showed slight vascularisation at the bases of their cusps. The aortic valves were seemingly unimpaired. Aspiration of bloody serum from the right ventricle yielded a culture of staphylococcus aureus in purity in 18 hours. On a smear on slope agar 4 centimetres long there were 11 colonies.

Of interest in this case are the following points: 1. The misleading history. The fact that the mischief was left-sided suggested to one of the surgeons who saw the case that it might be a mediastinitis consequent to injury to the œsophagus. 2. The absence of any reaction by the hæmic system to combat the situation, inasmuch as the infection was widely disseminated, and there was no leucocytosis or glycogenic reaction, and (post mortem) there was no pus formation. 3. The fulminating character and, above all, the rarity of the lesion.

I must record my gratitude to Mr. J. H. Marsh, honorary surgeon to the infirmary, for permission to publish this interesting case.

Macclesfield.

A CASE OF UTERUS BICORNIS UNICOLLIS.

BY JAMES L. MASTERMAN-WOOD, M.B. EDIN.

THE patient was aged 35 years, married, and has had one child, born in February, 1909. Labour was artificially produced at the seventh month because of the exsanguined condition of the patient owing to repeated severe hæmorrhages which occurred during the fifth, sixth, and seventh months of pregnancy. She suffered regular but slight loss during the first four months of pregnancy. Presentation was normal. At the confinement the patient had a profuse post-partum hæmorrhage to which she nearly succumbed. Eventually she recovered completely, and again became pregnant in November, 1909.

Early in January, 1910, she commenced to bleed rather heavily per vaginam whilst walking, and was immediately ordered to bed. On vaginal examination a complete ovum was found lying in the vagina. It was approximately a six weeks ovum. The cervix was patulous, and bulging through the internal os could be felt a soft elastic mass which was considered to be a second ovum. Under suitable treatment the cervix contracted and the bleeding ceased without the passage of the suspected second ovum.

Early in February she had what she considered was like a rather profuse menstrual period, which necessitated rest in bed for two days. The patient being very anxious to have a second child, and her medical attendant hoping that the second ovum might continue to live, kept her strictly at rest for a considerable time. However, on March 4th she suffered a severe loss again, and I was on the 8th called into consultation over the case. (At this time, it will be noted that, had the pregnancy proceeded, she would have been in the fourth month.) There were no secondary signs of pregnancy. On bimanual examination two tumours, separated by a distinct sulcus but not moving independently of one another, could be felt occupying the position of the uterus. The right tumour seemed to the examining fingers to be a little larger than an ordinary unimpregnated uterus, whilst the left tumour was decidedly smaller. A diagnosis was made of a bicornuate uterus in both horns of which pregnancy had occurred; the left smaller horn had aborted, whilst the right horn retained a missed abortion.

On March 12th I operated. After preliminary dilatation with Hegar's dilators I found, on introduction of the finger through the cervix, two cavities separated by a distinct ridge. The left was very small, but admitted the sound for 1¾ inches. The right cavity was considerably larger and measured 3½ inches. Both cavities were well curetted. The right one contained decidual tissue. The patient made an uneventful recovery, and, except for one rather profuse menstrual period in April, she has menstruated regularly and normally since, and declares that she has never been in better health.

It is with the kind permission of Dr. G. S. Ware that I send these brief notes.

Barnstaple.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION.

Fractures in the Neighbourhood of Joints.

A MEETING of this section was held on Nov. 8th, Mr. J. WARRINGTON HAWARD being in the chair.

Mr. ROBERT JONES (Liverpool) read a paper on the Treatment of Fractures in the Neighbourhood of Joints, which is printed in full on p. 1479 of this issue of THE LANCET.

Mr. RUSHTON PARKER said that the points to which he desired to draw attention in the manner of dealing with the fractured humerus were the slinging of the arm to the neck and the flexion of the elbow to a more or less acute angle. The adoption of that attitude in any injury between the clavicle and elbow, both inclusive, was of the greatest service in examination and diagnosis as well as in treatment. By that manœuvre the upper limb was bent into two portions, one of which, containing the hand and forearm, was suspended from the neck; the other portion alone was suspended from the shoulder. In fractures of the humerus the injured upper arm was thus at once relieved of the weight and disturbing inconvenience of the forearm, which, when left hanging loose or not specially provided for, caused pain and deformity to the patient and ineffectual devices on the part of the surgeon. In fracture of the lower fourth of the humerus, on account of the invariable tendency to adduction of the condyles under the weight of the elbow, a twist imparted to one of the splints effectually maintained the lower smaller fragment in line with the upper while controlling both. It was needless to add that that manœuvre was only applicable to a splint of sheet metal. In cases of simple fracture it was not difficult, when once the wrist was slung and the elbow bent, and the weight of the forearm removed from the arm, so to apply the splints at the commencement of treatment or by later readjustment as to secure a painless and correct position without hampering the patient's freedom in other respects.

Mr. R. WARREN said that treatment in the neighbourhood of joints might be conveniently divided into (*a*) those which actually involved the cartilage-covered bearing surface of the joint, and (*b*) those which were merely in its vicinity but which might be outside the capsule. A much greater degree of accuracy in replacing the fragments was necessary in group (*a*) than in group (*b*), since open operation would be more often required in the former than in the latter group. Stress was to be laid on the importance of other component parts of the limb beside the base of joints, ligaments, nerves, muscles, &c. Early movement was important in fractures of some joints and was in part an indication for open operation, but only when movement of the joint caused displacement of the fragments. Fractures involving joint surfaces would in adults frequently, in children less often, require open operation even when displacement was small. Attention was directed to the feasibility of moving the shoulder-joint after fracture in 2 to 14 days and massaging from the first. In fractures of the olecranon appreciable separation was frequently absent; a good rule would be to wire or screw those which could not be slung at a right angle without separation occurring. The value of acute flexion in fractures about the elbow was touched on.

Mr. R. H. A. WHITELOCKE said that in all cases of fracture of the patella in which there was much separation the open method of treatment was the only satisfactory one. In consequence of the Workmen's Compensation Act and the Employers' Liability Act the public were no longer satisfied with merely good functional results in the treatment of fractures, and that fact must be accepted in the treatment of fractures in which good anatomical as well as functional results were to be attained in spite of the teaching in some of the text-books. He (Mr. Whitelocke) thought that Mr. Jones had struck the right note when he emphasised the important rôle of a correct alignment, particularly in the case of the lower limbs. He was pleased to hear that

Mr. Jones admitted that there were certain fractures in which open operation was permissible.

The adjourned debate on this subject will be held by the Surgical Section of the Royal Society of Medicine at 15, Cavendish-square, on Tuesday, Nov. 29th, at 5 P.M. Speakers will be limited to ten minutes, and intending speakers are requested to send their names to Mr. Jonathan Hutchinson, 1, Park-crescent, W.

CLINICAL SECTION.

Exhibition of Cases.

A MEETING of this section was held on Nov. 11th, Sir A. PEARCE GOULD being in the chair.

Dr. H. BATTY SHAW showed two cases of the Symptomatic Infantilism described by Mr. Hastings Gilford. The first case was that of a female, aged 18 years, height 4 feet 4½ inches (average, 5 feet 1·95 inches), weight 4 stones 1½ pounds (average, 8·2 stones), belonging to a family of normal height and weight. Skiagrams showed that the bony union of the pubis and ischium with the ilium, like a normal individual's, was not complete, but that the union of the great trochanter with the femur, unlike a normal person's at this age, was also incomplete. The patient was clever at needlework, which she carried out at home, earning 4*s.* weekly. She refused "to go to business" with her sisters, preferring to work at home. The delay of growth was first noticed at the third year of life. The expression of the face and the manner of the patient were those of her years but not of her stature. She had never menstruated, and there was no trace of sexual development such as occurs at puberty. The mother had one miscarriage after the birth of this child. From the age of three years the patient suffered for some years with a swollen abdomen and very offensive motions. Dr. Shaw considered that the case was one of intestinal symptomatic infantilism. The second was that of a female, aged 27 years, height 4 feet 6 inches (average 5 feet 2 inches), also belonging to a family the members of which were of normal height and weight. Skiagrams showed that union of the epiphyses of the femur and tibia was not yet complete; at her age they should be. She helped at home, but could not do needlework. She made no progress at school, but had, since her school years, taught herself to read and write at home; she was unable to do responsible work and had a bad memory for recent events. The teeth were defective and the palate was arched. She was a six months child, and at the age of one year was smaller than her newly-born sister. The mother had had no miscarriages. As in the last case, her facial expression and manner generally were more those of a normal individual of her age than of a child of her height. She was not without a fair amount of intelligence, and entered freely into any discussion at home. She had always been very constipated, and up to ten years of age slept 18 hours out of the 24 daily; even now she slept in the daytime a good deal. She began to menstruate at the age of 18, but was not very regular. Though the breasts were not much developed there was the usual development of hair met with at puberty. Dr. Shaw thought that the case was a doubtful one of intestinal symptomatic infantilism. He also showed a case of Asexual Ateleiosis (sub-group of essential or cryptogenetic infantilism of Hastings Gilford). The patient was a male, aged 36 years, height 3 feet 8¾ inches, weight 4 stones 11 pounds 1 ounce, belonging to a family of normal height and weight. Skiagrams showed want of union between the epiphyses and diaphyses of the bones of the hand and forearm. The patient was of good intelligence after a simple childish fashion, such as might be expected of a child with many years of experience. He had worked for the last five and a half years as a compositor, and earned 9*s.* weekly. The delay of growth was first noticed between one and two years of age. In contradistinction to the above two cases the delay of growth and development was much more marked. The external organs of generation were in size and appearance like those of a young child; the testicles were undescended. There was no development of hair upon the face, but the latter showed wrinkling as of age; his manner suggested age, as it was assured, and even a little patronising, to normal adults who had not reached his years. (For full particulars of his condition see Transactions of the Royal Medical and Chirurgical Society, 1902, Vol. LXXV., p. 316, article on Ateleiosis by Mr. Hastings Gilford, to whose courtesy Dr. Batty Shaw is indebted for the use of the case for demonstration.) Dr. Batty Shaw said that, thanks to Mr. Hastings Gilford, something like order had been produced out of the confusion of ideas connected with so-called dwarfs. By dwarfism was meant a condition in which there was defective growth. Development, however, was perfect, and such subjects were simply examples of small men and women; examples might be sporadic or whole races like the various pigmy tribes of the world might occur. Infantilism, however, was quite a different condition: not only was there delay in growth but in development as well, with the result that with diminished stature there existed the defective physical characters or defective mental characters or sexual imperfections. Infantilism might be primary or secondary—i.e., it might be apparently independent of any known cause. The primary cases included cases of ateleiosis (literally "not arriving at perfection") and progeria, two types of infantilism the sharp differentiation of which was entirely due to the efforts of Mr. Hastings Gilford. The cases of ateleiosis showed a curious combination of the features of infancy or childhood with those of more advanced years, whereas cases of progeria showed a mixture of the features of infantilism and senilism. Ateleiosis might be subdivided into two extreme groups; in the one there was full sexual development, though it might have been delayed in appearing; in the other the sexual development was very imperfect, and between these two groups there were others of varying and intermediate stages of development. Dr. Batty Shaw's two cases represented examples of secondary infantilism. The importance and ease of distinguishing between the two types were shown in the following way. Cases of secondary infantilism were dependent upon causes or associated with conditions with which they were all familiar: rickets, syphilis, congenital morbus cordis, micromelia or achondroplasia dystrophia, microcephaly, kyphosis, cretinism, mongolism, intestinal disorders, and even disorders of the pancreas, scarlet fever, typhoid fever, and rheumatic fever. The features of the infantilism in such cases were much less marked than in the primary group, and, moreover, they were not transmissible to succeeding generations. On the other hand, the cases of primary infantilism were dependent upon no known cause, they were very much more marked cases of infantilism, and, as Mr. Hastings Gilford's researches showed, a sexual ateleiotic might beget an asexual ateleiotic child. The contrast between these two groups of infantilism was well shown by the case kindly sent by Mr. Hastings Gilford when compared with his own cases of symptomatic infantilism.

Cases were also exhibited by the following:—Dr. E. FARQUHAR BUZZARD, Dr. ARTHUR LATHAM, Mr. E. L. HUNT, Dr. HERBERT S. FRENCH, Mr. ARTHUR H. EVANS, Dr. JAMES GALLOWAY, Dr. A. E. GARROD, and Dr. A. MANUEL.

SECTION OF ANÆSTHETICS.

Prolonged Anæsthesia maintained by Ether and Gas alternately.

A MEETING of this section was held on Nov. 4th, Mr. RICHARD GILL, Vice-President, being in the chair.

Mr. A. L. FLEMMING communicated a paper on Prolonged Anæsthesia maintained by Ether and Gas alternately. The suggestion that the methods now ordinarily in vogue left room for improvement was based upon the supposition that over-stimulation with ether might contribute largely to some of the post-operative shock occasionally following on certain prolonged and grave operations, especially such as involved the removal of large masses of tissue, as, for example, amputation of limbs, amputation of carcinomatous breasts, and excision of the rectum. Crile and others having noticed that this collapse was less in evidence after nitrous oxide and oxygen than after other anæsthetics, the author of the paper had endeavoured, in a series of 86 more or less grave cases, to diminish the amount of ether used by alternating its exhibition with that of nitrous oxide and oxygen. Although vomiting and nausea were not absent, still they were on the whole less frequent even than after ether, or ether and chloroform; and the general condition, as far as the patient's feelings were concerned, was satisfactory, and in many cases there was no resulting nausea or misery. So far as could be judged from the 86 cases there seemed to be complete absence of any post-operative collapse, but the numbers were

too few to exclude the possibility of coincidence in this respect. Mr. Flemming's object in putting his experience in this method thus early before the section was to suggest that herein possibly lay a means of limiting the extent of ether saturation where it might be considered advisable to do so. For experimental evidence as to the possible evil effects of ether anæsthesia reference was made to Dr. W. D. Halliburton's Croonian lectures of 1901, entitled "The Chemical Side of Nervous Activity"; and to Dr. George Crile's neurocytological studies of the brains of animals under nitrous oxide and oxygen and ether respectively; also to Graham's immunity experiments. As regards technique, the method required a minute attention and concentration, the difficulty being to know exactly when to change from ether to gas, and *vice versâ*. The routine employed in most of the cases here reported was as follows. After inducing by ethyl chloride and ether, anæsthesia was maintained by ether, open or closed, for the first 15 or 20 minutes, until, in fact, the operation was well under way. At this point nitrous oxide and oxygen, with frequent breaths of fresh air, was substituted and continued for a short interval varying in length from three to five minutes, and a change to ether then made, and so on throughout, nitrous oxide anæsthesia being, as is were, superimposed upon ether intoxication; it was generally found that as the operation progressed it became possible to shorten the ether sessions, and to prolong those of nitrous oxide and oxygen. From his experience in these 86 cases the author had come to the conclusion that it was sometimes to the patient's advantage that nitrous oxide had been thus employed so as to lessen the amount of ether toxæmia, and he was satisfied that a perfectly smooth anæsthesia could be maintained by the alternating system, although he felt that with improved apparatus it should be possible to obtain the same result with less changing and chopping. Among the patients who had proved favourable subjects were many for whom nitrous oxide and oxygen alone would not have been suitable, such as alcoholic men, very stout patients, bronchitics, and senile subjects.

Mr. GILL said he had given ether alternately with gas and oxygen for short operations. He was glad to hear that Mr. Flemming laid stress on the limitation of the dose, and also on maintaining the degree of anæsthesia as light as possible.

Dr. J. BLUMFELD had also used these anæsthetics for short operations. He asked whether Mr. Flemming regarded his cases as nitrous oxide or ether anæsthesia? How did he manage to avoid reflex phenomena; if these occurred, did he consider them an indication for ether?

Dr. J. F. W. SILK considered that a very rapid recovery from anæsthesia, as in the case of gas and oxygen, was not wholly an advantage, as the period of analgesia that accompanied recovery from an anæsthetic masked post-operative pain. He thought that severe after-effects usually depended on a uniform level of anæsthesia not having been maintained, and the method advocated by Mr. Flemming would require great skill, and also the use of a very large quantity of nitrous oxide.

Mr. H. E. G. BOYLE inquired why Mr. Flemming induced with ether instead of gas and ether? He considered that a level anæsthesia would be very difficult to maintain with the alternation of the anæsthetics, and that after-sickness would probably be frequent.

Mr. R. W. COLLUM had occasionally used ethyl chloride to deepen ether anæsthesia, as when, for instance, a student allowed a patient to come partially round; these cases had a good deal of after-sickness. He did not see the advantage of alternating the anæsthetics.

Mr. HARVEY HILLIARD had kept records of after-sickness and found it was less frequent when a regulating inhaler was used.

Mrs. DICKINSON BERRY considered that light anæsthesia rather than a necessarily level anæsthesia was one secret of absence of after-effects. She found goitre cases were scarcely ever sick, whether they had chloroform or ether. In these cases a very light anæsthesia was maintained, but it was not level throughout, as at a certain stage they were always allowed to come partially round and strain in order to make sure that the vessels were satisfactorily secured.

Mr FLEMMING, in reply, said that he was surprised himself when he tried the method advocated both by the ease with which a level anæsthesia was maintained and at the satisfactory after-results.

Mr J. F. TREWBY showed a new Inhaler for administering nitrous-oxide gas by the nasal method.

LARYNGOLOGICAL SECTION.

Exhibition of Cases and Specimens.

A MEETING of this section was held on Nov. 4th. The new President, Dr. WATSON WILLIAMS, was in the chair, and delivered an opening address, after which

Dr. DAN MCKENZIE exhibited specimens of a Nasal Septum showing Windows. One of the specimens was removed by Dr. Cyril Horsford, the other by Dr. McKenzie. They were interesting for two reasons: first, because the presence of a window in the septal cartilage, with intact mucous membrane, rendered the operation of submucous resection more difficult, unless the possibility of this condition were remembered; secondly, because the spontaneous production of septal perforation from ulceration was favoured by the presence of such windows. In Dr. McKenzie's experience, acute perforating ulcer of the nasal septum penetrating not only mucous membrane but also cartilage was extremely rare. As to the cause of these windows the opinions generally seemed to be that they were sometimes developmental and at other times were induced by the long-continued bilateral pressure upon the cartilage of mucous scales or crusts.

Mr. HAROLD BARWELL showed a case of Subglottic Stenosis after Tracheotomy.

Dr. STCLAIR THOMSON showed a case of Scleroma of the Naso-pharynx in a Polish woman.

Dr. G. WILLIAM HILL exhibited a case of Carcinoma of the Œsophagus in which the dysphagia was treated by a new form of intubation apparatus. The patient was a man aged 49 years, with a history of five months' dysphagia. Much frothy mucus was expectorated, and there were present cough and abductor paralysis. Œsophagoscopy showed fungating growths on the anterior and posterior wall. There was a tight stricture 28 centimetres from the teeth; a portion was removed for microscopy (epithelioma). After great difficulty and delay the stricture was threaded and dilated up by graduated bougieing, and Dr. Hill's styletted modification of Symonds's long rubber intubation apparatus was inserted. The patient was at first fed entirely through the tube, but could now swallow soft food beside it; the mucorrhœa also was much less and the patient was not so asthenic. The disease was considered too advanced and the actual strictured area too long for radium treatment, but the method of permanent intubation employed did away with the necessity of resorting to gastrostomy. The apparatus, with its dental attachment, was also exhibited.

Dr. W. JOBSON HORNE showed a case of "Dents de Scie" of the Vocal Cords.

Dr. H. W. FITZGERALD POWELL and Dr. G. W. BADGEROW showed a case of Tumour of the Post-nasal Space which had been exhibited at the previous meeting. The patient was a man aged 27 years. A tumour of the post-nasal space was pushing the soft palate forward and involving the palate; it was growing from the lateral walls of the naso-pharynx and infiltrating the lining of the same, and it extended down to the tonsil, which it involved. It was removed by operation, along with the portion of palate involved and the tonsil. Good recovery followed. An obturator closing the opening (fitted by Dr. J. W. Pare) was employed, and there was no recurrence.

Mr. C. A. PARKER exhibited a Tonsillolith in the left supra-tonsillar fossa.

Dr. BADGEROW showed a case of Small Tumour of the Soft Palate.

Mr. W. G. SPENCER showed a case of Lingual Thyroid.

Mr. T. JEFFERSON FAULDER exhibited a case for Diagnosis. The patient, a female, aged 23 years, had a swelling at the left side of the nose and the inner canthus of the left eye. It first attracted her attention about three years ago by causing pain. She now had intermittent headache and, on stooping, felt giddy. She suffered from nasal obstruction; the mouth was always dry and offensive in the morning, when she would cough up some "phlegm and bad blood." This condition would improve during the day. There were no occular symptoms except some epiphora and irritation. The swelling in the left inner canthus and the outward displacement of the left eye were easily seen. The swelling corresponded in position to the lamina papyracea of the ethmoid bone and the tendo oculi was stretched across its front. It was hard, rounded, sessile, and slightly tender. There was a swelling of similar character in the antero-superior part of the left nostril. The

post-nasal space was normal in all respects except for dryness of the mucosa. Transillumination of the antra was equal and remarkably bright; of frontal sinuses it was negative, or, if anything, somewhat against the right sinus. With the case were shown (*a*) photographs of the patient at the ages of 6 months and 15 years, both showing asymmetry of the orbits; (*b*) skiagrams; and (*c*) an orbito-nasal (ethmoidal) exostosis removed from a female patient, aged 20 years, who had proptosis, diplopia, and defective vision (3/60) of the right eye, as well as right nasal obstruction. The tumour was visible in the naso-pharynx, blocked up the right nostril, and was shown by skiagrams to extend in the orbit as far back as the optic foramen. It consisted of cancellous bone with a covering of dense eburnated bone. This patient has recovered her vision and remained well ten months after operation.

Dr. NOEL D. BARDSWELL showed a case for Diagnosis.

Dr. HORSFORD showed a case of Aphonia for Diagnosis.

The PRESIDENT exhibited a Laryngeal case.

Dr. F. F. MUECKE showed a man with Paralysis of the Internal Tensors.

Dr. J. DONELAN showed a man with a Fistulous Opening into the Maxillary Antrum.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Chronic Endometritis.

A GENERAL meeting of this section was held on Nov. 3rd, Dr. H. MACNAUGHTON JONES, the President, being in the chair.

The PRESIDENT referred to the great loss which the section had sustained through the death of Dr. J. J. Macan. He had attended the council meeting in October, and had been present at the opening meeting of the session. Dr. Macan had held a prominent place in the literature of obstetrics and gynæcology in this country for over 20 years. He edited the *Journal of the British Gynæcological Society* for several years, and his comprehensive quarterly summary of current international literature was not excelled in any cognate journal in any language. With a genial, generous-hearted, and kindly disposition, outspoken, ruggedly honest in his praise or criticism, there was a striking personality which would live in the affection and memory of all those members of the section who knew him and admired his abilities.

Dr. ARCHIBALD DONALD and Dr. W. FLETCHER SHAW read a paper on the Symptoms and Treatment of Chronic Endometritis, with Special Reference to the Results of Curetting. The paper dealt with the clinical aspects of chronic endometritis. The name was used to denote a class of cases of which the commoner symptoms were menorrhagia, metrorrhagia, leucorrhœa, dysmenorrhœa, and pain in the lower abdomen, associated with a moderately enlarged uterus which was tender on palpation. Two groups of cases were included under the name: in one an inflammatory change seemed possible; in the other any inflammation of a septic or specific origin seemed out of the question. So far little help had been forthcoming from the pathologist as to the changes in the endometrium which were associated with these symptoms. Dr. Donald and Dr. Shaw continued to use the name "chronic endometritis" as a matter of convenience, although real inflammation of a chronic kind was probably rare. The objects of the inquiry were to ascertain the results of curetting and the comparison of the results in the different types of case, and further to find out the relative frequency of the various symptoms and the result of treatment in each individual symptom. The clinical material consisted of 267 cases (hospital and private) of uncomplicated chronic endometritis. Notes had been taken before treatment in all of these cases, and the later condition of the patient was ascertained by written replies to printed questions. In all cases at least 12 months had elapsed since the operation. An analysis of the symptoms and their relative frequency showed that menorrhagia, dysmenorrhœa, and leucorrhœa were most frequent in all cases, menorrhagia and leucorrhœa being most frequent in women who had had children, and dysmenorrhœa in nulliparæ and virgins. Notes were made as to the position of the uterus in 188 cases, and it was found that anteflexion was twice as common as retroflexion in virgins, while in women who had borne children these conditions were reversed. As to the effects of treatment, the general result was that of the 267 patients 230 (or 86·1 per cent.) were relieved, and 37 (or 13·9 per cent.) were not relieved. The large majority did not obtain the full benefit until some months after the operation. Particulars were given in detail as to the results in regard to the various symptoms. In dysmenorrhœa the results were very good and went to confirm the belief that this symptom was often caused by some abnormal condition of the endometrium. Leucorrhœa was not quite as amenable to treatment, although the results were fairly good. Attention was directed to the point that the leucorrhœal discharge in the cases under consideration was always of uterine and not of vaginal origin. For the chronic abdominal pain and also for metrorrhagia the treatment was very successful. Some observations were made on the position of the uterus, and the results of curetting alone in cases in which the uterus was retroflexed or retroverted were found to be rather better than in the cases in which the uterus was anteflexed or anteverted. The effect of curetting in cases of sterility was distinctly good; in nearly one-third of the cases pregnancy followed within a comparatively short period.

OTOLOGICAL SECTION.

Syphilis in Relation to Otology.

A MEETING of this section was held on Oct. 25th, Mr. ARTHUR H. CHEATLE, the President, being in the chair.

After a few introductory remarks, in which he thanked Dr. E. Law for the very able manner in which he had carried out the duties of president during the preceding year, Mr. Cheatle referred to the arrangements for the section during the coming session. He announced that six meetings would be held instead of four, and that possibly in addition there might be an extra-metropolitan one at Bristol. He also announced that the meeting on March 17th, 1911, had been set apart for a general discussion, the subject chosen by the council being Trauma in Relation to Otology, to which it was hoped that members of the Surgical Section would come.

The PRESIDENT then opened a discussion on Syphilis in Relation to Otology. He divided the subject into cases due to (1) congenital and (2) acquired syphilis, and then proceeded to subdivide them according as to whether the external ear, the middle-ear tract, or the perceptive portion of the ear was involved. In speaking of the congenital cases he laid special stress on the importance of Wassermann's test for the diagnosis, and in reference to the treatment he pointed out that he had generally found the usual anti-syphilitic remedies useless, but hoped that better results might be obtained from Ehrlich's "606." He also mentioned that in these cases he had obtained great benefit from the use of blisters applied to the mastoid. In dealing with cases of middle-ear deafness in acquired syphilis, he laid great emphasis on the importance of examining the naso-pharynx for gummata, and also pointed out the difficulty of exactly localising the seat of the lesion when the perceptive portion of the ear was involved owing to the absence of post-mortem examinations in such cases. The various forms of disease were illustrated by cases that had come under his own observation.

Dr. URBAN PRITCHARD stated that he was glad to hear the President's allusion to the fact that in congenital syphilis the age was not always a fixed one; he had seen cases which came on quite late in life, and occasionally the keratitis came on after the internal ear symptoms; he had himself had excellent results from blistering. In regard to acquired syphilis, he had been struck with the infrequency of Eustachian deafness in syphilitic pharyngitis, and in cases of secondary or tertiary affections of the meatus he pointed out that it was very easy to make a mistake in thinking that the condition was epithelioma.

Mr. C. E. WEST asked if there was any definite proof in the late cases of labyrinthine trouble of the patient being syphilitic, and even if the patient was syphilitic as a child, that the later deafness was due to syphilis. He mentioned that he had never seen a case of chancre of the Eustachian tube, but that a collection made in 1885 gave 100 cases, many of them reported in France; he thought that the increasing use of sterilisers coincided with their disappearance. In regard to condylomata, he had been struck with the intense pain the patients suffered.

Mr. A. L. WHITEHEAD stated that as a point of diagnosis he had always regarded the chronic painless effusion of the

knee-joint as a valuable sign. With regard to ulceration of the nose and nasopharynx in congenital conditions, he did not think this was infrequent; he thought that the point was not sufficiently emphasised that in congenital syphilis there might be double lesions. With regard to condylomata in the acquired condition, he agreed with Mr. West as to the pain that was present, and pointed out that though intractable, as a rule they healed without causing contraction.

Mr. P. MACLEOD YEARSLEY said he would like to disagree with the President on one part of his paper—viz., that in which he said that the disease never caused lesions in utero such as to produce deaf-mutism; he did not think that that statement was proved, as Bardeau described his researches on stillborn children who were syphilitic, and he found the middle and internal ear involved, chiefly purulent middle-ear inflammation with adhesions of the membrane and hæmorrhages and accumulations of pus in the labyrinth with destruction of the organ of Corti. He thought it possible that syphilis might cause deafness in utero. He agreed that otosclerosis was not due to syphilis.

Dr. DAN MCKENZIE pointed out that syphilitic deafness might come on when the patient was under antisyphilitic treatment, and related a case illustrating this point. With regard to the pathology of the congenital cases, he agreed with Mr. Yearsley and remarked that a paper had appeared in the Archives of a German society which dealt with cases of stillborn children from syphilis. On microscopic examination these children were found to have distinct lesions, probably of a meningeal character, consisting of round-celled infiltration, and there were other pathological changes which, if these children had lived, would probably have caused deafness. With regard to the vestibular test, he remembered testing a few congenital cases in one of which the vestibular reactions were normal, but in most of those tested the vestibular reactions were absent in proportion to the deafness.

Mr. J. E. R. MCDONAGH did not think one could gauge the effect of treatment in congenital syphilis, because, irrespective of treatment, congenital syphilis tended to give a positive Wassermann reaction throughout life, and that was not altered however much mercury was given. That positive reaction should not be taken as an indication that the "606" had no effect on the Wassermann reaction in congenital syphilis. In late acquired syphilis one could change the reaction by giving "606." He had treated only one case of ear trouble with "606," and that was an acquired case in which the patient had a lesion of the ninth nerve on one side. He had reported the case in THE LANCET.[1] Hearing was certainly improved after the injection. With regard to eye troubles after the injection, Ehrlich had had 12,000 reports without any eye trouble. He himself had injected 82 patients and there had been no eye trouble; two of them had optic neuritis, but it cleared after the injection. In answer to Mr. SIDNEY SCOTT, he said that in congenital syphilis, if one got a negative Wassermann test one could be fairly certain the case was not congenital syphilis. In acquired syphilis that did not always hold good; there was a small percentage who had got syphilis but who gave a negative Wassermann reaction.

Mr. E. B. WAGGETT referred to the importance of examining the post-nasal space in patients who had otalgia with syphilis. He asked the President as regards his experience of suppuration in the middle ear in cases of tertiary syphilis; he had himself seen a few cases.

The PRESIDENT, in his reply, said he had come to learn and he had learnt. He had already expressed his ignorance of some of the points about which he had been questioned. As to the proof of the cases being syphilis, he had taken every care to exclude everything else, but most of the cases were seen before the Wassermann test was in vogue. The keratitis frequently preceded the ear trouble, and he thought it was more frequent than was generally supposed. With regard to middle-ear affection in congenital syphilis, apart from Eustachian obstruction met with in nasal disease, he did not think there was such a thing as congenital syphilis causing what would appear to be catarrh of the middle ear, producing changes in the membrane. It was curious that condylomata did not cause contraction. He was glad to hear Mr. McDonagh's remarks, and it was clear that much experience was necessary in order to place the matter on a sound basis.

[1] THE LANCET, Oct. 22nd, 1910, p. 1200.

OPHTHALMOLOGICAL SOCIETY.

Exhibition of Cases.

A CLINICAL evening of this society was held at the Medical Society's rooms, Chandos-street, W., on Nov. 10th, under the chairmanship of Mr. GUSTAVUS HARTRIDGE, Vice-President.

Mr. G. WINFIELD ROLL showed a case of Sympathetic Ophthalmitis which had recovered. The patient was a boy who had his cornea wounded by a jagged piece of china, and sympathetic ophthalmia ensued six weeks from the original injury. Atropine and hot fomentations were applied, and mercury was given internally. He had now 6/12 vision in the sympathising eye, while vision in the eye originally injured was 6/36. No intra-ocular injections had been used.

Mr. GEORGE COATS showed a series of slides illustrating Atypical Coloboma of the Iris and Lens, with persistent mesoblastic strand. The case, he contended, favoured the theory of Hess—that coloboma of the lens was due to fibrous strands of that sort. Not only the vitreous and the retina showed changes, but the choroid also. It favoured the theory that atypical coloboma was due to pressure on the back of the eye of such persistent strands when the lens almost filled the globe. In the upper part of the eye there were certain areas of choroidal atrophy, although there was no persistent mesoblast. If found alone they would be taken for patches of old choroiditis, thus illustrating the difficulty which often arose in differentiating between a congenital abnormality and a patch of inflammation. That difficulty had given rise to the idea that true coloboma did not occur in the macula, whereas Mr. Coats thought it did. The changes in the fundus exactly followed the retinal vessels. Another interesting point was in connexion with the development of zonula; he favoured the mesoblastic origin. The cases upon which he based his remarks were mostly cases of aniridia.

Mr. W. H. H. JESSOP showed a case of Recurrent Melanotic Sarcoma of the Conjunctiva which was shown before the society seven years ago. At that date the tumour, but not the eye, was removed, and proved to be melanotic sarcoma. There was a recurrence in 1904, up to which time it had remained quiet, and there were only a few brown pigment spots. It was wandering pigment. In May, 1907, there was more congestion and then another swelling at the site of the old one. That recurrence was removed and the site cauterised. The patient came again in November, 1910, having had no pain and with vision 6/9, there being a small swelling under the upper lid. It was removed with the surrounding conjunctiva and found again to be melanotic sarcoma. Nothing more was now to be seen except two little patches. He had never seen a case of the kind last so long with such slight recurrences.—Mr. HARTRIDGE commented on the possibility of being more conservative with eyes the seat of such tumours.—Mr. E. TREACHER COLLINS alluded to three cases of epibulbar sarcoma which he had removed without taking away the eye, and there had been no recurrence, one of them having been done 20 years ago, and she had had the growth partly removed before he saw her. But that was not a melanotic growth but was definite sarcoma, as confirmed by Mr. Butlin.—Mr. E. W. BREWERTON believed that in Mr. Jessop's case the outlook was now less hopeful, and that a general metastasis was setting in, which would kill the patient. Something more should, he urged, now be done to the conjunctiva, and the brown pigment patches should be excised.

Mr. JESSOP also showed a case of Solitary Tubercle of the Choroid, in which there had been no vitreous opacities and very little pigmentation. The condition now looked like retinitis proliferans.

Mr. J. H. TOMLINSON showed a simple Projecting Polariscope for use in Testing Colour-perception, and illustrated it with a patient whose illumination perception was normal but colour-vision abnormal.

Dr. JOHN HERN showed a case of Kerato-irido-cyclitis. This condition he regarded as a clinical entity. The causation had puzzled him, but some of the patients had been syphilitic. In treatment he insisted on the value of peritomy, getting right down on the sclera by means of a small curette, to destroy the blood-vessels on the surface of the sclerotic. He usually tried treating such cases with mercury first.

Mr. N. BISHOP HARMAN showed Twin Scissors for Sclerotomy (Herbert's operation), which worked like a punch, but without punching anything out.

Mr. R. FOSTER MOORE showed three cases of Severe Loss of Sight following Hæmorrhage. One was hæmorrhage after miscarriage, another hæmatemesis, and the third prolonged bleeding from the eye.

Mr. H. E. JULER showed a case of Sarcoma of the Iris, the interest of which was that it might be cyst.—Mr. TREACHER COLLINS said the case was under his care, having been sent to him by Mr. H. H. Taylor of Brighton. He advised him, before sending the case up, to puncture it; that was done, but nothing escaped, and there was no alteration in the appearance of the tumour. He had been expecting to see the case.

Mr. F. HEWKLEY showed a case of Injury to the Eye. It was a degenerate eye, the sight having been lost during the last nine years.

Mr. R. R. CRUISE showed a case with Fibrous Mass over the Disc, which he believed to be the result of injury. There might have been a coloboma in the region of the nerve towards the lamina cribrosa, and the coloboma might have filled up with clot.—Mr. COATS believed it to be due to rupture of the nerve, but Mr. M. S. MAYOU took another view regarding the history of injury as simply a coincidence.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on Nov. 11th, Dr. W. G. Willoughby, the President, being in the chair.—Mr. A. W. Gant (borough dentist, Cambridge) introduced a discussion upon School Dentistry. After drawing attention to the great differences in the figures as to carious teeth which were to be found in the reports of school medical officers, he expressed the opinion that at least 90 per cent. of the children attending public elementary schools in this country had dental caries. He urged a more careful examination for the discovery of caries than it was practicable for a medical inspector to make. It was very necessary to discover the earliest traces of caries in the permanent teeth, and if the future well-being of the children had to be considered as well as the immediate present the ages for medical examination and re-examination would not suit dental investigations. In examinations where no treatment was going to be offered, and when advice was sent to parents only in extreme cases, the most suitable plan would be to make a primary division between the temporary and the permanent teeth. The temporary teeth could then be divided into three classes, signifying fair, bad, and very bad dentures, or the subdivisions for the permanent dentition could apply to this also. The children with permanent teeth should be divided into those whose teeth were fairly efficient, those whose grinding capacity was impaired on one side only, and those whose grinding capacity was impaired on both sides. The present system of noting the number of carious teeth at the best could only make a very imperfect division of the children and gave little guide as to how the function of mastication was being performed. A phase of inspection which Mr. Gant considered of great importance from a medical point of view was the presence of pus in the mouth, which could invariably be traced to its source at the roots of one or more teeth. He had found over 30 per cent. of the children he examined with pus discharging from septic teeth, and about 5 per cent. of these had oral sepsis in a most marked and dangerous degree. He considered it was indispensable that any dental treatment offered to school children should be related to the school medical service as a whole, and that the preliminary steps which must be taken with regard to dental treatment should rest with the school medical officer. He had little hope that the mere cleansing of teeth, however regularly done, would abolish dental caries. Nevertheless, it was certain that cleanliness in that direction would have an appreciable effect provided it could be practised from the time the first teeth appeared. Very little good could be expected from persuading the present-day elder children to use a tooth-brush, but efforts should be made towards teaching the "cult of the tooth-brush," more especially in the infant schools.—Dr. H Cooper Pattin said that in Norwich, contrary to the experience elsewhere, the parents appeared to be really anxious that their children should have dental treatment.—Dr. R. E. Lauder considered it was futile to expect parents to take their children to a dentist if they had to pay for the treatment, and he urged that preventive measures should precede treatment.—Mr. R. Denison Pedley expressed the opinion that the appointment of a school dental surgeon was one of the most important parts of preventive work. There was an enormous amount of preventive work to be done, but it was useless to expect parents to realise their responsibilities unless they had some knowledge of the necessity for treatment, and that knowledge should come through the teachers, who should be given an opportunity of gaining an elementary knowledge of dental work. The school medical officer as a rule knew little or nothing about the teeth owing to the fact, which was to be deplored, that conservative dental work was not carried out in general hospitals.—Dr. Andrew J. Laird referred to the desirability of the dental inspections being made by dentists, and preferably by those who would subsequently carry out the treatment. He advocated the early use of the tooth-brush, and if possible before school age.—Dr. A. H. Bygott declared that the best teeth among the poorer classes were to be found among those who came under the care of boards of guardians, and thought it a great pity that a child had to be a pauper before its teeth could be good. He did not consider the tooth-brush was so necessary as some persons had stated.—Dr. Sidney Davies urged the importance of educating people in the proper methods of feeding, and thought that dentists might render assistance in recommending a practical diet which as far as the teeth were concerned would be self-cleansing.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.—A meeting of this society was held on Oct. 7th, Professor R. Muir, the President, being in the chair.—The President reviewed briefly the chief stages of research which had led up to the discovery of the Wassermann reaction.—Dr. C. H. Browning explained in detail the method of the reaction, and stated that at present there was no possibility of the test being satisfactorily carried out except in specially equipped laboratories by experienced workers. As to the specificity of the reaction, positive results had been obtained in other protozoal diseases besides syphilis (frambœsia, sleeping sickness), and in leprosy of the tuberous type. Except in these conditions positive results were very rarely obtained with non-syphilitic sera. In untreated acquired syphilis the Wassermann reaction was present only exceptionally before, and usually from 15 to 30 days after the appearance of the chancre. In the secondary stage 95 per cent. of cases, and in the tertiary stage 75 per cent., were positive. Of cases in which the disease had passed into a latent stage 50 per cent. reacted positively, and a similar percentage of positive results had been obtained in women who had, in accordance with the law of Colles, borne syphilitic children without themselves exhibiting symptoms of the disease. No limit could be set to the date after infection at which a positive reaction might be obtained; cases had been found to react positively 40 or 50 years after the original inoculation. The clinical significance of a positive reaction was that it indicated that dissemination of the virus had occurred and that the living virus was probably still present, though not necessarily infective; tertiary lesions, for example, were usually non-infective on account apparently of the small number of spirochætæ which they contained. The diagnostic value of the reaction was evident in determining the specific nature of atypical lesions—e.g., apparently non-syphilitic soft sores, of extra-genital sores, and of manifestations of the disease in cases where primary and secondary symptoms had been suppressed. As a means of diagnosis the reaction was supplementary to the examination for spirochætæ, and where these were scanty, as in tertiary lesions, it was alone available. It had also shown the syphilitic nature of cases of primary aortic disease, of leukoplakia, and of various cerebral lesions. As to the effect of treatment on the Wassermann reaction, the general result was that energetic mercurialisation early begun and long continued restored the serum to its normal condition, and only by such treatment could late manifestations be prevented. Treatment should also be adopted in latent cases giving a positive reaction, in view of their tendency to relapse and of their infectivity. In all cases treatment should be continued as energetically as possible for a prolonged period after the disappearance of all symptoms, including the Wassermann reaction. Thereafter at intervals repeated tests should be made, and the reappearance of a positive reaction should indicate the necessity for immediate resumption of treatment.—Dr. Ivy Mackenzie referred to the observations of Dr. W. Gilmour of Gartloch Asylum, who obtained a positive Wassermann reaction with the blood of 98 per cent.

of 180 cases of general paralysis, and of 70 per cent. of 22 cases of locomotor ataxia. The cerebro-spinal fluid gave a positive reaction in 40 out of 68 cases of general paralysis, and in two out of six cases of locomotor ataxia. Referring to dioxydiamidoarsenobenzol she gave details regarding the drug, methods of administration, dosage, effects and excretion. In nine cases of recent syphilis in Maryhill Barracks the injection of one dose had immediately beneficial effects, the patients being dismissed from hospital within a fortnight free from any evidence of disease. Of 16 cases of general paralysis treated with "No. 606" four were undoubtedly benefited. From being restless, stupid, dirty in habits and difficult to manage, they had become sensible, quiet, intelligently interested in their surroundings, and able to work in the wards on their own initiative. In two of them there was a marked retrogression of the physical signs, and one patient was ready for dismissal.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Nov. 10th, Dr. T. R. Bradshaw, the President, being in the chair.—Dr. Hubert Armstrong showed two babies, aged 5 and 7 months respectively, with Obliquity of the Cranium due to suckling at one breast only, and read a note on Cranial Asymmetry in Infants due to Postural Causes. Special reference was made to the mechanical causation of the rickety head and of the lateral deviations in congenital torticollis and the class of case exampled by the patients exhibited.—Dr. Alexander Stookes read a paper on Puerperal Eclampsia, with Especial Reference to the Causation and Treatment. He mentioned various statistics with regard to its occurrence, and considered the theories of its causation, whether due to intestinal absorption or renal diseases, or whether the cause was to be sought for in the ovum. He described several cases recently seen by him and discussed in detail the treatment that he advocated.—Dr. Arthur J. Wallace alluded to the use of veratrum viride, which reduced the pulse-rate down to 60 per minute. It had been shown that when the pulse-rate was low the fits rarely occurred. He recommended the veratrone of Parke, Davis, and Co. for this purpose.—Dr. H. Leith Murray said that as a result of some recent observations of his he was unable to find any placental cause for the condition.—Dr. O. T. Williams read a paper on Cod-liver Oil. He recalled the work that he and others had done on the influence of the oil upon the tubercle bacillus and upon the nitrogen metabolism and fat retention in phthisis. In diabetes phthisis was frequent, and this disease showed a diminution in the amount of unsaturated fats in the blood. In the first 50 years of the last century great advances were made in the treatment of phthisis, but the last 50 years did not show a proportional advance. All the authors of 50 years ago spoke very highly of the effects of the oil, but now it was rarely mentioned. Clinical and scientific reasons were presented for its greater use. The analyses of five oils were shown. The oil contained a very highly reactive unsaturated acid, having 18 carbon atoms and four double bonds. The fatty acids from the oil easily polymerised. The effects of oxidation were shown. The best oil was the least oxidised and contained by far the most unsaturated acids. It was prepared in an atmosphere of carbon dioxide and was nearly hydroxyl free. The oil acted in virtue of the peculiar unsaturated acid contained in it and not through the small quantities of the so-called active principles.—Several members then discussed some of the aspects of the treatment of phthisis.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on Nov. 2nd, Mr. Stanmore Bishop, the President, being in the chair.—Dr. G. E. Loveday gave a communication on the Indian Ink Method of Demonstrating the Spirochætæ. The chancre, which should have had no treatment for two or three days previously, was washed and dried; the edge was abraded with a sterile instrument; and serum was squeezed out and a drop mixed with water and Indian ink in equal proportions. The mixture was spread in films on a slide, allowed to dry, and examined directly under the oil-immersion lens. The spirochæta pallida appeared white on a brown ground. Cells present showed up and served to indicate the size of the spirochætæ. Other methods were staining, which was unsatisfactory, and the dark-ground illumination method. This required a special condenser and some experience, but had the advantage of showing the characteristic movements of the spirochætæ. The simplicity and reliability of the Indian-ink method recommended it. Secretion from a primary sore hardly ever failed to show the spirochætæ. Spirochæta pallida must be distinguished from other spirochætæ, especially spirochæta refringens. The latter was, however, rare in the secretion from non-ulcerated chancres, and it was thicker and had fewer turns to its corkscrew than the spirochæta pallida. Since the Wassermann reaction was negative in 40 per cent. of cases of syphilis at all periods of the primary stage, the search for the spirochætæ in doubtful cases was valuable. Spirochæta pallida was found in mucous plaques, almost always in untreated chancres, usually in the papular syphilide, and only occasionally in juice and scrapings from glands and very seldom in macular or roseolar rash. Specimens of spirochætæ were shown by this Indian-ink method.—Mr. J. Arnold Jones communicated Some Points in the Diagnosis and Treatment of Acute Suppuration in the Frontal and Maxillary Sinuses. After a brief reference to the anatomy of the parts and to the etiology, the symptoms and differential diagnosis were discussed. It was pointed out that in these cases periodic attacks of neuralgia (mainly affecting supra- and infra-orbital nerves), as accurate and regular in their periodicity as in malaria, might occur. The main lines of treatment in antrum cases were: (*a*) washing out the sinus and puncturing the nasal wall in the inferior meatus with a straight hollow needle; and (*b*) endeavouring to establish drainage through natural ostia by applications of cocaine and adrenalin, followed up by menthol inhalations. In frontal sinus cases the same measures were resorted to for the establishment of drainage, which if ineffectual in 12 or 24 hours should be followed by amputation of the anterior end of the middle turbinal. Extra-nasal operation was rarely necessary in acute cases. Illustrative cases from Mr. Jones's practice were quoted.—Mr. J. Walters read a paper on the Practice of Psycho-therapeutics. After a brief historical retrospect, the various methods of inducing hypnosis were explained and special stress was laid upon the methods of Bramwell and Sidis. A description of Mr. Walters's own method followed. He had employed this method in about 200 cases and had come to the conclusion that a state of distraction or very light hypnosis was the best. The chief factor of this state undoubtedly was "pre-adjustment," the patient being placed in the most suitable condition to receive and to maintain the suggestions given. This was aided by reinforcement (or inhibition), repetition, and the restfulness of the state itself. Cases were cited proving the efficacy of the method in somnambulism, alcoholism, neurasthenia, the obsessions, and insomnia.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 4th, Dr P. S. Abraham, the President, being in the chair.—Before the work of the evening commenced the Keetley memorial medal, founded by the society for presentation to each president at the termination of his year of office, in memory of the late Mr. C. B. Keetley, founder of the society, was presented to Colonel T. Holbein Hendley, C.I.E., I.M.S., ex-president.—Dr. F. S. Palmer showed a case of Progressive Muscular Dystrophy, pseudo-hypertrophic type, in a boy aged 6 years. By careful inquiry no history could be obtained of nervous or mental disease in the family or its collateral branches. He had whooping-cough when four years of age, and since then had developed the typical features of his disease.—Dr. Palmer also showed a case of Myasthenia Gravis in a man, aged 41 years, with distinct wasting of facial muscles, particularly orbicularis palpebrarum, masseters, and buccinators.—Dr. T. Grainger Stewart remarked on the unusual mode of onset and the great wasting of the facial muscles. Replying to the President, Dr. Palmer said he believed that no constant pathological changes had yet been discovered in the central nervous system.—Dr. E. Arthur Saunders showed a case of Diabetes in a boy aged 5 years. No family history of glycosuria was obtainable. He had passed over 2000 grains of sugar in a day. Under dietetic treatment all sugar disappeared from the urine.—Dr. Henry Barnes mentioned the occurrence of diabetes in twins.—Dr. Reginald Morton showed skiagrams of a case of Congenital Syphilitic Disease of the Elbow-joint. In one, taken before treatment, no bony outline could be detected at the site of the joint; in the second skiagram, taken after four months' treatment, the bony outlines of the joint were clearly defined.—Dr. N. Bishop Harman showed a case of early Conical Cornea in a woman

aged 28 years. Evidence in this case showed that the condition had remained stationary for several years under treatment.—Dr. Bishop Harman also showed a case of Chronic Glaucoma relieved by Double Sclerotomy occurring in a woman aged 64 years. He showed also an instrument made for him by Messrs. Weiss for this operation.—Dr. S. D. Clippingdale showed a case of Conical Cornea.—Dr. T. Grainer Stewart showed a case of Exophthalmic Goitre and Syringomyelia in a female, aged 20 years, a typist, the chief point of interest being the involvement of the seventh cervical segment on the left side and its escape on the right, seen on both sensory and motor sides.—The President remarked upon the close resemblance of some cases of anæsthetic leprosy to syringomyelia; in one case of the supposed latter disease the bacillus of leprosy had been found.—Dr. Harold Pritchard showed a case of Transposition of Viscera with Congenital Heart Disease in a child aged 12 months.—Dr. Saunders said, as to the prognosis in congenital heart disease, this was more favourable in the pale than in the blue cases.—Dr. Seymour Taylor suggested that bismuth should be given so as to reveal by X rays if the stomach was transposed, and an enema of bismuth might reveal by the same means whether the sigmoid flexure and descending colon were on the right side of the abdomen.—Mr. W. McAdam Eccles and Mr. Frank Savery joined in the discussion.—The President showed: (1) Two cases of Multiple Keratosis in children. Solid CO_2 had been successfully used in these cases. He alluded to some cases in which there was some evidence of heredity. (2) A young woman with extensive Erythematous Lupus. (3) A case of X Ray Dermatitis in a young girl who had been treated for ringworm.

MANCHESTER PATHOLOGICAL SOCIETY.—A meeting of this society was held on Nov. 9th, Mr. Alex. Wilson, the President, being in the chair.—Dr. W. Mair read a paper on Enlarged Thymus and Sudden Death, and described seven cases of lymphatism in which he had made post-mortem examinations.—Dr. A. Hill Griffith described three cases of Tumour of the Optic Nerve which on microscopical examination proved to be respectively an endothelioma, a sarcoma, and a lymphangeioma.—Dr. J. Arnold Jones described a case of Antro-nasal Polypus.

Reviews and Notices of Books.

The Practice of Midwifery. Being the seventh edition of Dr. Galabin's "Manual of Midwifery," greatly enlarged and extended by ALFRED LEWIS GALABIN, M.A., M.D. Cantab., F.R.C.P. Lond., and GEORGE F. BLACKER, M.D. Lond., F.R.C.P. Lond., F.R.C.S. Eng. Illustrated with 503 engravings, many of the new illustrations specially drawn by T. W. P. LAWRENCE, M.B. Lond., F.R.C.S. Eng. London: J. and A. Churchill. 1910. Royal 8vo, pp. xxxi.–1123. Price 18*s.* net.

DURING the last 23 years Galabin's "Practice of Midwifery" has passed through six editions, and this in itself is a testimony to the value in which it is held by medical practitioners. The seventh and latest edition has been much enlarged, so that whereas in 1886 the Manual consisted of some 800 pages, this number is now increased by 40 per cent., whilst the size of the page is a good deal larger. The present edition has been thoroughly revised and to a large extent rewritten. In this undertaking Dr. Galabin has had the able assistance of Dr. G. F. Blacker and the work has been very thoroughly done, in fact "The Practice of Midwifery" is, in our view, the best text-book on the subject yet published by British authors.

The subjects that have been chiefly revised are the development of the ovary and of the early ovum, the physiology of the fœtus and of the puerperal state, the mechanism of labour, the lower uterine segment, the pathology of eclampsia, hydatidiform mole, accidental complications of pregnancy, narcosis in labour, vaginal and extra-peritoneal Cæsarean section, and pubiotomy. A new chapter has been added on injuries and diseases of the fœtus. All this has entailed an addition of some 200 pages to the sixth edition. The treatment of "accidental hæmorrhage" is perhaps the least satisfactory part in the book since it is difficult to discover what the real opinion of the authors is on this subject. In former editions Dr. Galabin condemned the treatment of plugging the vagina. In this edition the authors state that "experience appears to justify this treatment, which is now generally accepted," but find that "the statistics of the results of treatment by plugging are very slightly better than those of the old method," this slight gain being due to the improvements in antiseptic midwifery, while they ask us to remember "that the treatment is a dangerous one in unskilful hands if either the plugging is not effective or antisepsis not fully maintained," and "that it is only available when the membranes are unruptured." From a perusal of all this it seems to us that the student might well be excused if his answers at the examination failed to satisfy the examiner.

The book is beautifully printed on excellent paper and the new illustrations by Mr. T. W. P. Lawrence are very good, and in these respects the seventh edition is far in advance of any that preceded it. In other ways than those which have been mentioned the manual has been brought well up to date and an examination of any section will show that the revision has been complete, while from the title page it would appear that Dr. Blacker is to be regarded as joint author. It would be as well, therefore, in future editions to eliminate the personal pronoun which is found to be so freely scattered in this edition. We presume that "I" when used refers to Dr. Galabin, but this is only presumption, and it may be that sometimes it refers to Dr. Blacker.

The authors and publishers may be congratulated on the production of such a handsome and complete treatise on the science and art of midwifery.

Diagnostic Methods, Chemical, Bacteriological, and Microscopical. A Text-book for Students and Practitioners. By RALPH W. WEBSTER, M.D., Ph.D., Assistant Professor of Pharmacological Therapeutics and Instructor in Medicine in Rush Medical College, University of Chicago, &c. London: Rebman, Limited. 1909. Pp. 641. Price 26*s.* net.

MANY as are the occasions in medical practice in which help has to be sought from the clinical laboratory, yet the full debt owed to this institution is scarcely realised until the appearance of some such volume as that now before us, which collects together the multitude of procedures at present available for the investigation of disease. The first chapter is devoted to examination of sputum, and the characters of the secretion, macroscopic and microscopic, and the objects to be looked for in it are first described, and then special consideration is given to the sputum seen in different diseases respectively. Chapter II. deals with oral, nasal, aural, and conjunctival secretions; and we note that the recently described "Prowazek-Greeff bodies" in trachoma are described and depicted. Examination of the gastric contents occupies Chapter III.; the various tests used are described very fully, the conditions found in different gastric disorders being separately considered. In Chapter IV. the fæces are dealt with, and this leads by a natural transition to a discussion of parasites in Chapter V. Nearly 200 pages are devoted to the examination of the urine in Chapter VI. We note the author's preference for a means of estimating sugar, known as Purdy's method, in which glycerine takes the place of ammonia in the copper test solution; also his belief that Russo's test (methylene blue) is of value in the diagnosis between enteric fever and general tuberculosis. A short chapter is devoted to the secretions of the genital organs, and then a long chapter of over 200 pages is given to the examination of

the blood. Some useful illustrations are given of the curious ring-shaped and other bodies sometimes seen in the red corpuscles, which may easily give rise to mistakes. The last two chapters deal with transudates and exudates, and with the secretion of the mammary glands.

The book appears most complete and exhaustive. It is copiously illustrated, many of the pictures being in colours and the majority well reproduced. It could hardly be expected that all the many sides of the subjects treated of would be equally well done, and we think the chemical part of the book is perhaps stronger than the rest. But the standard of the sections on physical and microscopical examination is by no means a low one, and we congratulate the author on the care with which he has compiled his information and the skill with which he has arranged it. A certain amount of matter is included which is hardly a part of diagnostic method, such as the etiology of certain conditions, the dosage of vaccines, and a short account of Ehrlich's theory of immunity. There are a good many printer's errors scattered about, such as "oligema," "anerobic," "trichiurs," "distomum couns" (canis?); and mistakes such as "spirochaete pallidae," "this extracted feces." The writing is also careless in places, as in the sentence: "This test has very much the same relation to the detection of sugar in the urine as does Heller's nitric acid test towards albumin in the urine." There is an adequate index.

LIBRARY TABLE.

The Pathology of the Living and other Essays. By B. G. A. MOYNIHAN, M.S. Lond., F.R.C.S. Eng. London and Philadelphia: W. B. Saunders Company. 1910. Pp. 260. Price 10*s.* net.—This is a reprint of a number of essays which have appeared during the last few years in various medical periodicals, and many of them are certainly deserving of republication. The title essay treats of the question of the pathology of the abdomen disclosed at operations, as contrasted with the pathology found at the necropsy, and many useful hints are given as to the misunderstanding of abdominal symptoms which may occur from a want of appreciation of the true explanation. Several of the other papers are of almost equal interest, and we would mention specially the article on the "mimicry of malignant disease of the large intestine," for there is little doubt that many cases in which a mass is felt in the colon are of chronic inflammatory origin and are not malignant.

Les Formes Larvées du Paludisme: Diagnostic et Traitement. By Dr. BASILE MOUSSÉOS. With 18 illustrations. Paris: Vigot Frères. 1910. Pp. 144. Price Fr.3.50.—Dr. Mousséos has had a long experience of malaria during his 20 years' residence in a malarious district in Asia Minor. He adopts the classification of the disease into (1) intermittent fever, (2) "fièvre larvée," and (3) malarial cachexia. He compares paludism to a tree, of which intermittent fever is the root, *fièvre larvée* the trunk, and the malarial cachexia the branches and fruit. The term "*les fièvres larvées*" is used generally by French writers to denote "different affections of a periodic character, having a course more or less obscure, presenting some analogy with intermittent fever, and yielding to similar treatment." The book comprises six chapters, in the first of which the plasmodium in its various forms is described as also the author's method of examining the blood of a malarial patient. In the next he gives a description of *fièvre larvée*, with illustrative cases, and discusses how it may be diagnosed. The third chapter is a consideration of the value of quinine in combating the plasmodium in *fièvre larvée*. The "plasmodic toxæmia" forms the subject of the fourth chapter, and this is followed by one on hæmoglobinuria. In the last chapter the author gives his general conclusions. Referring to his modes of treatment, he says that the only objection is the large number of injections necessary in treating a case of malignant fever or a malarial cachexia. But to meet this he has had prepared at the laboratory of the "Pharmacie Centrale de France" a product which contains all his medicaments "difficilement synthétisés." The work is dedicated to Professor Laveran, and Dr. Alexandre Cawadias contributes a preface. The book is interesting, being written in a style which at once secures the reader's attention.

A Natural Method of Physical Training. By EDWIN CHECKLEY. London: T. Werner Laurie. 1910. Pp. 174. Price 1*s.* net.—The author believes that there is more "straining" than "training" in a good many popular systems of physical development. The method he advocates does not require any apparatus, and "will build up the frame of the slender and reduce the unwelcome proportions of the corpulent without the employment of machinery or harsh and weakening methods of dieting." The main point in Mr. Checkley's view appears to be the learning to breathe properly; "to learn to breathe is to learn the A B C of physical health." Various exercises are described for developing the muscles and joints, and advice is given as to the general carriage of the body. The author's views are mainly rational and the exercises described are likely to improve the muscular development, the respiratory capacity, and the general health. In reference to the physical training of girls, "ludicrously guarded against exercise that they need as greatly as boys," his arguments do not apply to the conditions of female education that obtain at present, although they would have been to the point 20 years ago. The last chapter of "Hints and Suggestions" contains good advice, and except for the peculiar views the author entertains as to the mechanism of respiration and the curvature of the spinal column, the suggestions in the book are sensible and practical. The work is written in a loose style and the spelling is the author's own, where it does not follow American usage.

JOURNALS AND MAGAZINES.

Edinburgh Medical Journal.—In the current number of this journal Professor David MacEwan discusses Bier's treatment by venous hyperæmia, which he finds useful in open tuberculosis and in acute circumscribed inflammations, such as carbuncles, abscesses, and bursitis. Professor James D. Heard writes on the significance of transient cerebral crises and seizures as occurring in arterio-sclerosis, and quotes the various views that have been held as to their pathology; and Dr. W. E. Foggie records a case of congenital dextrocardia, with "cor triloculare biventriculare." Dr. J. D. Comrie and Mr. J. S. Fraser report the results of their experience in the examination of the sphenoidal sinuses in 50 cases, and note the need for microscopical as well as naked-eye examination to determine the actual existence of inflammatory changes. Dr. H. Ruthven Lawrence points out the advantages of scopolamine-morphine as an anæsthetic in maternity practice.

The Medical Chronicle.—In the October issue is published the first part of a valuable thesis by Dr. Robert Lakin on the Blood and Urine in Cardiac and Renal Dropsy. He concludes that cardiac dropsy is purely mechanical, there being no plethora or hydræmia; whereas in renal disease there is hydræmia, which is not, however, the cause of the œdema. He comes to no definite conclusion as to the relationship between retention of chlorides and œdema. Dr. R. T. Williamson gives an account of the proceedings at the Third International Congress on School Hygiene, held in Paris, 1910; and Dr. Robert E. Lord records a case of perforation of a typhoid ulcer in a boy, aged 11 years, with recovery after operation.

The Birmingham Medical Review.—In the September issue of this review Dr. J. Douglas Stanley writes on Phthisis and the Municipal Sanatorium, emphasising the importance of after-care of patients whose disease is apparently arrested. Dr. James E. H. Sawyer discusses bruits heard over the manubrium sterni in children, and concludes that they are formed in the jugular veins and conducted in the direction of the blood-stream, and that they are of no pathological significance.

The West London Medical Journal.—Perhaps the most interesting paper in the October number of this magazine is that by Dr. A. Elliot, in which he records two cases of acute hæmorrhagic pancreatitis. In one case no gall-stones were present, and in the other only a single large stone in the gall-bladder, which could hardly have been the cause of the trouble. Dr. J. A. Coutts comments on pyloric stenosis in infants and narrates two cases, both of which ended fatally, one after and the other without operation. Mr. N. Bishop Harman summarises his experience of the Wassermann reaction as an aid to diagnosis in ophthalmic work and expresses a favourable opinion as to its value; and Dr. Phineass S. Abraham discourses pleasantly on specialists and specialisms.

Jahrbuch für Kinderheilkunde. September, 1910.—In this number Dr. Martin Thiernich writes on the subject of suppurative diseases of the kidneys and urinary passages during infancy; his article is illustrated with clinical cases. Dr. Eva Hoffmann contributes an article on fat absorption in infants and methods of estimating the pancreatic ferments in the fæces. She concludes that the diastatic ferment is better than the tryptic as a criterion or index of pancreatic efficiency. Dr. Franz Topovski gives interesting details of a case of maldeveloped intestine in an infant simulating congenital hypertrophic pyloric stenosis. The cæcum and appendix were dislocated in an aberrant position over the stomach in such a way that they exercised pressure on the pyloric end of the stomach and induced an intractable condition of vomiting.

Reports and Analytical Records
FROM
THE LANCET LABORATORY.

ARCHENA WATER.

AMONGST the health resorts and watering-places in Spain which deserve a wider patronage than they have hitherto received is Archena, which is situated in a beautiful valley on the right bank of the Segura river. The waters are thermal and consist of a solution chiefly of the alkaline salts of soda, including sodium sulphate, sodium carbonate, with carbonates and sulphates also of lime. The gas dissolved in the water contains sulphuretted hydrogen. We have made an analysis of the water, and in spite of the time which had elapsed since the sample was taken at the source we found sulphuretted hydrogen present. Further analysis showed that the water was only slightly mineralised, the total salts amounting to 3·74 grammes per litre, including the salts mentioned above. There were traces of other salts present, including iodides. We learn from Dr. W. H. Russell Forsbrook that the establishment at Archena contains a complete installation of baths, and includes swimming baths, shower and dry vapour baths, spray applications, inhalations, and other hydro prescriptions. There are excellent social attractions provided also. The water issues at a temperature of 132° F. and is used both for external application and for drinking purposes. Dr. Forsbrook reports that very satisfactory results are obtained from the use of the waters in muscular rheumatism and gout, neuritis, neuralgia, sciatica, lumbago, neurasthenic joint trouble, and in the stiffness of joints arising from old injuries, and especially in osteo-arthritis, in cutaneous skin diseases, and in chronic catarrh of the mucous membranes. The sanitation and the dryness and temperature at all seasons have received favourable observations. Archena is reached from Paris *viâ* Perpignan, Barcelona, and Valencia, and is about 59 hours' journey from London.

CERTIFIED COMPLEXION SOAP.

(ARMOUR AND CO., LIMITED, ATLANTIC HOUSE, HOLBORN VIADUCT, LONDON, E.C.)

The addition to soap of hamamelis virginica seems to us to be a suggestion of some value, inasmuch as witch hazel has a distinct reputation as an elegant astringent and hæmostatic. The soap, of course, is cleansing and the hamamelis serves as a healing application to a broken skin. The extract has thus been used for chapped hands, chilblains, and for skin roughened by exposure to weather. Complexion soap we found was a good firm white opaque tablet, delicately scented and economical in use. It is highly milled and practically free from moisture. There was no evidence of free alkali present. The soap is soothing and pleasant to use, and we have formed a good opinion of it.

MEDICATED THROAT PASTILLES.

ALLEN AND HANBURYS, LIMITED, 37, LOMBARD-STREET, LONDON, E.C.)

Two pastilles submitted to us are the basis of two excellent formulæ for application in affections of the throat. The pastilles are transparent and dissolve slowly, ensuring a prolonged application of the medicaments, which are admittedly useful in certain irritable conditions. The first formula includes formaldehyde and menthol, which form a stimulating, antiseptic, and expectorant combination of use in hoarseness and sore-throat. The second pastille contains formaldehyde and cinnamon oil, which is an excellent formula for use in affections of the mouth, nose, and throat due to specific organisms. The demulcent effect of the basis in each case is a decided advantage.

RUSTIC ALE.

(BRANDON'S PUTNEY BREWERY COMPANY, LIMITED, TWICKENHAM, MIDDLESEX.)

This is a beer of small alcoholic value, on account of which it can almost be regarded as a temperance beverage, the alcohol found not exceeding 2·83 per cent. by weight or 3·55 per cent. by volume. The beer belongs to the class of light malt liquors of low gravity, the specific gravity of the dealcoholised beer being only 1017. The malt extractives, therefore, are, as we found, moderate in amount—namely, 4·46 per cent. The mineral matter amounted to 0·16 per cent. and the malt sugar to 2·28 per cent. We believe it to be a correct statement that this beer is brewed from malt and hops only, and in spite of its agreeable light character we could not trace the presence of any objectionable preservative.

CALMINE POWDER AND TABLETS.

(THE CROWN CHEMICAL WORKS, LIMITED, MARSH GATE LANE, STRATFORD, E.)

Calmine is a pure white powder which is soluble in water, and contains diethylbarbituric acid combined with sodium. It possesses certain advantages over the acid itself, which is commonly known as veronal or diethylmalonyl urea. It has a decided soporific action, and has been employed in cases calling for the relief of pain and in nervous affections generally, especially of the acute type. It has been used in epilepsy, hysteria, and mania, but should not be employed save under medical advice.

TONI-KOLA.

(AGENTS: THE VICTORIA WINE COMPANY, 12 TO 20, OSBORN-STREET, LONDON, E.C.)

The value of kola extract in fatigue and exhaustion is well known, and an excellent vehicle for its administration

—of course, under medical direction—is a sound wine. Our examination of toni-kola enabled us to confirm the presence of caffeine. The alcoholic strength of the wine is not excessive—not much more than that of claret; it amounted to 11·77 per cent. by weight. The total extractive matters amounted to 15·71 per cent., and consisted chiefly of grape sugar. Toni-kola is prepared in France, and is an example of the pharmaceutical skill commonly exhibited by the pharmacists of that country.

New Inventions.

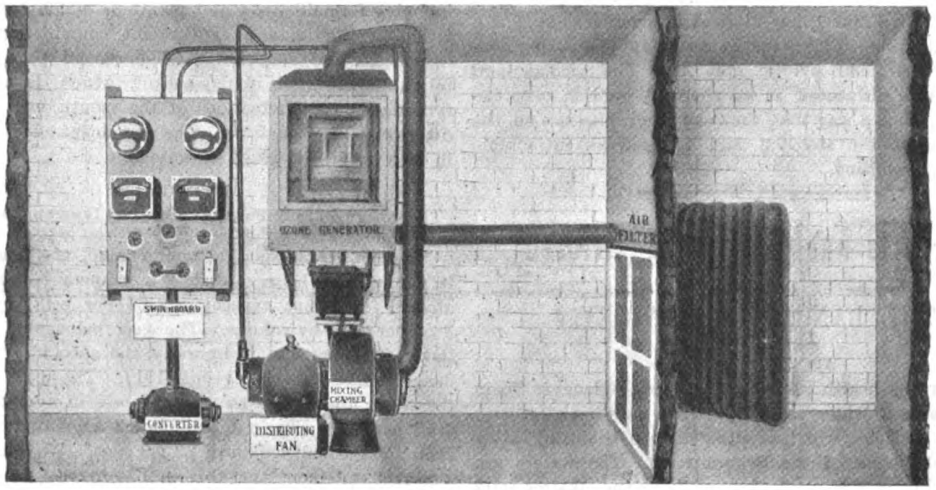
OZONE GENERATORS.

OZONE is a common constituent of pure unsullied air and owing to its powerful oxidising power its presence may be taken as indicating the absence of easily oxidised organic impurities. The pure air of the open country, the seaside, or of high altitudes which is prescribed for its vitalising influences invariably contains ozone which is, many believe, directly connected with the restorative powers of the pure atmosphere.

One thing, at any rate, is certain, and that is that the presence of ozone connotes pure air. This fact has led to the idea of applying ozone to the purification of air and to systems of ventilation. The suggestion obviously involves the use of efficient apparatus for the commercial production of ozone. The production of ozone by electrical discharge in the presence of air has long been known, but it has taken some time to bring forward an installation which could be trusted to discharge a stream of ozonised air free from oxidised nitrogen bodies. Nitrogen oxides, as well as ozone, are readily enough obtained when air is exposed to the influences of electrical discharge, but a careful study of the conditions under which these oxides are produced has enabled a differentiation to be made so that ozone can be produced to the exclusion of these impurities. This was the starting-point of the ozone generators of Ozonair, Limited, of 96, Victoria-street, Westminster, London, S.W., who now manufacture for a very large number of applications ozone generators which give ozonised air absolutely free from nitrogen acids. The generator applied to a system of ventilation and supply of pure air is demonstrated in the accompanying illustration. On the right in the illustration is the inlet chamber for the fresh air, which can be either cooled or heated in this chamber. The air is next drawn through the filter, which frees it of all suspended matter, smuts, and so forth, and at the same time absorbs such soluble gases as ammonia and sulphurous acid, which are commonly present in the air of large towns. The position of the distributing fan, switchboard, and ozone plant are obvious in the illustration, and the whole plant is operated by two regulating switches on the switchboard. The amount of air passing and the proportion of ozone within certain limits can be regulated at will. The air so obtained imparts a delightful refreshing sensation, is cool, and is most comfortable in respiration. The apparatus with due precautions relieves the air of all oppression and stuffiness, and hence the appreciation of it in crowded places, churches, public halls, theatres, clubs, workshops, steamships, and so forth. Modifications of the apparatus are made to meet the requirements of variable atmospheric or climatic conditions in order to ensure, in spite of variations of pressure, temperature, and degree of moisture, the steady production of an air ozonised to a definite point.

The Ozonair system has been adapted to the sterilising of water. To be effectual this method must provide for an intimate contact of the ozone with the water, and so the water is first distributed in the form of fine spray which impinges upon the upper part of a pile of glass spheres, through the interstices of which the stream of ozone is caused to ascend whilst the liquid, already partially ozonised and sterilised, descends over the surfaces of the spheres in a very fine film. Finally, after leaving the ozonising pile, the water is discharged in fine jets through ozone. The apparatus effecting all this intimate contact of the water with ozone is most ingeniously designed, and it is not surprising to find that the ultimate effluent is sterile, free from organic impurities, and blue like a mountain stream.

Ozone apparatus has also been designed for the bleaching of various articles, and considerable success is attending these experiments, even on the commercial scale, while experiments also give promise of ozonised air being successfully used in the preservation of meat. Experimental plant for laboratory and medical and surgical purposes are being manufactured, and here there is an interesting field for investigation which is very materially helped by the fact that by merely switching on the electric current an unlimited ozonised air-supply may be obtained for the purpose. The types of ozone generators, in short, are as numerous as their possible applications.



EASTBOURNE AND ITS CORONER.—The town of Eastbourne becomes a county borough on and from April 1st next. The whole question of the adjustment of the financial relations between the county of East Sussex and Eastbourne has been considered by a specially appointed committee which has recommended, among other matters, that until the death, resignation, or removal from office of Mr. George Vere Benson, and until a coroner is appointed for the borough, Eastbourne shall continue to be within the district of the county coroner as if the same had remained in the county of East Sussex. The county council at its meeting on Nov. 8th ratified the recommendation.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 19, 1910.

The Suffolk Epizoötic of Rat Plague.

THE fact that it is now nearly two months since any suspicious cases of human plague occurred in East Suffolk should in material degree reassure the public that the chances of man being attacked are small, more particularly so when regard is had to the inhibiting effect of the approaching winter. An active crusade against rats has been in operation for some time past, and has resulted in the weekly destruction of thousands of these vermin and their attendant fleas, any of which may have been carriers of plague bacilli, and outside the dwelling the risk of infection through the flea in this country is not one to give rise to much anxiety. As yet we are not apparently quite clear as to the extent of the invaded areas, but Local Government Board inspectors are, we know, visiting districts in Suffolk and Essex with a view of determining this important point. This is obviously the right line to pursue, but the negative side of the inquiry presents difficulties, as it will be hard to establish the absence of rat infection in any given district. For the most part the local landowners and tenants appear to be loyally coöperating with the authorities in the work of destruction, which naturally appeals to the farmers from an economical side altogether apart from its health aspects. If there are any backward or recalcitrant occupiers, and we have no doubt that there are many, they have been handed over to the authorities by the prompt issue by Mr. BURNS of the regulations relative to rat destruction, which would appear to confer upon the district councils ample power to enforce rat destruction throughout the whole of their areas. Doubtless the total extermination of rats is a difficult—some would say impossible—task, and we are not aware of any instance in which extermination has been accomplished over a wide area, whether in this or any other country. As vacancies are produced by wholesale death-dealing in one district so are they rapidly filled up by the invading hordes from adjoining areas, and equally the results of action in one area lead to dispersion of large numbers of rats into neighbouring districts. But this is no argument against a wholesale crusade against rats with the object of reducing these animals to their smallest proportions, and thereby diminishing as far as possible the chances of human infection.

Next to a war upon rats comes the important question of domestic cleanliness, which means freedom from insects. The history of plague shows that it invades the overcrowded houses of the unclean, in whose dwellings there are likely to be both rats and their fleas, so that all general sanitary precautions fight against the chances of infection. As is insisted upon in the recently issued memorandum of the principal medical officer of the Local Government Board, there are other steps to be taken by communities and health authorities besides the destruction of rats and their parasites. The experience of Glasgow shows that in this country plague in man can be easily controlled under conditions of efficient sanitary administration, and of this fact there can be little doubt. Things are not what they were 250 years ago, when what was known as the Plague of London occurred, since which time England has set an example to the whole civilised world in the matter of epidemiology and sanitary administration, and the country has been mapped out into sanitary areas each with its medical officer of health and sanitary inspector, while, more recently, county councils, with ever-increasing public health functions, have come into being. And in the matter of human plague, should there possibly be cases, the position is much what it would be were typhus or enteric fever or small-pox in question, and the key to control is embodied in the following points: (*a*) the prompt notification of all doubtfu cases either of the bubonic or pneumonic type and the treatment of such suspicious cases administratively as plague until the reverse is demonstrated; (*b*) isolation accommodation for the patients and the observation of all contacts; and (*c*) facilities for preventive inoculation, and a supply of trained nurses to deal with cases of pneumonic plague. As the official memorandum observes, bubonic plague is the rule and pneumonic plague the exception, but it is the little nests of the latter variety which create proper alarm in invaded localities. Professor W. J. SIMPSON'S letter in our columns this week emphasises the fact that Europeans enjoy no immunity from plague, and the public feeling now surely is that into our campaign against rat plague, and our provision for such human cases as may possibly occur, no question of economy should enter. The damage done to agriculture in certain of the invaded districts by the refusal of customers to accept local produce must already have been enormous. There is, in our view, no justification for alarm in this sense, as the danger of the contraction of plague by ingestion is very small. This all the work by the Madras Plague Commission shows. But public confidence has to be restored, and if this necessitates the voting of money by Parliament to aid the local authorities in their efforts it would be well and economically expended. The primary duty of dealing with the situation no doubt devolves upon the local authorities, who should be urged by all available means to maintain the campaign which they have begun.

In many districts in rural areas here may be found part-time medical officers of health and unqualified sanitary inspectors, and in these cases their efforts ought to be supplemented by the temporary appointment of experienced officers. Special knowledge of plague is in no sense essential, since if all suspicious cases are forthwith isolated, and bacteriological investigation made, knowledge of ordinary infectious diseases should ensure the adoption of adequate precautions. No doubt the local authorities will be advised by the trained epidemiologists and administrators of the Local Government Board, and, with the aid of the county council local administrators,

they should prove equal to the occasion, the action of the Local Government Board in providing bacteriological testing being particularly useful. Considerable speculation has arisen as to the length of time during which this rat plague has been in existence in East Suffolk and as to whether anything approaching a similar state of affairs exists elsewhere unrecognised. No answer can as yet be furnished to these questions, but it should be borne in mind that the black rat (Mus rattus), which is the bearer of plague to this country, is apt to be introduced into this country through any shipping which bears cargoes, and especially cargoes of grain, from any of the plague-infected ports in South America, Russia, or elsewhere, a reflection which at once leads us to ask what is the distribution of rat plague in these countries and what steps are taken to ascertain whether rats from them are plague-infected or not. What we should much like to know is whether the rats in localities where there has recently been human plague have been demonstrated to be free from this disease. An investigation of this nature would reveal to us what is the real risk of the importation of plague rats into this country in face of the recognised difficulties of ensuring the destruction of rats on board ship or of preventing their access to the shore. Most of the resources for preventing the egress of rats from ships are less efficacious than was formerly believed, and the examination of the rats in certain of our ports has shown that by some means or other the black rat has found his way ashore. The consequent possibilities must be remembered.

Housing Regulations and Back-to-Back Dwellings.

THE regulations governing the inspection of districts under the Housing and Town Planning Act of 1909, now issued by the Local Government Board, contain several requirements which are of importance to medical officers of health and others whose duties bring them into relation with insanitary dwellings and unhealthy slum areas. The regulations aim at extending the practice of systematic sanitary inspection of dwellings, which has hitherto been followed by the more progressive of our local authorities, to all sanitary districts in the country. All urban and rural district councils are now required to arrange for the necessary inspections of dwellings to be made by or under the direction of the medical officer of health, who is periodically to submit lists of dwelling houses and areas in the district, early inspection of which is in his view desirable. The inspection is to be of a comprehensive character, and in addition to the determination of a series of questions specified in the regulations, is to include examination for any defects which "may tend to render the dwelling house dangerous or injurious to the health of an inhabitant." The Act of 1909 has placed local authorities in a better position to deal with questions affecting insanitary property by the issue of closing orders, the preparation of improvement schemes and like measures; and the regulations now require that these bodies should deal with reports as received from the medical officer of health, and record the directions which they give and the results of their action, reports on these matters being also transmitted to the Local Government Board. A considerable addition has thus been made to the responsibilities and work of district medical officers of health. The regulations should increase the authority of the medical officer when reporting upon insanitary houses and advising what should be done with them, though their issue will be held by many further to emphasise the importance of security being given to all medical officers of health in their tenure of office.

The Housing and Town Planning Act contains a clause, which gave rise to considerable controversy in Parliament forbidding the future erection of back-to-back houses as dwellings for the working-classes, and limiting the erection of tenement houses in which the tenements are placed back-to-back to buildings which the medical officer of health certifies to have sufficient available ventilation. The first of these provisions will effect an important change in the type of house built in several industrial towns in Yorkshire, where back-to-back dwellings, either in rows or in blocks of four houses together, have been erected in large numbers under the provisions of local Acts and by-laws. These houses have an undeniable advantage in the cheapness with which they can be built and let; but for many years, especially since the well-known report by the late Dr. F. W. BARRY and Mr. GORDON SMITH in 1887, on back-to-back houses, the drawbacks of this type of dwelling, in a sanitary sense, have been generally recognised. Rows facing north get little or no sunshine into any part of the house, while those facing south, having all the rooms exposed to the sun, may become intolerably hot; the rooms are conspicuously stuffy, while much inconvenience and nuisance result from the absence of a backyard and the position of closets and ashbins. The probability that a higher death-rate exists in houses built back-to-back, when compared with "through" houses in the same neighbourhood, was indicated for the town of Salford by Dr. J. W. TATHAM for the years 1879–83, and by similar statistical comparisons which have since been made in a few localities, notably in Shipley by Mr. HERBERT JONES, in Bradford by Dr. W. A. EVANS, and in Manchester by Dr. J. NIVEN. An extensive inquiry into the subject has now been made for the Local Government Board by Dr. L. W. DARRA MAIR, whose report, with an introduction by the Board's medical officer, has lately been issued as a Parliamentary paper (Cd. 5314). In order to avoid, as far as practicable, the many sources of error which are liable to arise in the comparison of populations for this purpose, Dr. DARRA MAIR extended his investigations over 13 industrial towns in the West Riding of Yorkshire in which back-to-back houses are common, and limited the comparison to houses in good structural condition situated in relatively healthy areas. With the aid of the medical officers of health concerned, the vital statistics of these houses were obtained for a ten-year period, and by means of special inquiries in each district material was obtained for the correction of death-rates for the age and sex distribution of the populations. The inhabitants of the "through" and "back-to-back" houses compared in the report were of the same class, with similar occupations and wages, though the rent of the "through" houses, averaging 5*s*. 6*d*. a week, was naturally

higher than the rent of the "back-to-back" houses, which averaged 4*s.* 6*d.* a week. The corrected average annual death-rate from all causes was found to be greater in the back-to-back houses than in the "through" houses to the extent of 15 per cent. When only those back-to-back houses built in continuous rows were taken for comparison the excess was still greater, amounting to over 20 per cent. Back-to-back houses in blocks of four, each house having means of side ventilation, showed an average annual death-rate similar to that in "through" houses. The outstanding causes of deaths, which produced the excess of mortality in the back-to-back houses, were pneumonia, bronchitis, and other pulmonary diseases (exclusive of phthisis), and diseases of defective development and malnutrition in young children. An excess of mortality in back-to-back houses from infectious fevers and from phthisis could also be traced, but these increments were less conspicuous than in the case of deaths from the causes above mentioned.

The chief sufferers from residence in back-to-back houses, it would appear, are infants and young children and old persons. In part, this probably results from the greater liability of both young and old to death from pulmonary diseases other than phthisis. The higher mortality in infants was also in large degree due to an excess of deaths certified as due to atrophy, debility, marasmus, convulsions, and teething. From the first three of these causes the mortality in the back-to-back houses stood to that in "through" houses in the proportion of 169 to 100; from the last two the ratio was 164 to 100. These conditions are associated on the whole more closely than any other group of certified causes of death with the effects of impaired nutrition, imperfect growth, and abnormal development of the young child, and it is scarcely to be doubted that in the earliest period of life the nature of the home, especially, perhaps, its facilities for obtaining fresh air and sunlight, exert a powerful influence on their production. The value of these statistical observations is increased by the fact that the broad conclusions which are indicated by a study of the figures in the aggregate are also supported by the figures for the individual towns in which the investigations were made, in practically all of which an excess of mortality was found to have occurred in the dwellings of the back-to-back group. The information obtained by Dr. DARRA MAIR is obviously capable of a wider application than to back-to-back houses in Yorkshire. The construction of many blocks of flats and tenements may usefully be considered in the light of this report, which should be of material assistance to medical officers of health in advising upon the wholesomeness of existing working-class dwellings and the type of houses which should be supplied in future building schemes.

Undergraduates and Behaviour.

IT is probable that the uses of the safety-valve were first discovered by administrators rather than by mechanicians. Wherever human beings were assembled together under discipline, experience must have shown, before long, to any who were placed in positions of authority, that the reins of that authority might from time to time be judiciously relaxed, and that the temporary excesses consequent upon the relaxation were eminently conducive to the general maintenance of satisfactory conditions of control. The French Admiral who, in 1870, was called upon to proclaim to the fleet at Brest the establishment of the French Republic, with its watchwords, "*Liberté, Égalité, Fraternité*," is said to have concluded his address by a reminder that "*La Liberté n'embarque jamais*," and it is abundantly clear that the fulfilment of the conditions thus indicated would be enormously aided by the possession and exercise of the freedoms which Jack ashore has always permitted himself, and which, in all maritime nations, have usually been regarded with indulgence, if not with absolute satisfaction. The various holidays of mediæval societies were often little more than periods of salutary emancipation from customary restraint, and the licence of tongue of the mediæval jester was often but a vicarious departure from the reticence commonly enforced upon the people. From quite ancient times, when the undergraduates of our universities lived under a sternness of discipline which their modern successors would not tolerate for a day, the authorities who controlled them were well aware that there must be occasions on which this discipline should be relaxed; and so it came about that the times of the public conferring of degrees were recognised as occasions of this kind—as seasons of chartered libertinism, during the continuance of which the undergraduates obtained a freedom of speech not ordinarily permitted to them, and the dons were compelled to listen to opinions, not always of a complimentary character, but which, nevertheless, it might often be good for them to hear. And so, during Commemoration at Oxford, or the corresponding festival at Cambridge, it often befell that the serious portion of the proceedings received but scanty attention from the undergraduates among the audience, and that their noisy humours diverted attention from the eloquence of the public orator. These humours in time were carried to such a point that, some five-and-thirty years ago, it became necessary at one seat of learning to disperse the disturbing elements, to remove the undergraduates from the gallery formerly allotted to them, and to distribute them among the general audience who were every year attracted to the scene.

The more or less humorous outbreaks at the older universities had once, as we have shown, some justification in history; and were originally the only opportunities possessed by the undergraduates of protesting against unpopular persons or enactments. In modern times, or in modern seats of learning, the students are placed under wholly different conditions, and have but slight excuse for attempts to maintain or to imitate customs which have lost their original meaning, and which, transplanted into new and strange surroundings, may easily become mere vulgar survivals of barbarism. It is therefore with much regret that we have recorded, in recent issues of THE LANCET, the misbehaviour of undergraduates at Bristol, at Edinburgh, at Dublin, and at Cork. At Bristol they had provided themselves with wind instruments and banners, and their interruptions are described as making up in noise for their deficiencies in point of wit. At Edinburgh some of the finest passages of Mr. WYNDHAM'S address were drowned by noisy interruptions from the top gallery. At Dublin both the address of Sir CHRISTOPHER NIXON and the ceremony of conferring degrees were interrupted by the rowdyism of a certain number of students. The climax of disturbance was reached at Cork,

where the undergraduates, not content with verbal insults, pelted the auditorium with paper pellets, with sugar, and ultimately with pieces of stinking herring, one of which narrowly missed a lady who was advancing to receive her degree, and actually struck one of the professors. It is said that an old Irishwoman, whose speech betrayed her, was once asked in London whether she did not come from Cork, and that her prompt reply was: "An how did your honour guess that? Was it by my good manners?" Her claim would once, we believe, have been completely justified by the prevailing customs of the locality; but "good manners" must long have departed from a region where hobbledehoys can pelt ladies with stinking fish, and be regarded by other hobbledehoys with tranquillity, or even with approbation. It is something to learn from our correspondent that the Cork students guilty of these outrages were "comparatively few," but it is certain that these few would not have ventured to act as they did unless they had felt secure of at least the passive acquiescence of those around them. In a more satisfactory state of public opinion they would have been silenced by their neighbours, even if they had not been ducked.

We are glad to say that there is no trace of evidence to connect the perpetrators of these vulgarities with the medical faculty of any one of the universities concerned. Something like BOB SAWYER may once have had a real existence; but he is now as extinct as the megatherium. The last serious attempt to resuscitate him was made some time in the seventies of the past century, in an unfortunate article in the *Fortnightly Review*, which, a reply to it having been refused insertion by the offending magazine, was soon afterwards dealt with as it deserved in the *Contemporary Review*. Since that date the gravity of the work of the medical student has been thoroughly recognised by all responsible writers, and the public has come to understand that the course of medical study compels its pursuers to lead a sober and steadfast life. The medical student of to-day, and, indeed, of many days gone by, is "serious in a serious cause," and is too conscious of the nature of the duties for which he is preparing to allow himself to be identified in any marked way with rowdyism. But in whatever faculty they may chiefly occur, the outbreaks to which we have drawn attention are much to be regretted, and it is difficult to suppose that some responsibility for them does not attach to the authorities of the universities concerned. If this be not the case, if they are merely the ordinary consequences of insubordination and of ill-manners, they point at least to a responsibility lying farther back, to a remissness on the part of those who were concerned with the earlier training of the offenders, or to impediments arising from a state of national feeling, comparable to that which undoubtedly exists in lower strata of the community. Our public elementary schools are turning out, year after year, too many children who, having learnt nothing by which they can immediately profit, have no desire for knowledge and no consciousness of its value, and who respect little, because they have not had their attention duly called to the things which are worthy of respect. If similar conditions are to affect also the classes who resort to our universities, the values of the degrees conferred by them will be diminished by the nature of the associations at the cost of which they will be obtained. "The Oxford manner" may have passed into a joke, but we still have the right to expect as a result of the highest form of scholastic training some outward and visible signs of the qualities which such a training may reasonably be expected to confer. Vulgar rowdyism can never lead the way either to the acquirement of knowledge or to the practice of the politeness which smooths away so many of the difficulties and rough places of the world, which costs nothing, and which yields so abundant a harvest to those by whom it is practised.

Annotations.

"Ne quid nimis."

ON THE POSITION OF MATERIA MEDICA IN THE MEDICAL CURRICULUM.

THERE was a time when it was very necessary for almost all medical men, especially for all in general practice, to possess a fairly full knowledge of materia medica. They had to recognise the plants from which were obtained the drugs they administered; they had to be able to decide whether the crude drug presented to them was exactly the drug they wanted or something bearing a close resemblance to it. They had to know the method of preparation of the infusions, the decoctions, and the extracts which were the forms in which these drugs were finally administered. They had to know the right temperature at which the preparations had to be made; the boiling points of liquids, the solubility of substances, and the tests for purity of the drugs employed by them. Therefore, in those days now long gone by, it was but reasonable for the student of medicine to be expected to possess a very thorough knowledge of the articles entering into the materia medica. They were questioned on the methods of preparation of the drugs; they were required to know, even to the smallest ingredient, the composition of the various compounds and the relative proportions of the several constituents. They had to recognise by sight a very large number of crude and refined drugs and of natural and prepared salts. They were required to be fully acquainted with the various tests which each substance was expected to pass, and some examining bodies even required, in addition, that the student should be acquainted with the natural orders to which the botanical specimens belonged. It was, on the whole, a dry subject, difficult to learn and remember, and many were the devices invented to enable the student to fix in his memory the constituents of some of the more complex preparations. The knowledge that was obtained with so much toil was at one time doubtless of genuine benefit, but long after the actual need for it existed the examining boards in this country persisted in requiring it of candidates. At last came a reaction. The increasing extent of the sciences ancillary to medicine claimed more and more of the student's time; a greater and increasing portion of his curriculum was demanded for the study of physiology, of chemistry, of physics and biology; and those with whom rested the preparation of the courses of study of medical students looked round to see which of the subjects studied could be most conveniently jettisoned, and threw over materia medica. Taught as it was then, much of it had become useless and obsolete. In the older scheme of study materia medica was linked on to therapeutics; the student was taught the value of certain drugs in the treatment of diseases of which diseases he had no knowledge either as to symptoms, pathology, or

etiology. Therefore for the most part the examining bodies decreed that while materia medica was to be done away with for all intents and purposes, therapeutics was to be given a later place in the medical curriculum. Of this arrangement we do not complain, but there is some fear that the reform in the matter of materia medica has been carried a little too far. We would by no means return to the former methods of teaching materia medica. With the enormous strain that at present exists on the time and attention of the student of medicine it is hopeless to attempt the reimposition of such a dead-weight as was the old materia medica. But there is a middle course. We consider it would often be good for the student to have a wider knowledge of the substances he employs. It would give him a more exact idea of what he prescribes; it would free him from over-dictation at the hands of the pharmaceutical chemist. Medical men owe a vast debt to the products of the research, skill, and care which characterise so much of modern pharmacy, but it is not rare for the pharmacist to step beyond his rightful domain and to attempt to indicate to the prescriber what and how he should prescribe. We have no special wish to conserve the use of Latin in prescriptions, though it may ensure a prescription being understood and correctly compounded in every quarter of the globe, but a student at his qualifying examination should be able to write an intelligible prescription at least in English, containing the drugs suited for the effect which he wishes to obtain and so compounded that they are fit for administration. This is no unreasonable demand, and yet all who have to examine students for their final examinations will agree that the average medical student at the end of his course is frequently unable to write a prescription free from faults.

LONDON COWS FOR LONDON NURSERIES.

THE trouble of obtaining pure milk in London, especially when it is for the purpose of the feeding of infants, is so great that any attempts to improve the actual unsatisfactory state of affairs deserve notice. The fundamental difficulty in the matter is that the milk has to come from a distance, sometimes from quite a long distance, and from districts where the control exercised at the farm may be insufficient. It is apt, moreover, to deteriorate during the journey from causes to the enumeration of which we have devoted considerable space at different times. How can these things be avoided? Obviously by having cows in London, but London has not been constructed to embrace farm-lands in her boundaries. And cows, especially during the milder months of the year, should be out in the fields. Also, the safest place to milk a cow is in the open air. But it has been demonstrated in more than one city by numerous analyses that milk obtained from the well-controlled, stall-fed cows kept in town stables is actually purer than that which has been derived from the inefficiently controlled country farms. Thus the inferior system, rigorously and properly carried out, gives better results than the superior system carelessly and improperly applied. An attempt to carry on a small dairy farm in the heart of London has consequently attracted our attention, and recently we paid a surprise visit to the establishment of Mr. E. J. Walker, a dairyman in Sloane-street, who keeps his milch cows in stalls in Church-street, Chelsea. Mr. Walker stated that he only bought cows that have been through the tuberculin test and after their third or fourth calf, as this is considered the best milking time. The stalls in Chelsea we found clean and free from odour, while the cows were obviously in good physical health and condition. The great point is that these cows are milked from 4.30 to 6 in the morning. In ten minutes the milk is conveyed from the stable to the depôt in Sloane-street, where it is filtered and placed in sealed bottles. By 7 o'clock it is at the consumer's house. But it is no easy matter to keep cows in London. Not only is the space for stables difficult to find and the rents are almost prohibitive, but the cost of food is about doubled, the same holding good for hay. In such circumstances pure milk from a town stable must be much dearer. The ordinary West-end price for milk is 4*d.* per quart. The charge for fresh-drawn milk from the stall-fed cow, delivered in sealed, sterilised glass bottles is 6*d.* per quart, though when it is a question of feeding infants the extra cost may be an economy. Does the question arise practically whether it would be good to encourage the establishment on a large scale of model cowsheds or stables for the production of nursery milk? Such stables would have a milking-room attached where the milkmaid, in a spotless overall and with specially washed hands, would milk the cow, away from stable dust, into a sterilised and cooled pail, while the fullest sanitary control could be exercised over the milk in its transit from the London cow to the London nursery. Our view is that anything like the formation of many such establishments in London would be impossible. It may require a very long time to reform and satisfactorily control all the country farms that send milk to London, but this can be done. The establishment of stall-fed cows inside London to meet even a fraction of the nursery demand would be impossible. Here and there, however, enterprising people like Mr. Walker may succeed in providing what must be a luxury.

"KUATSU" AND THE "HEART REFLEX OF ABRAMS."

"KUATSU" is the method empirically practised by Japanese experts in "Jiu-jitsu" for restoring to consciousness those rendered temporarily insensible by any of the orthodox "knock-out" movements. It has been used in addition with success in unconsciousness from other causes, in sunstroke, and in the treatment of the apparently drowned. An interesting paper by Abrams in the *New York Medical Journal* of Oct. 29th attempts to explain the physiological basis on which the treatment rests, and reaffirms its efficacy. There are various ways of performing Kuatsu, that usually seen amongst coolies on board ship in the Far East being to prop the patient up, stand behind him, grasp his head between the hands, and strike his seventh cervical vertebra rhythmically with the operator's right knee. The method, however, used by the Kano school, and sanctioned by the Japanese Government, is to lay the patient prone, with arms extended at right angles to the body, and for the operator to kneel over him and rhythmically strike his seventh cervical spine with the butt of his palm, wrist extended, until consciousness returns. He is then propped up, and his arms worked in a circle, after which he is helped on his feet, and induced with help to walk about in order to stimulate respiration and circulation, it having been found otherwise that he is liable to lapse into unconsciousness again and die. Abrams explains the frequent efficacy of the proceeding by stating that it is the most certain method known of stimulating the heart reflex called after his name. The "heart reflex of Abrams" is a "contraction of the myocardium of varying duration which results when the skin in the precordial region is irritated by stroking, tapping, or friction." The contraction is easily seen by means of the Roentgen rays, and may be mapped out by careful percussion of the area of cardiac dulness. It involves both ventricles, especially the left, after cutaneous irritation, and persists for some little time after the cessation of stimuli in normal hearts and may be present for some hours afterwards in cases

of cardiectasis. Previous injections of pilocarpine increase the sensitiveness of the reflex. Abrams found when X ray photographs were taken before and after one case that without pilocarpine there was a contraction of the shadow outline of from 1 to 2 centimetres, whereas 30 minutes after the injection of a tenth of a grain of pilocarpine on stimulation the shadow contracted from 2 to 7 centimetres. The reflex, he states, can be elicited from various surfaces on the body, but experimentally the most effective site and method, he found, was when the seventh cervical spine was percussed. Exercises and baths will produce the reflex, and to this he attributes the success of the Schott treatment, affirming, however, that "more can be done in a few days by eliciting the heart reflex in cardiac insufficiency" by the Kuatsu method "than by months of the conventional Schott treatment." In cases of acute infective disease with accompanying heart failure he also advocates its use, relating his results with a lady suffering from apical pneumonia, accompanied by heart failure. Late one night he was summoned hastily by her medical attendant and found her cyanotic and pulseless. As a last resort concussion of the seventh cervical spine was resorted to, the fingers of the operator's left hand placed on the patient's spine being struck by the right clenched fist slowly and steadily for ten minutes. The cyanosis gradually went and slowly the pulse became perceptible. At intervals of two hours throughout the night the process was repeated and each time the cyanosis became less and the pulse stronger. Eventually she recovered. The spine of the seventh cervical vertebra corresponds to the third dorsal segment of the cord and to the third dorsal nerve which sends a large branch to the inferior cervical ganglion, from which the augmentor fibres of the cardiac plexus are derived. It is probably stimulation of these, and not of the vagus as Abrams suggests, that increases the force of cardiac contraction and tonicity. Experimentally, concussion with a small hammer has been found the most effective method; and it seems probable that, after all, the habit of smacking coughing cyanotic people on the back may have physiological as well as time immemorial sanction.

THE TARRED ROAD.

THERE is a suspicion in not a few minds that the tarred road is prejudicial to health. Tar gives off, it is asserted, especially under the influence of the warm rays of the sun, peculiar empyreumatic substances which irritate the respiratory tract at some point or another. We are not disposed to accept that any really serious cases based upon this theory have arisen. If they have, the slight mischief can have been only transitory, since very soon the tar forms with the dust of the road a firm surface in which, apparently, the tar constituents are permanently fixed. There seems to be some reason for thinking that there is a kind of chemical affinity between the ordinary material of the roads and tar, for after a few months the two seem to set in a way recalling the hardening of asphalte, the granite stones can then be loosened only with some difficulty and the dust is bound. It may be conceded that the process of tarring the road gives rise to inconvenience, and here and there it may cause irritation to the nasal passages and throat, but as soon as the surface mass has set we are confident that no complaint on grounds of prejudice to health can be fairly levelled against the innovation. On the other hand, there can be little question that the matured, firm combination of tar, stones, and dust is being widely appreciated wherever the method has been adopted. The only objection we have heard of is that the firm tarred road is objectionable to horses, which show signs of fatigue very much sooner on the hardened surface than on the ordinary road, the material of which, of course, yields to some extent to foot pressure. We can appreciate this objection, but possibly a remedy for this could be found in a modified form of shoe for the horse. The motor will not so rapidly displace the horse that a palliative of the kind suggested needs no serious consideration. On general sanitary grounds the tarred road, when efficiently done, has everything in its favour. It presents a surface practically proof against the soakage and accumulation of offensive matters; it is washed clean by the rain, and surface drainage into the gutters and gullies is more effective provided the surface is even. These are very important considerations, having regard to the pathogenic possibilities of road dumpings. While, therefore, the primary object of the tarred road was the prevention of the dust nuisance, the process has improved the conditions of our highways in other important sanitary directions. Lastly, the method is preserving the surfaces, it keeps the binding material, the dust, to the road, and prevents its reduction to a layer of grit glistening with sharp, flinty particles, which often tempted the cyclist to say ugly things of the motor. The cyclist is rapidly appreciating the tarred road; he finds in it a smooth, practically frictionless, surface to run over, and the chances of a puncture are considerably reduced.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST.

AT the festival dinner of the City of London Hospital for Diseases of the Chest, which was held at the Trocadéro Restaurant on Nov. 10th, the Hon. Walter Rothschild, who presided, entered a strong plea for increased financial support which is urgently required if the hospital is to keep its beds in full use. The chairman pointed out that less than 15 years ago the fortunes of the hospital had sunk very low and more than half the beds had to be closed. Owing, however, to the untiring energy of everyone connected with the hospital all the 170 beds were now occupied. This desirable state of things had only existed for one year, and the committee had been greatly encouraged in their efforts on behalf of the hospital by a gift of £4000 from the King Edward Hospital Fund. Hospitals had to live on their current income, and so long as people believed that it was only necessary to give a good sum of money at a hospital dinner so long would hospitals continue in an unstable position, but he hoped that the time would come when the charitable public would realise that the better plan was to endow hospitals. A remarkable feature in connexion with the hospital was the large number of working-men's societies which contributed more than £1000 a year. A matter which called for the earnest attention of all those who wished the work of the institution to be carried out in the best possible way was the provision of a sanatorium. It was not fair to the medical staff that after they had given unremitting care to a patient in the hospital the treatment should be nullified because there was no sanatorium where it could be continued for a few weeks with the object of completing the cure. Dr. George A. Heron endorsed the plea for a sanatorium, hoping that everyone who had the welfare of our consumptive poor at heart would see that a hospital like the one for which he was pleading, in the very centre of the East-end of London, should no longer remain without the sanatorium which it so greatly needed. It was hypocrisy, he said, to tell a poor patient to go to his own home and continue the hospital treatment, while the most dangerous class of consumptives were those who were unable to get continuous treatment, because they carried infection to other classes. Dr. T. Glover Lyon also emphasised the necessity for a sanatorium. In the course of the evening the secretary read a list of subscriptions amounting to £2617.

The contributions from various working-men's societies ranged from 30 to 200 guineas.

THE MEDICAL PROFESSION AND MUNICIPAL HONOURS.

THE following members of the medical profession have been elected or re-elected to the mayoral chair:—*Faversham*, Mr. S. R. Alexander, M.D. Lond., M.R.C.S. Eng., L.S.A.; *Hartlepool*, Mr. W. Scott Gibb, M.B., C.M. Edin.; *Montgomery*, Mr. N. W. Fairles-Humphreys, M.R.C.S. Eng., L.S.A. (re-elected); *Newark*, Mr. F. H. Appleby, M.R.C.S. Eng., L.S.A. (re-elected); *Oswestry*, Mr. R. de la Poer Beresford, M.D. Glasg., L.R.C.P., L.R.C.S. Edin., L.R.C.P. Lond. (re-elected); *Ruthin*, Mr. T. Owen Jones, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg. (re-elected); *Saffron Walden*, Mr. J. P. Atkinson, M.D. Glasg., L.R.C.P. Lond., L.R.C.S. Edin.; *Warrington*, Mr. G. W. Joseph, M.D. Durh., L.R.C.P. Irel., M.R.C.S. Eng; *Wrexham*, Mr. S. Edwards Jones, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg.

PNEUMOCOCCIC POLYARTHRITIS RESEMBLING RHEUMATIC FEVER.

PNEUMOCOCCIC arthritis has been rarely observed in this country, and has been principally investigated by continental writers. The first case recorded in England was published in our columns by Dr. E. J. Cave.[1] In adults the condition usually occurs in association with pneumonia, but in children it frequently occurs apart from the latter. Like many supposed rarities, pneumococcic arthritis is probably not so rare as its records might lead one to suppose, and would be more often observed if looked for. This is borne out by the fact that within the last two years no fewer than five fatal cases of pneumococcic polyarthritis have been under the care of Dr. Finley in the Montreal General Hospital. They are recorded in the October number of the *Montreal Medical Journal* by Dr. A. H. MacCordick, of the Pathological Laboratory, who calls attention to their resemblance to rheumatic fever. In all the diagnosis was proved bacteriologically. It is interesting that in four of the cases there was a previous history of rheumatic fever and in the remaining one of chorea In the first case, a girl, aged 16 years, was admitted on Oct. 8th, 1908, complaining of pain in the left shoulder and in the ankles. In childhood she had whooping-cough and measles. At the age of seven years she was in the hospital for two months with rheumatic fever involving the knee- and ankle-joints. At the age of 14 years she was again admitted with rheumatic fever and pneumonia. At the age of 15 years she was two months in the hospital with rheumatism of the left elbow and knee, and right ankle and knee. There was a mitral systolic murmur. Recovery took place under salicylates. During the summer before her present illness her feet and ankles were occasionally swollen and painful. Her illness began on Oct. 4th with pain in the left foot. On the following day this foot was better, but the right was involved. Three days later the left shoulder became very painful. The pain in the joints was of a sharp stabbing character and was felt only on movement. She vomited several times daily and perspired freely at night. On admission she was somewhat anæmic and drowsy. The temperature was 100·4° F. and the pulse 112. There was a diffuse cardiac impulse and the cardiac dulness extended to the second rib and 3 centimetres to the right and 13 centimetres to the left of the middle line. The first sound was replaced by a blowing murmur. The left shoulder and both ankles were very painful on movement, but were not swollen. The red corpuscles numbered 3,546,000 per cubic millimetre. On the 9th the pain in the joints was less, but there was severe pain in the præcordium, where a to-and-fro friction rub was heard. The temperature ranged from 98° to 102°. On the 11th there were signs of double pleural effusion. On the 13th the pulse was very feeble and small and she sank and died. At the necropsy 500 cubic centimetres of clear fluid were found in the peritoneal cavity, and 100 cubic centimetres of brownish fluid in the left pleural cavity. The pericardium contained about 50 cubic centimetres of brownish turbid fluid. The visceral and parietal layers were firmly adherent by a greyish fibrinous exudate. The heart weighed 375 grammes. The mitral valve was sclerosed and contracted and on its edges were a few small reddish vegetations. There was well-marked acute nephritis. The left shoulder-joint contained a little slightly turbid fluid, but the synovial membrane was smooth and glistening. Cultures made from the heart's blood, the pericardium, and the shoulder joint showed the pneumococcus. In the second case a girl, aged 16 years, was admitted on Feb. 27th, 1909, complaining of pain in the chest. She had been previously admitted three times for rheumatic fever. Her illness began on the 22nd, when the left ankle became swollen, red, and tender and painful on movement. On the following day pain in the chest began. In a day or two the ankle was better, but the pain in the chest continued. On admission the temperature was 101·4° F. and the pulse 120 and small. The præcordium slightly bulged. The cardiac impulse was in the left fifth and sixth spaces, 10 centimetres from the middle line. There were a mitral systolic murmur and frequent hacking cough, with little expectoration. Subcrepitant râles were heard at both bases and there was dulness below the left ninth rib. On March 2nd the lips and finger-nails were cyanosed, the face was pale, and the extremities were cold. She occasionally expectorated a little tenacious bloody sputum. There were occasional spasms of præcordial pain. Fine crepitations were heard all over the chest and there was some œdema of the ankles. She became weaker and died on the 4th. The necropsy showed left lobar pneumonia, chronic fibrinous pericarditis, and acute and chronic endocarditis. The synovial membrane of the left ankle-joint was normal, but the fluid in it, which was only sufficient to moisten a swab, as well as the heart's blood and the pericardium, showed on culture the pneumococcus. In four of the cases (including the two which have been related) the arthritis preceded other affections by an average period of about six days; in the remaining case it occurred three days after the onset of pneumonia. Lobar pneumonia was present in one case and bronchopneumonia in two cases. The patients were all females, and excepting one, aged 39 years, were children from the age of 14 to 16 years.

[1] THE LANCET, Jan. 12th, 1901, p. 82.

INVERSION OF THE RADIAL REFLEX.

UNDER the name of "Inversion of the Radial Reflex," M. Babinski, who is so well known by his eponymic plantar reflex, has added another pathological reflex to clinical medicine. At a meeting of the Société Médicale des Hôpitaux of Paris on Oct. 14th he reported this discovery. In the normal state percussion of the lower end of the radius usually produces simple flexion of the forearm on the arm. If the reflexes of the upper limb are strong other movements, particularly flexion of the fingers, may accompany flexion of the forearm. This generally occurs in hemiplegia of cerebral origin. But in health percussion of the radius never causes flexion of the fingers alone. This "inversion of the radial reflex" M. Babinski has found in certain diseases of the cervical cord—syringomyelia and tumour—but never in lesions of other parts. He has not had an opportunity of performing a necropsy in any case, but physiological data show

clearly where the lesion must be situated. The centre for the reflex of flexion of the forearm on the arm is situated in the fifth cervical segment, while that for flexion of the fingers is situated in the eighth cervical segment. The conclusion is obvious that inversion of the radial reflex is due to a lesion of the fifth cervical segment. In such a lesion reflex flexion of the forearm on the arm could be abolished, and if the lesion extended to the pyramidal tracts reflex flexion of the digits would be increased. M. Babinski admits that the same phenomenon could be produced by a limited lesion of the peripheral nerves, but he has no experience of a lesion of this kind, and if it occurs he thinks it must be exceptional. From his observations he draws the conclusion that inversion of the radial reflex constitutes a sign which by itself alone allows a lesion of the cervical cord to be affirmed, and points to its exact localisation.

THE SUPPRESSION OF RABIES IN PARIS.

THE report for the year 1909 of the Veterinary Sanitary Service of Paris and the Department of the Seine has just been issued. It is a big book, and as usual contains a great mass of detail concerning the prevalence of various diseases among cattle and animals of all sorts. The control of abattoirs and meat markets, the transport of fish and milk, in a word, some of the most important matters in the food-supply of the city come under notice. Of the various chapters, the first is in some ways the most interesting. It contains a history of the struggle to suppress rabies, which is still relatively widespread in France. This is all the more serious as there are more dogs in France than in most countries. Thus it appears that per 1000 inhabitants there are 75 dogs in France and only 38 in England, 31 in Germany, and 11 in Sweden. In England and Sweden rabies has been stamped out, and it is very rare in Germany. Dr. H. Martel, Chief of the Veterinary Service and author of the report, considers that the most useful measure is to destroy all stray dogs. This of late years has been done rigorously in Paris and the surrounding department of the Seine, but not so in the other departments or counties of France. Thus in the Seine, which includes Paris, there were 807 cases of rabies among dogs in 1900, and 1964 in the other departments. There had been 9691 dogs captured the previous year. In 1900 more than 12,000 were taken, and the following years the number of captures amounted to 16,298, 16,856, 14,665, and 15,251. This brings us to the year 1904. The result is that in 1901 there were 846 cases of rabies in the department of the Seine, and 1872 in the other departments; in 1902 the figures were respectively 474 and 1852; in 1903 there was a further fall to 179, while the figure for the departments rose to 2184. In 1904 and 1905 the figures for the departments were 2221 and 2248, while for the department of the Seine they were only 172 and 120. The decrease has continued, and in 1906 the number was 74, in 1907 only 43, in 1908 it was 37, and finally last year only 13 cases of rabies were reported, where at the beginning of the decade there had been more than 800. Surely this is a notable achievement. In the departments during the last four years there are signs of improvement, the figures having fallen to 1971, 1849, 1445 and 1450 for the four years in question. The amelioration achieved in the department of the Seine is set forth in another manner. In 1901 the tax was paid for 140,000 dogs, so that the proportion of cases of rabies was 0·604 per cent. of dogs taxed. In 1909 the tax was paid for 185,000 dogs, and as there were only 13 cases of rabies, this was equal to 0·007 per cent. Again, if we take the first five years of the decade—namely, 1900 to 1904—there were altogether during this time 2478 cases of rabies in the department of the Seine; while during the second five years, 1905 to 1909, there were only 287 cases. These figures are based on the notifications made by veterinary surgeons as the result of diagnosis or of post-mortem examination. In the former case errors sometimes occur. There is a tendency to be on the safe side and declare a dog to be mad so that it should be destroyed when after all it was not affected by rabies. As far as possible these declarations have been checked by post-mortem examinations or by inoculations, but this could not always be done. If only the cases proved genuine at the Pasteur Institute were counted the figures would be reduced by more than half, but the falling-off in the number of cases from year to year would be in the same proportion as that shown by the figures given above. Obviously the best protective for human beings is to keep the dogs healthy. This does not prevent persons who are bitten by perfectly healthy dogs from hastening to the Pasteur Institute to undergo the antirabic treatment. Therefore the number of patients treated does not represent the number of *bonâ-fide* cases of rabies among dogs. Nevertheless, there has been a great reduction of patients, though doubtless dogs are just as apt to snap and bite as in the past. At the Pasteur Institute 637 patients underwent the antirabic treatment in 1900 and 623 in 1901. In 1909 the number of persons treated because they had been bitten by dogs that might possibly be suffering from rabies was only 105. As for human cases of rabies these are extremely rare in the department of the Seine, the last one observed dating back to the year 1905. Formerly they were relatively frequent. Dr. Martel insists that the great improvement brought about is due to care taken, when a case of rabies occurs, to destroy not merely the mad dog, but further to destroy, or in any case to closely observe, all the other dogs it may have infected. As, however, this can rarely be done in complete manner, obviously the most effective measure is the capture of all stray dogs.

THE DISPENSING OF MEDICINES.

ATTENTION has been directed by a correspondent to a report of an address delivered by Mr. Richard Winfrey, M.P., whose name appears on the Register of Chemists and Druggists, at a meeting of the Public Pharmacists and Dispensers Association, in the course of which he said that: (1) authorities appointing dispensers to public institutions should be made to understand the difference between a man who had passed the minor examination of the Pharmaceutical Society and one who had merely passed the Apothecaries' Hall assistants' examination; and (2) the knowledge of pharmacy possessed by the ordinary medical practitioner is very slight indeed, and medical practitioners should not be allowed to dispense their own medicines under their present qualifications. With regard to the first point, it is not disputed by anyone competent to judge that the diploma granted by the Pharmaceutical Society is of greater value than that granted to assistants by the Apothecaries' Society, and there are, we should imagine, few authorities responsible for the appointment of dispensers who are not aware of the fact. The possessor of the superior qualification, however, expects quite naturally higher remuneration for his services than does the holder of the assistant's certificate, and very often for that reason vacancies are filled in some institutions by the appointment of dispensers with the latter qualification. In all the great London hospitals and in the majority of the larger provincial hospitals the dispensers appointed are qualified under the Pharmacy Act, and the same rule applies in many of the smaller institutions. In other cases the dispensing is done by holders of the Hall certificate under medical responsibility or by local chemists. In every lunatic asylum under the control of the London County Council in which a

dispenser is employed the dispenser holds the qualification of the Pharmaceutical Society. The appointment of Poor-law dispensers is subject to the approval of the Local Government Board, whose regulations require the person appointed to possess one of the following qualifications: (1) the Licence of the Society of Apothecaries; (2) the assistant's certificate of the Society of Apothecaries; (3) registration as an army compounder, R.A.M.C.; (4) registration under the Pharmacy Act, 1868; and (5) registration as a pharmaceutical chemist of Ireland. It is hardly necessary to point out that those applicants who hold the highest qualification usually obtain the appointments when vacancies occur. The second point raised by Mr. Winfrey involves a question of considerable difficulty; for obvious reasons it is quite impracticable for every medical practitioner to employ a dispenser and, under existing conditions, a very large proportion of medical practitioners could not possibly refuse to dispense medicines. If they did so there would be no one else to do the work. At the present time a joint committee of medical practitioners and pharmacists is considering whether it is possible to make any recommendations with regard to this very question. The committee is composed of ten medical practitioners appointed at the last annual meeting of the British Medical Association and ten pharmacists appointed at the last meeting of the British Pharmaceutical Conference, and if it is able to put forward reasonable suggestions as to how medical practitioners can be relieved of what the physicians of two centuries ago described as a "servile and laborious business" the profession will not be ungrateful. But for the present the medical profession must continue to dispense medicines, and, as we point out elsewhere this week, those responsible for the education of our medical students should see that they are duly educated to this end.

THE DRUG TREATMENT OF PULMONARY TUBERCULOSIS.

So much interest has of late years been centred round the sanatorium treatment of pulmonary tuberculosis, and still more recently round the use of tuberculin, that the use of drugs in this disease has received but comparatively little attention. In the present number of THE LANCET we publish two communications on the results obtained by the employment of potassium bichromate in the one instance, and of continuous antiseptic inhalations in the other. Dr. James B. Tombleson publishes six cases treated by potassium bichromate. The cases all exhibited advanced disease, nevertheless the results were uniformly good. This is certainly remarkable and indicates that further trial might be made by other observers. The method has the advantage of simplicity. The drug is given in doses of ¼ gr. (2½ minims of a 10 per cent. solution in water), either alone or in combination with a tonic mixture, such dose to be taken in a wineglass of water after food, at first twice and later three times a day. Dr. David B. Lees advocates the employment of continuous antiseptic inhalations. He has previously published the results in 30 cases of incipient or early pulmonary tuberculosis in which the treatment had been employed with success. He now gives the further progress of these cases and shows that they continued to progress favourably. In his present article he reports 20 more cases in which the same method of treatment has been used. Some of these patients came under observation at a much later stage of the disease, nevertheless the results were all favourable. As Dr. Lees remarks, however, when the more advanced stages are reached recovery must be comparatively slow and the final issue may be doubtful. He strongly insists that pulmonary tuberculosis is recognisable and ought to be discovered before there is any breaking down of lung tissue, and adds: "To suspend the diagnosis until tubercle bacilli are detected in the sputum is like delaying the diagnosis of cancer until the glands are involved." Undoubtedly the earlier treatment is commenced in cases of pulmonary tuberculosis the better the prognosis, but it is difficult definitely to appraise the value of any treatment until the diagnosis of the disease has been absolutely confirmed by bacteriological evidence. There is always a possibility of doubt that active tuberculosis was not present. Dr. Lees's method of treatment should be extensively tried, for his results are decidedly encouraging, and the fact that relief can be obtained in other than very early cases is a stimulant for further observations to be made. In THE LANCET of Nov. 12th we published an article by Mr. J. McElroy on the treatment of pulmonary tuberculosis by intravenous injections of chinosol with formaldehyde. He recorded three cases in which this method was adopted, and in which satisfactory results were obtained, but the number of cases is, of course, too small to form a judgment upon. These several therapeutic measures might be further tried in those cases in which, for various reasons, sanatorium or vaccine treatment cannot be adopted. It would be interesting to know whether other physicians obtain the same results as those who have recorded their cases in our columns.

THE MARKING OF IMPORTED MEAT.

THE Local Government Board has recently issued a circular addressed to medical officers and sanitary authorities calling attention to the description of a brand and labels which are declared to be admissible as "official certificates" in respect of pork and other edible portions of the pig which have been subjected to inspection in the State of Queensland. The labels, facsimiles of which are reproduced in the circular, are regarded as evidence that the pig has been certified by a competent authority in the place of origin to be free from disease at the time of slaughter. The labels are taken to convey also that the meat has been certified by the like authority to have been dressed or prepared, and packed with the needful observance of all requirements for the prevention of danger arising to public health from the meat as an article of food. The Local Government Board takes the opportunity afforded by the issue of the circular of pointing out that difficulty has been experienced in some cases in extracting from the annual reports of medical officers of health certain details which the Board desires as to quantities of food materials condemned at the ports. In some of the annual reports the required facts are given with considerable fulness, but in others, although much useful information is set out in regard to this matter, details are not recorded in a form which enables them to be properly classified. The circular contains a category of the foods concerned and the kind of particulars which should be given.

PLAGUE AND THE DESTRUCTION OF RATS.

THE Local Government Board, in consequence of cases of plague in rats in certain parts of England, has deemed it desirable to confer upon local authorities in England and Wales powers with regard to the destruction of rats in districts where plague in rats is present or suspected, or in which there is an unusual mortality among rats. The Board has accordingly issued an Order authorising the local authority to take measures for the destruction of rats and for preventing their entrance into buildings and any premises. Inasmuch as the risk of infection from plague-stricken rats arises mainly through fleas, it is obviously to the interest of all persons to do what they can to prevent contamination of their dwellings and to remove from the proximity of dwellings

accumulations of material or rubbish which may harbour rats or their parasites. A memorandum on plague has been prepared by the Board's medical officer and is now issued, and the Board has arranged for bacteriological testing of material from the earliest suspected case or cases of plague or from the earliest suspected rodents in any district. This material can be received by the Board only from the medical officer of health.

PARLIAMENT reassembled on Tuesday, Nov. 15th, but in the present state of public affairs it is fairly certain that no medical questions will be considered.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on Nov. 10th, Mr. BUTLIN, the President, being in the chair.

In accordance with a report from the Court of Examiners Diplomas of Membership were granted to 66 successful candidates and Licences in Dental Surgery were issued to five successful candidates.

The Council accepted the tender of Messrs. Holland and Hannen for the building of the Examination Hall in Queen's-square.

A letter was read from Mrs. Langton thanking the Council for their resolution of sympathy on the death of her husband.

The PRESIDENT reported that the Bradshaw Lecture would be delivered by Sir A. Pearce Gould, K.C.V.O., on Wednesday, Dec. 7th, at 5 P.M., and that the subject of the lecture would be Cancer.

The PRESIDENT reported that Mr. Bruce Clarke's period of office on the Court of Examiners would expire in December next, and that the vacancy thus occasioned would be filled at the ordinary meeting of the Council on Dec. 8th.

The SECRETARY reported the delivery of three Museum demonstrations by Dr. Arthur Keith and three by Mr. S. G. Shattock.

A vote of thanks was accorded to Mr. Lockwood for a gift of books.

WOMAN SUFFRAGE: THE CONCILIATION BILL.

THE following memorial was sent to the Prime Minister on Nov. 14th, 1910, signed by 407 medical women:—

We the undersigned medical practitioners desire to urge the Government to grant immediate facilities for the further stages of the Conciliation Committee's Bill for Woman Suffrage.

In a Memorial which 538 medical women had the honour to present to you in November, 1908, their unanimity on the question of woman suffrage was clearly shown.

As members of the medical profession women conform to all regulations imposed upon candidates for medical degrees, and they undertake responsible public and private work which is fully recognised by the State. It is manifestly inexpedient that, on the ground of sex alone, they should be unable to influence legislation on questions about which their special knowledge particularly fits them to hold an opinion.

Moreover, as taxpayers, women practitioners feel strongly that their exclusion from all voice in the election of Parliamentary representation is inconsistent with the first principles of democracy, viz., that Government rests on the consent of the governed, and that those who pay the taxes should have a voice as to how the taxes are spent.

The justice of the claim made by women for the parliamentary vote has been admitted by large majorities in the House of Commons on many occasions.

We urge that the dignity of the House of Commons will be diminished if it fails to put its principles into practice. We ask that time may be given to allow the present House of Commons to carry through the final stages of the Conciliation Bill, which has already passed its second reading by a majority of 110 votes and which proposes to extend the Parliamentary franchise to those women who are already on the municipal register.

The majority of medical women, as householders, would be enfranchised by the Bill.

TORQUAY NURSES' INSTITUTION.—As a result of the fête recently held at the Princess Gardens the sum of £280 has been raised for the Torquay Nurses' Institution.

THE LONDON COUNTY COUNCIL AND MEDICAL AFFAIRS.

Board of Education and Accommodation for Defective Children.

THE Board of Education, in granting for a limited period an application by the London County Council for recognition of a temporary building as a school for mentally defective children, has intimated that it strongly deprecates makeshift arrangements for providing education for defective children in London, and urges the Council to proceed with all possible despatch to complete the survey of accommodation. The survey should include schools for physically defective, as during the year ended March, 1909, 11 schools for mentally defective and 11 for physically defective children were seriously overcrowded, deductions having to be made from the grant on this account. Similarly during the year ended March, 1910, so far as the review of claims for grant had gone, seven schools for mentally defective and 11 for physically defective children had been found to be overcrowded and the grant had been reduced in some cases. The Board hoped the Council would take steps to put matters on a satisfactory footing without delay.

The Education Committee, in reply, stated in a report presented to the Council on Nov. 15th, that a survey of the accommodation for mentally defective children had been made, and proposals for providing 705 additional places to meet immediate needs had been submitted to the Finance Committee. That committee suggested that the first question to decide was the principle involved in the provision of additional permanent accommodation for mentally defective children pending the result of the deliberations on the report of the Royal Commission on the Care and Control of the Feeble-minded—still under the consideration of the General Purposes Committee. In the circumstances the Finance Committee had adjourned the consideration of the Education Committee's proposals.

Administration of the Provision of Meals Act.

The Board of Education has asked for a return with regard to the administration of the Education (Provision of Meals) Act, 1906, and for the observations of the Council on the following points: (1) The extent to which the provision of meals has appreciably increased the ability of children to take full advantage of the education provided; and (2) the extent to which the conduct and manners of the children have benefited under the discipline employed. The Board stated that it attached great importance to the close association of the work done under the Act with the work of the school medical service, and desired to be fully informed of the arrangements for securing coöperation between the school medical officer and the care committees and their officers, and in respect of the recommendation and selection of children, the regulation of the dietary, and the observation of the physical and hygienic results attributable to the meals.

The Education Committee suggested that a reply should be sent to the Board stating that the general appearance of the average necessitous child had been improved by the supply of school meals. To arrive at any estimate of the comparative ability of children was difficult, however, as under the Council's scheme children were not allowed, except during holidays, to remain unprovided with food. With a view to educating the children to be well-behaved, a list of rules of conduct had been drawn up. Where voluntary supervision was not forthcoming paid supervisors were to be employed. As to the nutrition of children there could be no absolute standard. Necessitous children were not necessarily ill-nourished at the time of application for aid, nor did they always need medical inspection. Malnutrition might be due to the absence of suitable food, or to such home conditions as overcrowding, lack of sunlight and insufficient sleep, which contributed to produce the typical appearance of a necessitous child. Consequently the care committees relied to a great extent upon the circumstances of a family as revealed by investigation. No hard-and-fast rule as to "necessity" had been adopted, so varying were the circumstances that almost every case had to be considered on its individual merits. In some cases the child remained ill-nourished although sufficient food seemed to be available. This might be due to insufficient building up of the tissues

either from unsuitable food or from lack of power to digest food—as in cases of bad teeth or indigestion. Other causes were: partaking of materials hindering digestion—strong tea for instance—or lack of power to assimilate food, as in cases of chronic irritation or tuberculosis of the lymphatic system. Excessive breaking down of the tissues occurring in conditions of nervous irritability, such as accompanied insufficient sleep, the attacks of vermin, chronic fatigue and overwork, and constant, though perhaps slight, febrile illnesses, also led to children having an ill-nourished appearance. Such cases came within the purview of the school doctor. There was always coöperation between the public health department and the education service through the medium of the teacher. The records of the school medical inspections were always at the disposal of head teachers and care committees, and were consulted when children were selected to receive meals. The head teacher indicated to the school doctor the children who appeared to be in need of special treatment, and the school doctors, on the other hand, often recommended inquiries into the home circumstances of individual children. In cases of delicate or anæmic children a dietary of milk or cod-liver oil was recommended by the school doctor, and if the case was approved this was supplied at the Council's expense. The *menus* for the school meals had been drawn up in consultation with the school medical officer.

Premiums on Pauperism.

A naïve request has been made to the London County Council by the Hampstead board of guardians, whose clerk wrote in the following terms:—

> The officers of the guardians take considerable care to inquire into the ability of relatives to support inmates of the asylums, and the collector of the guardians is paid by commission upon the amounts that he collects. The practice of your Council to take over any case where the relatives are found to be able to pay the full amount of cost of maintenance deprives the collector of his commission on the amounts so collected. Would it not be possible for the County Council to make provision for the payment of commission in such cases?

The request of the guardians, as the Asylums Committee pointed out to the London County Council on Nov. 15th, means practically that in order that the parish collector may draw his commissions, asylum patients, the cost of whose maintenance is not borne by any public authority, shall remain under the stigma of pauperism. For, so long as the payment for a patient's maintenance is made to the County Council by a board of guardians—no matter if the whole cost is recovered by the guardians—that patient remains a pauper. If, however, the expenses of maintenance are paid directly to the asylum without the intervention of a board of guardians, the patient ceases to be "chargeable to a union," and is classified as a private patient. It is the duty of the County Council to inquire as to the means of patients and to classify them as "private" if they are so entitled. Readers will find in the case of Regina *v.* Jones, *re* Stennett, a decision bearing on this point. The Council, not unnaturally, decided that it could not grant the Hampstead parish collector a commission on work he no longer performed.

Recovery of Cost of Dental Treatment.

An experimental scheme for the recovery from parents of the cost of dental treatment came before the Education Committee at its meeting last week, but was withdrawn by the chairman of the subcommittee concerned. The subcommittee remarked that in fixing a charge for dental treatment it had to be borne in mind that unless there was actual suffering parents generally did not recognise at present the need for treatment. The obligation the council was under to make a charge might militate against dental treatment being obtained, and until the importance of dental treatment was more widely recognised it was desirable that the inducements for obtaining it should be as great as possible. The subcommittee thought that as an experiment the following inclusive charges should be made: 2*s.* 6*d.* for the complete treatment of the mouth where stoppings were included; 1*s.* 6*d.* where the treatment consisted of extractions under gas; and 6*d.* for simple extractions. Where more than one child in a family required dental treatment half the amount charged for the first child should be charged for each additional child, provided the net family income was 25*s.* or under. Legal proceedings to enforce payment would not be taken where the net income fell below 17*s.* 6*d.* a week, and in the case of incomes below 30*s.* remissions would be made according to circumstances.

THE CHOLERA EPIDEMIC.

(BY THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

Cholera in Russia.

SINCE the date of my last letter on this subject (which appeared in THE LANCET of Oct. 15th, p. 1160) there has been a continued decline in the epidemic of cholera in Russia. I give below the "corrected" figures for the last three weeks (August 15th to Sept. 4th, Old Style), for which "uncorrected" figures were given in that letter:—

Week ending August 21st ...	13,330	cases,	6,187	deaths.
,, ,, ,, 28th ...	9,962	,,	4,924	,,
,, ,, Sept. 4th ...	5,895	,,	2,853	,,

Since then the "uncorrected" figures for four weeks have become available. They are as follows:—

Week ending Sept. 11th ...	3038	cases,	1474	deaths.
,, ,, ,, 18th ...	2104	,,	1087	,,
,, ,, ,, 25th ...	1677	,,	858	,,
,, ,, Oct. 2nd ...	679	,,	353	,,

(The above dates are all according to the Old Style.) During these seven weeks the epidemic has been most active in the governments of Samara, Saratof, and Voronezh in the Volga valley; in those of Kief and Ekaterinoslav; in the province of the Terek and the governments of Tiflis, Daghestan, and Erivan in the Caucasus and Transcaucasia; in the Don Territory; and in the Orenburg government. It may be noted that the single cases formerly reported from the governments of Archangel, Olonetz, and Pskof have been succeeded by several others, though the totals for these governments still remain very low. In Reval, also, some further cases have occurred, and Riga (whence only 2 cases had been reported) has been the scene of a small epidemic. For Finland also the former total of 2 cases has now risen to 4. The Baltic province of Courland has appeared for the first time in the lists, but with very few cases. In Central Asia and Siberia all the governments and provinces formerly mentioned are still included in the returns; and, in addition, the disease has appeared in the government of Semipalatinsk, in the province of Ferghana (beyond Samarkand), and in the Far East provinces of Transbaikalia and the Amur. In each of these some scores of cases of the disease have been recorded. It will be seen, therefore, that practically the whole of Asiatic, as of European, Russia has been invaded by the cholera infection. In nearly all parts, however, the latest returns indicate a distinct and steady decline in the numbers of cases and deaths, and with the advent of the cold weather an early extinction of the epidemic may be looked for. It would be idle, however, to pretend that this can be more than a temporary extinction, and a fresh and possibly more severe revival next year must be regarded as highly probable, if not an absolute certainty.

The following observations, relating to the spread of the disease by water, may be quoted from the *Vratch*, in which they appeared at intervals during the last few months. As early as May it was reported that in samples of water taken from the river Dnieper at Kief large numbers of cholera vibrios had been found. The samples were taken from the river close to the intake of the town water-supply. At the same time many cases of cholera were occurring on the rafts plying on the river, as well as in the town. A month later it was stated that the same observer had found cholera bacilli in samples of water taken from streams flowing into the Dnieper in the outskirts of Kief—streams in which, it was added, the people washed, not only their clothes, but also fruit intended for the market. In Tiflis cholera vibrios were detected in the town water-supply (apparently in July), and the rapid spread of the disease there is said to have had all the characteristics of a water-borne epidemic. In Rostof-on-Don the same thing was observed. In Tashkent, in Central Asia, cholera vibrios were found in the irrigation canals which intersect the town. In Vladikavkay, in the northern Caucasus, cholera vibrios were found in the waters of the river Terek. At Biélgorod, in the Kharkof government, the bacilli were found in the waters of the river Donetz, a large tributary of the Don. Finally, in St. Petersburg, in three samples of water taken, on August 14th, 16th, and 17th (Old Style), from the stopcock at the water-works on the south side of the Neva, cholera vibrios

were found in all. Of three samples taken on the same days on the north side of the river bacilli were found in one. Of 22 samples of unfiltered water taken from the wells and tanks at the principal waterworks of the city on the same dates cholera vibrios were found in 9 (or 41 per cent.). Of 59 samples of filtered water taken at the same time from different filters and cisterns 11 (or 19 per cent.) were found to contain cholera vibrios. From another series of experiments it was shown that the filter-beds, as worked in St. Petersburg, only removed about 33 per cent. of the bacteria of all sorts contained in the Neva water. The above experiments were continued; and between August 18th and 23rd (Old Style) out of 23 samples of unfiltered water from the central waterworks, 16 (or 70 per cent.) were found to contain cholera vibrios; and out of 63 samples of filtered water from the same works 20 (or 32 per cent.) were similarly contaminated.

Cholera riots and disorders have been reported from many parts of the country.

Cholera in Germany.

I regret to have made an error in my last letter on this subject in stating that cholera had, up to the date of that letter, appeared in Germany solely at Spandau. As a matter of fact, as early as June 21st a Russian subject fell ill with the disease at Ruhleben, in the Potsdam district (a centre of control for immigrants). The result of a bacteriological examination in this case was positive. Three days later a second case occurred under precisely the same conditions; both patients died. The Spandau cases, already referred to, occurred in the last week in August. No other cases were seen there, though three carriers of bacilli (in addition to the four mentioned in my last letter) were detected. On Sept. 9th a boatman fell ill with cholera at Freiburg (district of Stade). On the 10th a labourer at Copitz, in Saxony, was attacked with the disease. On the 13th a second patient (the son of the above-named boatman) fell ill at Freiburg, and died. On the 13th and 15th there were three cases of the disease at Marienburg, in West Prussia (a shop assistant and two children). In the week ending Sept. 25th there were 5 cases and 2 deaths at Kalthof and Marienburg. On Sept. 22nd a death from cholera occurred at Sommerau, near Altfelde. In the week ending Oct. 2nd 4 more cases were recorded at Marienburg. In that ending Oct. 9th there were apparently 6 cases of the disease among persons under surveillance, as "contacts" of previous cases at Marienburg, and 1 of these died. Cholera bacilli were found in all of them; 2 were women and 4 were children; in addition, 2 children were found to be carriers of bacilli. Finally, for the week ending Oct. 16th no further cases were recorded in Germany.

Cholera in France.

Imported cases only have been seen in France. The ss. *Bosphore* arrived at Marseilles from Constantinople, and on Oct. 1st 3 undoubted cholera cases were isolated from among her passengers. On the 6th a fourth case occurred. There was, however, no spread of the disease to the inhabitants of Marseilles, which was consequently never regarded as an infected port.

Cholera in Austria.

No further cases of cholera have occurred in Vienna, and on Oct. 15th Austria was declared free from the disease as from Sept. 27th.

Cholera in Hungary.

The figures for Hungary were brought down in my last letter to the week ending Sept. 24th. For the following week the figures are wanting. Between Oct. 1st and 8th there were 34 cases with 13 deaths in 24 different places in Hungary; and the totals down to the last-named date were put at 207 cases and 106 deaths. In the week ending Oct. 15th there were 76 further cases and 34 deaths. Finally, on the 17th it was announced that a violent outbreak of the disease had occurred in the commune of Bata, in the province of Tolna, situated "on a branch of the Danube, the waters of which are stagnant," and that 31 cases had already been registered. (It should be added that 23 of these cases were included in the above total of 76 cases for the week ending Oct. 15th.)

Cholera in Italy.

Since the date of my last letter there have been reported, on Sept. 22nd, 12 cases and 2 deaths at Molfetta, 2 cases and 2 deaths at Trinitapoli, and 2 cases at Cerignola; and on the 23rd 6 cases at Molfetta, 2 deaths at Barletta, 1 case at Trinitapoli, and 4 at Cerignola. For the following week the figures are wanting. Between Oct. 1st and 11th 285 cases of cholera with 81 deaths were returned for the whole of Italy. The infected provinces were those of Avellino, Caserta, Bari, Foggia, Naples, Rome, Salerno, and Sassari (in the last-named only 3 cases occurred, on a ship in the quarantine station). In Naples itself as many as 104 cases, with 38 deaths, were recorded, and a long list of infected places in the Naples province appears in the return. At Rome 2 cases occurred. In the period between Oct. 12th and 19th (both included) there were 237 cases and 120 deaths for the whole country. Of these, 76 cases and 44 deaths are stated to have occurred in a lunatic asylum at Aversa, near to Naples; 53 cases and 36 deaths in Naples itself; and most of the rest in the provinces of Caserta and Naples. Four imported cases (not included in the totals) were observed in Rome.

Cholera in Servia.

On Oct. 12th a case of cholera was reported by telegram from Belgrade; as it was spoken of as "a fresh case" it was presumably not the first. On the 23rd 2 further cases were recorded. No further details have yet been received as to the occurrence of cholera in Servia.

Cholera in Roumania.

On Oct. 4th and again on the 7th single cases of cholera were reported from Tultcha, at the apex of the delta at the mouths of the Danube. No other cases of the disease have been reported from any part of Roumania since the date of my last letter.

Cholera in Constantinople.

The following are the returns of cholera among the civilian population of this city since the outbreak began on Sept. 13th.

From Sept.	13th	to Sept.	26th	.....	22	cases,	9	deaths.
,,	,,	27th ,, Oct.	5th	.....	50	,,	30	,,
,, Oct.	6th	,, ,,	10th	.....	12	,,	7	,,
,,	,,	11th ,, ,,	17th	.....	10	,,	8	,,
,,	,,	18th ,, ,,	24th	.....	7	,,	7	,,

No case has been recorded since the last-named date, but one fatal case (of earlier date) has been added to the list, making in all 102 cases and 62 deaths. Until Oct. 26th no mention was made in the bulletins of the occurrence of cases among the troops. But on that date it was suddenly announced that 200 cases with 92 deaths had occurred in the men of the 1st Army Corps (which form the Constantinople garrison) between Sept. 27th and Oct. 23rd. There have consequently been over 300 known cases and over 150 deaths from the disease in this city in the last five weeks. The outbreak seems now to be subsiding, but the danger of a revival of the disease next year cannot be overlooked.

Cholera in Asiatic Turkey.

There has been a considerable decline in the epidemic of cholera in the vilayets of Erzerum and Van in the last four weeks. It will be recalled that in the week ending Sept. 22nd as many as 224 cases, with 138 deaths, were reported. The following are the figures for the succeeding weeks:—

Week ending	Sept.	29th	.....	145	cases,	96	deaths.
,,	,,	Oct.	6th	.....	61	,,	43	,,
,,	,,	,,	13th	.....	13	,,	13	,,
,,	,,	,,	20th	.....	23	,,	22	,,

These figures bring the totals from the beginning of the outbreak on August 22nd to 543 cases, with 365 deaths. From consular reports, however, it becomes clear that these figures are considerably—and probably very greatly—below the truth.

Consular reports from the vilayet of Mamouret-ul-Aziz, of which Diarbekir is the centre, show that the disease reached there early in September; on the 6th of the month 5 cases occurred in a village three hours from Diarbekir; and some further cases followed. Later and more detailed news is still lacking for this vilayet.

The following are the returns for the town and vilayet of Trebizond since the beginning of the epidemic:—

From Sept.	16th	to Sept.	25th	.....	127	cases,	64	deaths.
,,	,,	27th ,, Oct.	3rd	.....	163	,,	98	,,
,, Oct.	4th	,, ,,	9th	.....	90	,,	40	,,
,,	,,	10th ,, ,,	16th	.....	109	,,	60	,,
,,	,,	17th ,, ,,	23rd	.....	23	,,	21	,,

Here also the figures must be accepted with great caution. The totals are put at 512 cases and 283 deaths.

The outbreak of cholera in the port of Zunguldak, on the Black Sea (the port for the coal mines of Heraclia), has not subsided, as shown by the following figures :—

From Oct.	1st	to Oct.	5th	.....	17	cases,	8	deaths.
,, ,,	6th	,, ,,	10th	.....	14	,,	7	,,
,, ,,	11th	,, ,,	16th	.....	12	,,	9	,,
,, ,,	17th	,, ,,	23rd	.....	20	,,	7	,,

The totals have therefore been 63 cases and 31 deaths.

On Oct. 8th news was received of the appearance of cholera at Khanikin, on the Turkish side of the Turco-Persian frontier; the first case apparently occurred on the 6th. Between that date and the 12th 8 cases and 8 deaths were recorded, followed by 2 other fatal cases before the 21st. Between the 17th and 22nd 7 other cases, with 4 deaths, occurred in the frontier lazaret at Khanikin. About this time cholera had appeared at Bagdad and at several other places along the Tigris Valley. At Bagdad the first 2 cases occurred on the 16th; down to the 23rd 34 cases and 26 deaths had been reported. At Shahraban 69 cases with 55 deaths, at Samara 17 cases with 15 deaths, at Kiazimieh 20 cases with 16 deaths, and smaller numbers elsewhere had occurred in the vilayet of Bagdad down to Oct. 23rd, bringing the totals to that date to 199 cases with 148 deaths. Several of these occurred in the temporary lazarets opened along the course of the river.

No indigenous cases have yet been reported from Syria; but on Oct. 17th and 18th two boatmen at Beirût, who had assisted in landing a batch of pilgrims from a Russian steamer (the s.s. *Voronezh*) fell ill with typical cholera (confirmed bacteriologically). It is remarkable that no known case of the disease had occurred among the pilgrims themselves. The ship had come from an infected port, and had undergone quarantine and disinfection in the Turkish lazarets. The boatmen were themselves in quarantine in the Beirût lazaret when they developed the disease. The infection did not spread outside the lazaret.

The first certain cases at Basra, near the head of the Persian Gulf, were reported on Oct. 21st, when 3 cases, 1 in a person who had come from Bagdad, were registered. On the 26th 5 cases and 3 deaths occurred there, and on the 27th 5 cases, with 4 deaths.

Cholera in Muscat.

On Sept. 21st news was received here that cholera had broken out at Muscat; down to the 24th 17 cases, with 13 deaths, had been recorded. In the following week there were 6 cases, with 4 deaths. On Oct. 10th the port was declared cholera-free, but on the 23rd the disease was again reported present; 5 further cases, with 4 deaths, had occurred.

Cholera in Persia.

On Oct. 6th 7 cases and 5 deaths from cholera were reported from Kermanshah, on the Persian side of the Turco-Persian frontier. The disease broke out here almost at the same time as at Khanikin, on the Turkish side of the frontier. The disease spread rapidly; by the 11th 67 cases, with 46 deaths, had been registered. In the week ending the 17th 227 deaths from cholera occurred in this by no means large town, and all places situated between Hamadan and Kasrisherin were said to be infected. In the following week the cholera mortality sank to 107. Information as to the course of the epidemic in other parts of Persia is still very scanty, but the disease has been, or is, present in Meshed, at Badjnuiran in Khorassan, at Ardebil and Sorab in the Tabriz neighbourhood, and at Enzeli on the Caspian. At Meshed the disease appeared on Sept. 11th, and in three days 28 cases with 8 deaths had occurred.

Cholera in Tripoli (Africa).

The first known cases of cholera here were seen on Oct. 3rd, when two Jewish women in the Israelitish quarter of the town fell ill; 5 other cases occurred in the same house, and 4 of the 7 cases died. The disease spread elsewhere in the town; by the 20th from 4 to 8 cases were being reported daily; on the 26th the number rose to 13, and on the 27th to 16 cases, with 10 deaths. Next day there were only 11 cases with 7 deaths, and finally, on the 29th, 4 cases and 4 deaths. The source of the infection in Tripoli is unknown; but there is frequent communication between its shores and those of Italy, and the first rumour of cholera was the occurrence, on Sept. 15th, of two suspicious cases on an Italian steamer which arrived in Tripoli from Italy; later, however, these were stated to have been cases of gastro-enteritis.

Cholera in Tunisia.

The only appearance of cholera in Tunisia that has been officially announced has been the occurrence of a few cases in the island of Jerba, not far from the Tunis-Tripoli frontier. On Oct. 3rd 2 deaths from cholera occurred here; on the 5th there were 2 more cases in the same house; between that date and the 25th no news was received, but on the last-named date there were 7 cases and 6 deaths.

Conclusion.

From the above brief summaries of reports from many countries it will be seen that the infection of cholera is or has been recently extremely widely spread; it has caused a more or less high mortality throughout (practically) all European and Asiatic Russia, extending from the Baltic and White Seas to the Pacific; it has been present, and in some places fairly active, in Germany, Austria, Hungary, Bulgaria, Roumania, Servia, Turkey in Europe, Asia Minor, Mesopotamia, Persia, the sultanate of Oman (Muscat), and in Tripoli and Tunisia on the north shores of Africa. The coasts of the Mediterranean, Sea of Marmara, the Black Sea, and the Persian Gulf (for Basra is close to the waters of the Gulf) have all been invaded by the infection, and it will be surprising if the germs of disease thus widely spread do not next year, and perhaps for years to come, give rise here and there to recurrent epidemics of greater or less severity.

Constantinople, Oct. 29th.

THE PHYSICAL EFFICIENCY OF RESERVISTS.

IN THE LANCET of Nov. 5th, pp. 1377–8, there appeared a report on the "Recent Army Manœuvres in the South of England" by "A Special Correspondent," the concluding paragraph of which has been taken exception to by our contemporary the *United Service Gazette* on p. 367 of its issue of Nov. 10th under the heading "The Special Reserve and Militia." The paragraph in question ran as follows :—

> Two classes of reservists were mobilised with the Second Aldershot Division, army reservists and special reservists. It was noted that many of the former were men of more or less advanced life and unfit for the arduous daily marching; many more suffered from advanced dental caries. Amongst the special reservists the opposite extreme was notable; many of these were mere boys and quite physically unfit to march the distances covered by the troops. In one column alone some 250 reservists were reported as having been so incapacitated by the marching that it was found necessary to transfer them to the Base Hospital at Aldershot. Such an occurrence as this becomes all the more grave when it is considered that the climatic and other conditions under which the army manœuvres occurred were so favourable. The weather was all that could be desired and the marches were not excessively long, the rations were generous, and tents were used almost every night. What would have been the experience under adverse conditions?

This paragraph, the *United Service Gazette* complains :—

> is couched in such vague, incoherent terms that it is likely to give rise to a good deal of misunderstanding and to play into the hands of that prejudiced body who never miss an opportunity of throwing a stone at the Special Reserve and the Territorial Force, in furtherance of their gospel of compulsion.

Our critic continues :—

> Now to the conundrum which THE LANCET propounds we have no objection to offer, inasmuch as it is serious to contemplate what would happen in the case of actual hostilities, when such casualties occur in the piping times of peace. But what we have to complain of is the reckless, ambiguous way in which THE LANCET sums up the situation. After dealing with the two groups of Reservists separately, in terms the reverse of complimentary, THE LANCET lumps them together in figuring out the casualties. And this is where inexcusable carelessness comes in, for an authoritative organ of this description having found little difficulty in obtaining the exact number of casualties, could easily, had it been so minded, have gathered separate statistics for each body and so have differentiated between them. It was of the highest importance that this should have been done, not only as an act of common justice to the Special Reserve, but also in fairness to the Regular Reserve. As it is, either is suffering from the stigma attaching to the other. Sweeping statements of a general character are always to be regarded with profound suspicion as they may mean anything or nothing, and are usually unreliable. Specific statements giving concrete instances are, on the other hand, of value, as they afford means of direct investigation with resultant confirmation or refutation.

Our answer to the charges of vagueness, incoherence, recklessness, ambiguity, and so on is that the statement is specific and coherent and in no way reckless or ambiguous. The statement on analysis stands: "That in the Second

Aldershot Division some 250 reservists were reported as having been so incapacitated by the marching that it was found necessary to transfer them to the base hospital at Aldershot." Our Special Correspondent stopped where he did because he was reporting to us under our instructions upon the medical aspect of these manœuvres and the physical aspect of the men as a whole.

The *United Service Gazette* goes on to say:—

In the present instance having nothing definite to go upon we yet took the trouble to inquire into the case of at least one Aldershot corps that had its special reserve battalion attached to it throughout the manœuvres. That particular unit was the 1st Battalion Royal Irish Fusiliers, whose 3rd battalion was brought over from Armagh and joined forces with the regular unit as a composite battalion for manœuvre work. Not a solitary man of this Special Reserve unit "fell out" throughout the whole course of the operations—not one; a fact which redounds highly to the credit of the force. If therefore the strictures passed by THE LANCET refer principally to the Regular Reserve—and it looks like it—it affords much food for reflection for the authorities, and is something to be digested by the conscriptionists, who want the whole nation turned into an armed camp.

Why, may we ask, did our contemporary, "having nothing definite to go upon," only take "the trouble to inquire into the case of at least one Aldershot corps." The war establishment of a division shows no less than 12 infantry battalions as comprising it, yet our contemporary is content to select *one* regiment to test the correctness of our correspondent's statement, and that a regiment famous for its good marching capabilities. Our contemporary by extending its inquiries could have arrived at the names of the units which supplied the casualties and could have published the names if it chose. We may also ask the *United Service Gazette* why a regimental reference was thought sufficient? Where a medical question was at stake inquiry was indicated rather amongst the officers of the Royal Army Medical Corps, whose daily duty it was to pick up the men who fell out on the line of march, and to see that they were carried in the ambulance wagons, and whose arduous task it was also to see by the light of a candle the long stream of weary men who reported "footsore" or "sick" on arrival in camp.

Our contemporary quotes extracts from Mr. Robert Blatchford's views on the Special Reserve, which force, it states, "he treats with a greater sense of justice than THE LANCET." Major-General J. M. Grierson, C.V.O., C.B., C.M.G., is also quoted as having said to Mr. Blatchford, "*and certainly behind the brigades I saw there was not a single straggler, nor did I see one man in the ambulance.*" Is this a denial that there were any men in the ambulances? It is quite probable that there was not a single straggler left behind any brigade, for they were all picked up and put in the ambulance wagons, which we are informed were full to overflowing on the first few days of the week.

The *United Service Gazette* goes on to say:—

The inexperienced correspondent of THE LANCET who appears to have grasped hastily at his facts and lacked the knowledge to sort and arrange them in that orderly manner which befits the matter published in such an authoritative organ of the medical profession. Indeed, after reading the pessimistic and jaundiced views of this sapient contributor to our best known medical journal it is heartening to turn to Mr. Blatchford's cheery pendant to his friendly criticism of the lads of the Special Reserve.

We recognise the politeness of this reference to THE LANCET, but exactly because we feel our responsibilities we take care not to publish the views of inexperienced persons. Our experienced Special Correspondent might well agree with what Mr. Blatchford has said (as quoted by the *United Service Gazette*): "Speaking only of what I have seen I should say that the Special Reserve have done as well as could be expected."

The *United Service Gazette* sums up the case against THE LANCET as follows:—

Here there are two strong pieces of incontrovertible evidence—that furnished by the Royal Irish Fusiliers and that supplied by Mr. Robert Blatchford—to rebut the misleading, not to say reckless, criticism passed on the Special Reserve by THE LANCET, and as that journal has no axe to grind in disparaging voluntary service in order to exalt conscription, we hope its editor will, in common fairness to the Special Reserve, go further into the matter than what, on the surface, he already appears to have done.

We remain impenitent, and satisfied with the thoughtful words of our much-abused correspondent. We hold no brief for conscription, and no one who had read our pages in the least carefully could possibly suggest that we wished to disparage voluntary service. To report accurately upon any medical matter arising out of the army manœuvres is clearly our duty, and the principle of voluntary service is not damaged by such accuracy, but supported.

HOSPITALS AND TAXATION.

IN a review of the annual report of King Edward's Hospital Fund in THE LANCET of Oct. 1st reference was made to the necessary retention of the heading "rates and taxes" among the items of expenditure appearing in hospital accounts, with the suggestion that in consideration of their services to the State hospitals might be freed altogether from contributions to the Imperial revenue. Before proceeding to discuss the privileges already enjoyed by hospitals in this respect, which admittedly are considerable, it may fairly be said that a strong case might also be made out in respect of local taxation, as to which hospitals are in the same position as private individuals or commercial enterprises, unless they enjoy exemption of a special kind under the provisions of a local Act of Parliament affecting them. The debt of the locality to the hospital within its borders is certainly not less than that of the State, for if the good work done in healing the sick and injured and in promoting the progress of medical science tends to the benefit of the nation at large, it even more directly lessens the demand for local taxation by keeping "off the rates" persons who owing to temporary or permanent disablement would otherwise have to seek the assistance of the guardians of the poor. The guardians, moreover, in many localities where their own accommodation is insufficient for serious cases in need of medical or surgical aid, have to entrust those under their charge to voluntary hospitals, and if a payment or contribution is made in return for this benefit the question of its adequacy would have to be considered before pleading it as a defence to a claim for the remission at any rate of the poor-rate. The effects resulting from the work of the hospitals have, however, not been confined to the relief of the poor-rate. The education authority and the sanitary authority, to mention two of the most important branches of local administration, would find their expenses heavier in many places if the voluntary hospitals did not indirectly contribute to lighten them by giving medical aid to poor parents by taking a prominent part in the diffusion of higher ideals in matters pertaining to the health of children and in a variety of other ways.

We pass, however, to the survey of the position of the hospitals with regard to taxation by the Government. In this respect they enjoy already, as has been said above, exemptions, but it must be recollected that these remissions are not given without substantial consideration in the form of public service freely rendered to the community. The Finance Act (1910) contains special provisions affecting charitable institutions, prompted by the same spirit which actuated previous statutory recognition of the great work done in the United Kingdom by voluntary charity, and the new provisions referred to follow lines already laid down. It will be remembered that the Legislature concerns itself with charity and charitable institutions generally, and that hospitals for the sick are never named as such, but are accorded privileges in so far as they are charitable institutions. With regard to income-tax, hospitals received important recognition under the Act which in 1842 granted to Her late Majesty "duties on profits arising from property, professions, trades, and offices." Subject to provisions as to formalities necessary to prevent abuses, and to conditions securing the strictly charitable purposes for which the premises and incomes affected are to be employed, hospitals are exempt from taxation in respect of their buildings and premises and of repairs to these; in respect of rents and profits of lands; in respect of their stock or dividends and annual profits: while provision is made specially in another Act, the Charitable Trusts Act, 1855, for the mode of exemption from tax of their incomes arising from stock in the Funds. Part IV. of the Finance Act, 1910, is to be construed with the Income Tax Act, 1842, referred to above, and these two Acts and the Income Tax Act, 1853, are to be referred to as "The Income Tax Acts," the exemption described being thus not affected. Hospitals are exempt from Inhabited House Duty under the House Tax Act, 1808, being included in a provision to that effect relating to "any hospital, charity school, or house provided for the reception or relief of poor persons." Cases have been brought forward to decide the effect of the reception of paying patients upon this exemption, and the result of the judgments given appears to be that the contributions of

paying patients do not necessarily deprive the hospital of its right to avoid Inhabited House Duty. The cases upon this subject, and a useful summary of the law in general as to hospitals and taxation, will be found in A. T. Murray's "Law of Hospitals."

Hospitals then in existence were exempted from land tax by the Land Tax Act, 1797, as to sites actually occupied by them. We need not recite the various duties payable upon land under the Finance Act. 1910, but quote Section 37 (1), which states the exemption affecting hospitals:—

> No reversion duty or undeveloped land duty under this part of this Act shall be charged in respect of land or any interest in land held by or on behalf of any governing body constituted for charitable purposes while the land is occupied and used by such a body for the purposes of that body, and increment duty shall not be collected on any periodical occasion in respect of the fee simple of or any interest in any land held for the purposes of such a body, whether it is occupied or used by that body or not, without prejudice, however, to the collection of the duty on any other occasion.

The expression "governing body constituted for charitable purposes" includes any person or body of persons who have the right of holding, or any power of government of or management over any property appropriated for charitable purposes (including property appropriated for the purpose of any of the naval or military forces of the Crown), and includes any "corporation sole" and all universities, colleges, schools, and other institutions for the promotion of literature, science, or art. It is to be observed that, except with regard to the "periodical occasions," this section affects only the land occupied by the governing body for its own purposes, and that therefore the exemption granted does not apply, for example, to land let by it to tenants. Its land thus occupied is exempt from such increment duty as otherwise would be levied on the "periodical occasions" referred to, but "without prejudice to the collection of the duty on any other occasion"—i.e., on the land being sold increment duty will be payable on the basis of the increment since 1909, if such duty has not been paid meanwhile.

Corporate bodies whose property, owing to their continuous existence, would otherwise contribute nothing to the revenue to correspond with the probate, legacy, and succession duties accruing where individual owners are concerned, are taxed by the Customs and Inland Revenue, Act, 1885, at the rate of 5 per cent. upon the annual value, income, or profits of their possessions, but there is an exemption from this "corporation duty" which covers the case of hospitals by excluding income or profits "applied for any charitable purpose."

So substantial a portion of the funds of hospitals is derived from the gifts of wealthy persons of mature age or from bequests taking effect when they die, that the various "death duties" affect them considerably. Legacy or succession duty is charged at the highest rate, 10 per cent., upon all gifts made to hospitals which would be liable to such duty if the property passed to individuals, unless, of course, the testator provides that the gift shall be "free of duty" and his estate is sufficient to render it such. It will be remembered that under the Finance Act, 1910, the amount of the estate passing at death is to be calculated so as to include property given away by the owner within three years of his decease, the period of three years being substituted for the one-year limit previously provided in this respect. From this change, however, gifts made for public or charitable purposes are (*inter alia*) excepted, and for these the one-year rule remains in force. This is a concession of advantage to the donees affected, as no doubt it should tend to encourage donations during the life-time of the giver, or at all events should diminish the discouragement introduced by the three-years rule. A donor who knew that his estate would cease at the end of a year to be liable to duty in respect of the property forming the subject of the gift at the end of one year, would presumably give more freely, than if this liability were extended to three years. Such liability, moreover, as may directly affect the property given will end after a year instead of lasting for three years.

It will be seen from the above that on the whole hospitals, in common with other charitable institutions and foundations of public benefit, have had their claims to special consideration recognised to a very large extent. If they "ask for more," both in respect of such loss as they may suffer through the payment of heavy legacy duties, and through their liability as ratepayers, they have more arguments than one in support of their claim for extended privileges. To put these briefly, their expenses are vastly heavier than they once were, and must continue to increase, representing, however, vastly greater benefits conferred by them on their patients owing to improved but more costly methods in medicine and surgery. These improved methods are largely due to discoveries made in the hospitals themselves. The burden of rates increases annually. The increasing burden of modern taxation tends to diminish the revenues of hospitals by checking the flow of gifts from the living and of bequests from the dead.

SANITATION IN INDIA.

(*Continued from p. 1144.*)

Hospitals and Dispensaries.

SOME idea of the scale on which medical work is carried on in the province of Bengal may be gathered from the fact that the total number of patients treated during 1909 amounted to 3,437,053; most of these were, of course, outdoor attendances, but the indoor patients numbered 69,130, of whom 51,860 were either cured or relieved, and 7230 died. The Medical College Hospital in Calcutta had nearly a thousand fewer in-patients than in 1908, some of the wards having been closed for quadrennial repairs. Small-pox and plague were rife in the city, but malaria and cholera were not so prevalent. A regrettable occurrence was the death of three children in the Presidency hospital from cholera, they being under treatment for other complaints; they are said to have partaken of food given by the nurses, among whom there was at the time a virulent outbreak of the disease. Beri beri and epidemic dropsy caused relatively numerous admissions, and an inquiry is now being conducted into the prevalence of these diseases by Captain E. D. W. Greig, I.M.S. The officiating Inspector-General of Civil Hospitals, Lieutenant-Colonel F. J. Drury, I.M.S., notes that nursing is still the weak point in most hospitals for want of funds; the whole question of nursing is now under consideration. In the enormous task of fighting malaria much good has been done by deputing civil hospital assistants to malarious districts to distribute medical aid; 19 were detailed for this duty, and their work was much appreciated. Over a million and a half packets (10 grains) and tablets (3½ grains) of quinine were sold to the people, who now much appreciate the value of the drug as a prophylactic. In the district of Champaran, bordering on Nepaul, the cases of goitre (25,411) amounted to nearly one-fifth of the total number of patients treated. The surgical operations performed numbered 174,127; death resulted in 575 cases, but 162,928 are returned as cured.

In the province of Eastern Bengal and Assam the number of patients treated in dispensaries reached a total of 3,466,068, of whom 25,755 were indoor cases; 19,082 of these were cured or relieved and 2094 died. Malarial fevers were the most frequent cause of illness, and next to them intestinal worms. In the Mymensingh district occurred 21,193 cases of goitre, about one-third of the total for the whole province.

In Upper and Lower Burma the total number of cases treated in dispensaries was 1,241,503, of whom 53,488 were indoor patients; 44,926 were cured or relieved, and 3909 died. The important event of the year was the opening of the new General Hospital at Rangoon, which will accommodate 518 patients. Colonel H. St. Clare Carruthers, I.M.S., officiating Inspector-General of Hospitals, states that this is an up-to-date hospital, with new operation theatre and appliances for the aseptic treatment of wounds, &c. There were 1032 major operations during the year; the mortality was only 7·2 per cent., compared with 10·6 in 1908; moreover, there were 50 more abdominal operations than in the previous year. A scheme for training ten Burmese and Karen women in sick nursing has been prepared, and is only awaiting provision of the necessary funds.

In the Central Provinces and Berar the total cases treated in dispensaries amounted to 1,779,060, the indoor cases numbering 13,776. There was a decrease in malarial fever, but this is ascribed to the presence of plague, at which time there is a disinclination on the part of those suffering from fever to attend the dispensaries. Cholera was also prevalent during the year.

In the recently constituted North-West Frontier province a considerable increase in the number treated of

both indoor and outdoor patients is recorded, and viewed with satisfaction by the Chief Commissioner and by Lieutenant-Colonel G. W. P. Dennys, I.M.S., the Administrative Medical Officer, as it shows that the people are now appreciating the medical assistance provided. The year has not been an unhealthy one. Great improvements have been made in the Egerton Hospital at Peshawar, and new hospitals and dispensaries have been opened at various places. There is no doubt that the humanising and civilising effects of medical and surgical treatment are making themselves felt among the wild population of this borderland. A great increase took place in the number of operations performed, especially in those for cataract and vesical calculus, the Bannu and Peshawar Mission Hospitals and the Egerton Hospital at Peshawar being especially mentioned. Complaint is made of the difficulty in getting men of the assistant surgeon and hospital assistant classes to serve in the province. This part of the country does not itself produce men of this sort, and they will not come from other parts of India to "serve in a province like this, where the amenities of life are so few, where the danger to life and property is so great, and in which they are to all intents and purposes exiles from their homes, and serving among people with whom they have little in common." It is to be hoped that this statement by the Administrative Medical Officer will meet with attention from the provincial and central authorities. The total number of cases treated was 699,796, of whom 11,304 were indoor patients; 9863 of these were cured or relieved, and 323 died. Malarial fevers caused the greatest number of admissions, but these were much fewer than in the previous year. In spite of heavy rainfall 1909 was not a bad fever year; also there was very little cholera.

In the United Provinces the total number of patients treated in hospitals and dispensaries was 4,936,599; of these, 69,741 were indoor patients; 56,241 were cured or relieved, and 3452 died. Although the malaria outbreak of 1908 had been the most severe since 1879, an even larger number of patients—no less than 1,492,487—were treated for these fevers in 1909. The greatest numbers treated for fever were at Gonda (136,942) and Lucknow (110,032). Colonel C. C. Manifold, I.M.S., Inspector-General of Hospitals, informs us that an inquiry was instituted at Cawnpore into the excessive mortality of infants under one year. It was found to be largely due to tetanus or septic disease at birth, the cut surface of the cord being smeared with all sorts of deleterious matter, often mixed with mould containing the tetanus bacillus. Deaths from so-called convulsions are often due to tetanus.

From the report on the Punjab dispensaries by Colonel T. E. L. Bate, I.M.S., Inspector-General of Hospitals, it appears that the total number of patients treated reached 4,511,751. Of these, 77,935 were in-patients, 67,938 were either cured or relieved, and 2492 died. A considerable decline took place in the malarial cases, compared with the previous years; also a reduction in dysentery and diarrhœa. The province was free from epidemic disease during 1909.

Jails.

The administration report on the Bombay Jail Department for 1909 by Lieutenant-Colonel J. Jackson, I.M.S., Inspector-General, deals with a total number of 23,194 prisoners, the daily average strength having been 8984. The death-rate during the year was 17·5 per 1000, practically the same as in 1908, and the lowest recorded for the last 30 years, except in 1905, when it was 17·1. Of the 157 prisoners who died, 4 were admitted in a dying condition and 38 in bad health; the chief causes of death were pneumonia (3·2), tubercle, and dysentery (2·0 per 1000). Many, if not most, Indian prisons are in a chronic state of overcrowding, which leads to difficulties in maintaining a sanitary condition of the prisoners. At Dharwar there were 3 cases of plague, with two deaths. Although the prison was overcrowded no spread occurred, all the prisoners having been inoculated. Rats had been dying in the prison for some time, and the disease was prevalent in the neighbouring village of Saidapur. The common prison at Bombay had 17 deaths, giving the high death-rate of 42·4 per 1000, but 7 were already ill when admitted. "The Bombay habitual is a syphilitic, malaria-sodden, debauched person. Every healthy prisoner is sent to the Deccan gang, and the residue are prisoners of poor physique." At the House of Correction at Bombay there were 6 deaths, 4 occurring in men who were in bad health on admission to prison. At Ahmedabad 8 deaths occurred from dysentery and diarrhœa. It is stated that special care is being devoted to the preparation of food and the regular examination of any prisoner losing weight. Cerebro-spinal meningitis caused 17 admissions and 5 deaths at the Central Prison, Hyderabad (Sind). At the Yerravda Central Prison, the largest in the Presidency, with an average population of 1515, the death-rate was only 14·5 per 1000, which is a very satisfactory figure. Four out of the 20 deaths that occurred were due to senile decay. Various improvements in dieting were carried out during the year, extra rations were issued to weakly prisoners and convalescents, extra warm clothing given when necessary; and lastly, as a result of prison detention it was found that of the total number of prisoners who were discharged during the year (16,582) no less than 54·9 per cent. gained weight, and 28·8 per cent. remained stationary.

In the province of Eastern Bengal and Assam the total prison population was 45,182, the daily average being 7893. 226 deaths occurred, being in a ratio of 28·63 per 1000. Cholera caused four deaths, distributed sporadically over four separate outbreaks. Dysentery caused 57 deaths out of 1357 cases. Major B. J. Singh, I.M.S., Inspector-General of Prisons, is of opinion that its prevalence is connected with the condition of pyorrhœa alveolaris. In two jails where dysentery was prevalent he found a large majority of the prisoners to be suffering from this condition of the mouth; while at two other jails, where all the men's teeth and gums were taken care of, and in a healthy condition, there were hardly any cases of dysentery. Quinine was issued as a malaria prophylactic with very good results. Dysentery was the cause of the highest death-rate, 8·3 per 1000; and pneumonia of the next highest, 4·5 per 1000. Of the 12,841 prisoners discharged during the year, 56·6 per cent. had gained, and 26 per cent. had neither lost nor gained, weight since admission.

In the United Provinces of Agra and Oudh, according to the report of Lieutenant-Colonel C. Mactaggart, I.M.S., Inspector-General, the average number of prisoners during the year was 26,075, and the death-rate 23·7 per 1000. This was nearly as high a rate as in the very feverish year 1908; the malarial epidemic, indeed, continued during the early months of 1909. In almost every jail a large number of prisoners were admitted with enlarged spleens and other signs of malarial cachexia. Bareilly Central Prison and District Jail, Lucknow Central Prison, and Saharanpur Jail, all had high death-rates (over 40 per 1000). At Lucknow Central Prison cholera broke out, necessitating the removal of over 800 convicts into camp at the end of July, while the rains were very heavy. Cholera caused 20 deaths, dysentery 20, and diarrhœa 9; the total mortality was 44·9 per 1000. There were also 3 cases of cholera and 2 deaths at the Lucknow District Jail. In neither of these prisons was there any infection of the water or food-supply, and it was thought to have been spread through flies. The Central Prison and the District Jail at Bareilly had the high death-rates of 40 and 42·7 per 1000 respectively; they both receive prisoners from the highly malarious Terai districts, most of them having enlarged spleens. Saharanpur had the highest death-rate of 43·2 per 1000, due to pneumonia, dysentery, and malaria. Malaria was prevalent throughout the provinces, and quinine was administered prophylactically in 15-grain doses to nearly all prisoners from August to October, as in the Punjab jails, but Lieutenant-Colonel Mactaggart admits that he is disappointed in regard to its prophylactic value.

In Lieutenant-Colonel G. F. W. Braide's report on the Punjab jails attention is drawn to the unenviable notoriety of the Ferozepore district, which heads the list in regard to prevalence of crime; this is considered to be mainly the result of the spread of drinking habits amongst the flourishing peasantry. "It is the same all the world over, alcohol and crime walk ever hand in hand; and it is sad to contemplate the tainting of the sober, robust, hard-working Punjabi with this social evil." The figures for malaria are remarkable; from an average convict population of 10,514, there were only 1525 admissions to hospital and two deaths from malarial fever, being in a ratio of 145 and 0·19 per 1000 respectively. Both deaths occurred at Gurdaspur jail, and there seems to have been an uncertainty whether they were really due to malaria or not. Of the cases, only 408 were observed during the four autumn months when the prisoners were

under the prophylactic influence of quinine. During this period some remarkable returns were made; for instance, in the Lahore Central, Rawal Pindi, Gujrat, and Ludhiana jails, as few as three admissions and under were shown. Following, as it did, on the good results obtained in 1908, Lieutenant-Colonel Braide reiterates his conviction that this "complete immunity is obtained by quinine prophylaxis. If the prison population were not a floating one, if an admission dose throughout the year were not prohibitive on account of cost, and if there were no slackness of administration, there would be no malaria in Punjab jails." In 1908, an excessively malarious year, the admission-rate from fever was only 164 per 1000, the mean-rate for 1902–06 having been 365. Colonel Braide's method that proved so signally successful was, during August to November, to give every prisoner on admission 10 grains, and once a week afterwards 15 grains, of quinine.

The medical history of the jails in Burma for 1909 has been very satisfactory; though not quite so favourable as in the three previous years, both admission- and death-rates have been lower than at any preceding period. At Mandalay the health was exceptionally good until July, when an outbreak of 37 cases of cholera occurred with 28 deaths; the disease was considered to have been introduced and propagated by flies. Dysentery caused 257 admissions and 23 deaths, and tuberculous disease 121 admissions and 60 deaths, almost all in the jails of Lower Burma; in other respects the health of the prisoners was good.

Lieutenant-Colonel W. B. Lane's report on the jails of the Central Provinces is short and pithy. The total jail population amounted to 16,409, the average strength being 3849, and the death-rate was 15·59 per 1000. At Raipur and Jubbulpore numerous cases of dysentery and diarrhœa were noticed to occur in prisoners soon after their admission to prison. Lieutenant-Colonel Lane feels more and more sure that this is due to "unaccustomed plenty." Major C. H. Bensley also believes that it is often the result of overfeeding. "The general public in India consider the prisoner too well fed, and prisoners on release preach about the good and regular diet" (p. 7). Accordingly penal diet has been largely prescribed, with or without solitary confinement.

The North-West Frontier province had a total jail population of 9133, the average number present being 1218; the death-rate was 22·99 per 1000, dysentery and pneumonia being the most fatal diseases. Malaria was not very prevalent, but considering that all prisoners received prophylactic quinine treatment Lieutenant-Colonel Dennys considers the results to be disappointing. He doubts if all the cases really were malaria, suggesting that some were due to sand-fly (phlebotomus) fever. A further series of experiments on quinine prophylaxis was carried out at Peshawar and Dera Ismail Khan jails; at each jail three gangs were formed of equal numbers of prisoners, A gang receiving no quinine, B gang receiving 5 grains every morning, and C gang 15 grains every fifth and sixth day. This was carried out from July 1st to Nov. 30th. At Peshawar each gang consisted of 30 men; 11 in A gang, 6 in B gang, and 1 in C gang were admitted for malaria. At Dera Ismail Khan the gangs were of 47 men in each, and the malarial admissions in A, B, and C were respectively 26, 7, and 2. Another gang, X, "consisting of prisoners not included in the other three gangs who were in jail on July 1st and who were admitted after that date," received 15 grains every fifth and sixth day with C gang; they had 16 cases of fever. In each experiment the administration of 15 grains every fifth and sixth day gave the best results, whereas in 1908 5 grains every day had appeared to be the best treatment. Typhus fever broke out in Peshawar jail, causing 21 admissions and 5 deaths. The patients were treated in tents and bed bugs destroyed.

(To be concluded.)

"LUSUS," a book of verse and prose, by Mr. Christopher Stone, will be sold on behalf of the Prince Francis of Teck Memorial Fund for the endowment of the Middlesex Hospital. Copies, price 5*s.* each (postage 4*d.* extra), may be obtained from Mrs. Christopher Stone, 177, St. James's Court, Buckingham Gate; from Mr. B. H. Blackwell, the publisher, 51, Broad-street, Oxford; or from Messrs. J. and E. Bumpus, Messrs. Truslove and Hanson, and Messrs. Hatchards, who have kindly undertaken to sell copies for the Fund.

PRISONS IN EGYPT.[1]

As a help towards public security and morality the Egyptian Government now provides three convict prisons, ten central prisons in the chief towns, and nearly a hundred local gaols in the country districts. During the year, 93,165 prisoners were admitted, mostly of the male sex, and the daily average of persons in confinement was 13,420. More than three-quarters of the individuals sentenced to fine or imprisonment paid the amount, although the fines averaged 11*s.* This is a large sum in a country where the labourer does not, as a rule, gain more than 10*s.* a week, and it shows that the friends of the fellah possess money concealed for such an emergency, and also that imprisonment is considered rather more deterrent than it once was. The report is illustrated by several tables, from one of which we see that 55 per cent. of the sentenced prisoners were agricultural labourers, while artisans contributed 17, domestic servants 3, and Government officials no less than 7 per cent. Egypt is not exceptional in finding that penal servitude has no terror for the habitual offender, "who is usually back in prison again after a few weeks or months." An attempt to deal with these "in-and-out" prisoners is being made by the establishment of an Adult Reformatory, by which it is calculated that the expenditure need not be increased and some good may be achieved. Whipping, under the order of the courts, was administered to 3375 boys during the year, and 314 boys and 32 girls were admitted to the Juvenile Reformatory, more than half of whom were sentenced under the Waifs and Strays Law. It is satisfactory to note that of 117 boys released from this reformatory in 1907, 63 per cent. are reported by their employers to be doing well, though 13 per cent. have been reconvicted and 24 per cent. have been lost sight of.

Since 1901 certain prisoners have been allowed by a new law to elect to work out their sentence by forced labour, instead of going to prison, and this has the double advantage of reducing the overcrowded state of the prisons and of keeping minor delinquents from the contamination of prison life. The figures under this heading for 1909 show that 13,842 men elected to labour rather than go to prison, 407 of them failed to report themselves, and 737 others absconded before their allotted task was completed, but the remainder faithfully finished their appointed tale of work. Corporal and minor punishments considerably exceeded in figures those of the preceding year, the offences requiring these can partly be traced to the wave of unrest and discontent with constituted authority which has lately swept over Egypt.

Dr. R. G. Kirton, the chief medical officer of the department, in his report draws attention, not for the first time, to the congested state of all the prisons throughout the year, and attributes the comparative freedom from epidemics to the high standard of cleanliness and to the zeal of the Egyptian medical staff. He adds: "This overcrowding in the prisons makes them peculiarly liable to widespread infection. The tinder is present and may be lit at any moment. Epidemics in the prisons not only disorganise prison work and that of the judicial and public authorities, but are also a grave danger to the general public health." He has fully analysed the vital statistics of the year, and shows that the mortality per 1000 has been reduced from 13·6 in 1908 to 12·4 last year. More than half of the deaths occurred between the ages of 15 and 30 years. Infectious diseases were responsible for 15 deaths—namely, 7 from typhus, 4 from cerebro-spinal fever, 2 from relapsing fever, and 1 each from small-pox and erysipelas. Twenty-three deaths were due to phthisis, but the mortality per 1000 from this cause has been reduced to 1·7, from 4·1 in the year 1905. The seven deaths from typhus occurred at Tanta, which is one of the most overcrowded prisons and where there were 46 cases of what used to be called "jail fever." The total number of typhus cases which occurred in all the prisons was 64. Of relapsing fever there were 95 cases reported, of which 24 occurred in a batch of boys newly admitted from an institution. The decrease of late years in typhus and relapsing fevers is undoubtedly due to the greater cleanliness of the provincial prisons and to the war waged against bugs and lice. Twenty cases of leprosy were reported, and 927 cases of diarrhœa and dysentery were treated, a

[1] Report for the year 1909 of the Egyptian Prisons Department, Cairo. 1910. Pp. 90.

number which would doubtless be decreased if overcrowding could be prevented.

The net profit of the year on the prison industries works out at more than £16,000, being an improvement on the preceding year, and great credit is due to those who have to find regular occupations for 13,000 prisoners, drawn from a class of non-workers. The distribution of the boys in the reformatory in different trades comprised printers, book-binders, carpenters, shoemakers, tailors, tin-smiths, blacksmiths and fitters, farm workers, gardeners, and musicians, while the girls were taught sewing, laundry work, and cooking. The general improvement in Egyptian prisons of late years reflects great credit on Coles Pasha, C.M.G., the Director-General, who has had many years' experience of police and prison administration both in India and in Egypt. It is only a quarter of a century ago that the practice of the Egyptian authorities was to arrest not only everyone who might have been implicated in a crime, but also a number of their relatives as well as all the witnesses, whether they were on the side of the prosecution or of the defence, and when once in prison no distinction was made between those who were awaiting trial and the witnesses, who were imprisoned because it was more convenient to keep them in case they were wanted, than to set them at liberty.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 8001 births and 4801 deaths were registered during the week ending Nov. 12th. The annual rate of mortality in these towns, which had been equal to 13·0 and 13·1 per 1000 in the two preceding weeks, rose to 14·8 in the week under notice. During the first six weeks of the current quarter the death-rate in these towns averaged 13·3 per 1000. In London the death-rate during the same period, calculated on the probably over-estimated population, was also equal to 13·3 per 1000. The 4801 deaths from all causes registered in the 77 towns last week showed an increase of 551 upon the number in the previous week, and included 392 which were referred to the principal epidemic diseases, against 504, 425, and 361 in the three preceding weeks; of these 392 deaths, 136 resulted from measles, 110 from diarrhœa, 54 from diphtheria, 37 from whooping-cough, 32 from enteric fever, and 23 from scarlet fever, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the 77 towns last week was equal to 1·2 per 1000, against 1·6, 1·3, and 1·1 in the three preceding weeks. No death from any of these diseases was registered last week in Leicester, Croydon, South Shields, Hornsey, or in eight other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·2 in Brighton, 4·1 in Rhondda, 4·5 in West Hartlepool, 4·9 in Middlesbrough, and 6·5 in Tynemouth. The fatal cases of measles in the 77 towns, which had been 75, 107, and 101 in the three preceding weeks, further rose to 136 last week, and exceeded the number in any week since the beginning of June; they caused the highest annual rates, 1·9 in West Hartlepool, 3·2 in Brighton, and 5·5 in Tynemouth. The deaths attributed to diarrhœa, which had declined in the ten preceding weeks from 527 to 123, further fell last week to 110, and were proportionately most numerous in Rochdale, Burnley, Rhondda, and West Hartlepool. The deaths referred to diphtheria showed a further increase of 8 upon the numbers in recent weeks, and included 15 in London and West Ham, 4 in Bradford and in Newcastle-on-Tyne, and 3 in Norwich. The 37 fatal cases of whooping-cough exceeded by 5 the low number in the previous week; 7 were registered in London and 3 both in Bristol and in Liverpool. The deaths referred to enteric fever, which had been 30 and 29 in the two previous weeks, rose last week to 32, of which 12 occurred in London and its suburban districts, 3 in Portsmouth, and 2 both in Walsall and in Rhondda. The 23 fatal cases of scarlet fever showed a decline of 7 from the number in the previous week, but included 6 in Liverpool and 3 in Leeds. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily increased in the 12 preceding weeks from 1428 to 1856, had further risen to 1882 on Saturday last; 239 new cases of this disease were admitted to these hospitals during last week, against 221 and 188 in the two previous weeks. The 1476 deaths from all causes in London last week included 319 which were referred to pneumonia and other diseases of the respiratory system, against 194, 234, and 246 in the three preceding weeks, and exceeded by 36 the corrected average number in the corresponding week of the five years 1905–09. The causes of 40, or 0·8 per cent., of the deaths registered during last week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Sheffield, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Hull, Nottingham, and in 49 other smaller towns; the 40 uncertified causes of death in the 77 towns last week included 7 in Birmingham, 5 in Liverpool, and 4 in Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 784 births and 484 deaths were registered during the week ending Nov. 12th. The annual rate of mortality in these towns, which had been equal to 12·7 and 13·6 per 1000 in the two preceding weeks, declined again to 13·3 in the week under notice. During the first six weeks of the current quarter the death-rate in these eight towns averaged 13·3 per 1000, and corresponded with the mean rate during the same period in the 77 largest English towns. The annual death-rates in the eight Scotch towns last week ranged from 8·4 and 10·2 in Perth and Leith, to 14·9 in Greenock, and 15·3 in Dundee. The 484 deaths from all causes in the eight towns last week showed a decline of 8 from the number in the previous week, and included 47 which were referred to the principal epidemic diseases, against 48 and 56 in the two preceding weeks; of these 47 deaths, 17 resulted from diarrhœa, 11 from diphtheria, 7 from scarlet fever, 7 from whooping-cough, 4 from "fever," and 1 from measles, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the eight towns last week was equal to 1·3 per 1000, and slightly exceeded the rate from the same diseases in the 77 English towns. The deaths attributed to diarrhœa in the Scotch towns, which had declined in the six preceding weeks from 51 to 23, further fell last week to 17; they included 6 in Glasgow, 4 in Dundee, and 2 both in Edinburgh and in Greenock. The 11 fatal cases of diphtheria showed a decline of 5 from the high number in the previous week, but included 6 in Glasgow and 3 in Dundee. Of the 7 deaths from scarlet fever, 5 occurred in Glasgow and 2 in Dundee; and the 7 fatal cases of whooping-cough (corresponding with the number in the previous week), included 4 in Glasgow. The 4 deaths referred to "fever" were all returned in Glasgow; 3 were certified as enteric fever and 1 as cerebro-spinal meningitis. The fatal case of measles occurred in Edinburgh. The deaths referred to diseases of the respiratory system in the eight towns, which had been 72 and 84 in the two preceding weeks, declined to 65 last week, and were 50 below the number in the corresponding week of last year. The causes of 18, or 3·7 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 555 births and 358 deaths were registered during the week ending Nov. 12th. The mean annual rate of mortality in these towns, which had been equal to 17·4, 16·8, and 15·1 per 1000 in the three preceding weeks, rose again to 16·2 in the week under notice. During the first six weeks of the current quarter the annual death-rate in these Irish towns averaged 16·4 per 1000; the mean rate during the same period did not exceed 13·3 in the 77 largest English towns and in the eight principal Scotch towns. The annual death-rate during last week was equal to 17·1 in Dublin, 16·3 in Belfast, 15·8 in Cork, 15·6 in Londonderry, 6·8 in Limerick, and 15·6 in Waterford; the mean annual death-rate last week in the 16 smallest of these Irish towns was equal to 17·0 per

1000. The 358 deaths from all causes in the 22 town districts last week showed an increase of 14 upon the number in the previous week, and included 27 which were referred to the principal epidemic diseases, against 42, 33, and 28 in the three preceding weeks; these 27 deaths were equal to an annual rate of 1·2 per 1000, and corresponded with the rate from the same diseases last week in the 77 towns, the rate in the eight Scotch towns being 1·3. The 27 deaths from these epidemic diseases in the Irish towns last week included 11 from diarrhœa, 6 from whooping-cough, 5 from diphtheria, 3 from measles, and 1 each from scarlet fever and enteric fever, but not one from small-pox. The deaths attributed to diarrhœa, which had been 20 and 14 in the two preceding weeks, further declined to 11 last week, of which 3 occurred in Dublin, 4 in Belfast, and 2 in Londonderry. Of the 6 fatal cases of whooping-cough 4 were returned in Dublin and 2 in Wexford; and the 5 deaths from diphtheria included 2 in Dublin and 2 in Dundalk. Two of the 3 fatal cases of measles and the death from scarlet fever occurred in Lurgan. The death referred to enteric fever was registered in Drogheda. The deaths in the 22 towns last week included 88 which were referred to pneumonia and other diseases of the respiratory system, against 66 and 60 in the two preceding weeks. The causes of 17, or 5·1 per cent., of the deaths registered last week in the Irish towns were not certified; in the 77 English towns the proportion of uncertified deaths last week did not exceed 0·8 per cent., while in the eight Scotch towns it was equal to 3·7 per cent.

THE SERVICES.

Royal Navy Medical Service.

THE following Staff-Surgeons have been promoted to the rank of Fleet-Surgeon in His Majesty's Fleet: William Bernera Macleod, Arthur Harry Hingston Vizard, Harry Spicer, Edward Thomas Philip Eames, John Alexander Lanford Campbell, Harold Paget Jones (dated Nov. 14th, 1910).

The following appointment is notified:—Staff-Surgeon: P. H. M. Star to the *Leander*, additional, for destroyers.

Royal Army Medical Corps.

Captain Robert B. Black, from the Seconded List, is restored to the establishment (dated Nov. 1st, 1910).

The undermentioned Lieutenants are confirmed in their rank:—Frederick R. Laing and John T. Simson.

Colonel T. J. R. Lucas, C.B., principal medical officer of the First (Peshawar) Division, has been transferred as Principal Medical Officer to the Jubbulpore and Jhansi Brigades. Lieutenant-Colonel G. E. Hale, D.S.O., has been posted to the Southern Army in India and appointed to the Fifth (Mhow) Division. Lieutenant-Colonel L. W. Swabey, at present on leave from Aden, has been transferred to the home establishment pending his retirement. Lieutenant-Colonel C. T. Blackwell has been appointed to the Ninth (Secunderabad) Division. Lieutenant-Colonel R. H. Hall, from Colchester, embarks for Bermuda on Nov. 25th, to take up the appointment of Senior Medical Officer recently vacated by Lieutenant-Colonel J. C. Culling on promotion. Lieutenant-Colonel G. G. Adams has been appointed to command the station hospital at Colaba, in succession to Lieutenant-Colonel G. F. Gubbin, whose tour has expired. Major T. B. Beach has embarked for Egypt. An exchange on the roster for foreign service has been approved by the War Office between Major W. W. O. Beveridge, D.S.O., and Major W. G. Beyts. Major H. V. Prynne has arrived home for duty from Gibraltar. Major H. A. Waring, on the expiration of his tour of service in India, has been transferred to the home establishment and has been appointed to the Southern Command. Major G. A. T. Bray has been transferred from the Southern Command to the Eastern Command. Major H. A. L. Howell, on arrival home from Gibraltar, has been appointed Medical Officer in Charge of the Royal Army Clothing Factory at Pimlico. The undermentioned officers, on conclusion of their course of instruction for promotion at the Royal Army Medical College, Grosvenor-road, have been posted as follows: Captain J. P. J. Murphy and Captain A. H. Hayes to Dover; Captain A. McMunn, Captain J. M. H. Conway, Captain W. D. C. Kelly, and Captain A. T. Frost to Dublin; Captain J. McKenzie, Captain M. D. Walker, and Captain H. W. Russell to the London District. Captain G. A. D. Harvey, from Khartoum, has been appointed to the Eastern Command for duty. Captain R. C. Hallowes has arrived home for duty from Egypt. Captain J. H. Gurley has been transferred to the home establishment from Egypt, by exchange. Captain G. A. K. H. Reed has been appointed Specialist in Physical Training to the Aldershot Command. Captain P. H. Henderson has joined at Portsmouth from Ibsley Camp. Captain W. F. Tyndale, C.M.G., has been transferred from Dublin to the Curragh Camp. Captain J. C. G. Carmichael, from Fleetwood, has joined for duty at Chester. Lieutenant D. H. C. MacArthur, from the London District, has embarked for a tour of service in India. Lieutenant T. W. Stallybrass has been transferred from Tidworth Park to Hamilton Camp.

Royal Army Medical Corps School of Instruction.

Major Claude K. Morgan, R.A.M.C., to be an Instructor, vice Major C. C. Fleming, D.S.O., who has vacated that appointment (dated Oct. 29th, 1910).

Indian Medical Service.

Lieutenant-Colonel A. L. Duke, administrative medical officer of the North-West Frontier Province, has been appointed under the Foreign Department of the Government of India to be Agency Surgeon of Baluchistan, vice Lieutenant-Colonel J. Sykes, who is proceeding on combined leave in December. Lieutenant-Colonel A. J. Macnab, on return from leave, has been appointed Residency Surgeon, Srinagar, Kashmir, vice Lieutenant-Colonel W. R. Edwards, appointed Administrative Medical Officer, North-West Frontier Province. Lieutenant-Colonel R. H. Castor, Bombay, has received an extension of his leave. Major A. W. R. Cochrane, on completion of a course of special duty at the Central Research Institute, Kasauli, has taken over the duties of Superintendent of the Lunatic Asylums at Agra. Major B. I. Singh, inspector-general of prisons in the Province of Eastern Bengal, has been granted privilege leave for three months. Major E. J. Perry has been selected by the Central Committee for Malarial Fever Investigation for special duty to study the prevalence of malaria in the Jeypur Agency in Northern Madras. Major F. H. Watling has taken over the Medical Charge of the 48th Pioneers at Allahabad. Major J. A. Black, chemical examiner of Bengal, has been selected to officiate as Chemical Examiner of the Punjab Province, vice Lieutenant-Colonel D. Grant. Major S. Hunt has received one year's extension of his leave. The services of Captain J. B. Christian have been placed permanently at the disposal of the Government of Eastern Bengal and Assam. Captain W. W. Jeudwine, district plague medical officer of Gurdaspur, has been granted three months' privilege leave. Captain W. H. Hamilton has been appointed Specialist in Ophthalmology to the Second (Rawal Pindi) Division. Captain S. Whitworth-Jones has received six weeks' extension of his leave home. Captain M. J. Quirke has been mentioned in despatches for "exceptionally good work" done in Somaliland. Captain C. A. Gourlay has been confirmed as Civil Surgeon under the Government of Eastern Bengal and Assam. Captain R. M. Carter, from the Pasteur Institute at Kasauli, has been granted eight months' leave home from India. Captain T. F. Owens has been appointed to officiate as Professor of Chemistry at the Medical College, Calcutta.

Territorial Force.

Royal Army Medical Corps.

2nd South-Western Mounted Brigade Field Ambulance, Royal Army Medical Corps: John Robinson Benson, late Lieutenant, Army Motor Reserve, to be Lieutenant (dated Sept. 16th, 1910).

SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—A meeting of this society will be held at 11, Chandos-street, Cavendish-square, London, W., to-day (Friday) at 8 30 P.M., when Sir Rubert Boyce will read a paper (with lantern demonstration) on Yellow Fever in West Africa, and the following papers, which have been approved by the council, will be presented to the society:—(*a*) Autochthonous Oriental Sore in Panama, by Dr. S. T. Darling, chief of the laboratory, Ancon. (*b*) Tropical Diseases in British New Guinea, by Dr. R. Fleming Jones, Samurai.

Correspondence.

"Audi alteram partem."

PLAGUE AMONG EUROPEANS.

To the Editor of THE LANCET.

SIR,—There seems to be a general impression that plague could not possibly become epidemic among Europeans. As this is likely to lead to viewing the spread of plague-infected lower animals over different parts of the country with comparative complacency, I send you the figures which I submitted to the Colonial Office in May of 1901 regarding the plague outbreaks in Cape Town two months before the last case.

Cases of Plague.

Europeans.	Coloured.	Natives.
164	342	133

Cape Town with its suburbs is a comparatively small town. Rats had died a very considerable time before the outbreak, and when the epidemic began there were very few rats to be seen. The close connexion between rat plague and human plague was only accepted in a half-hearted manner until there was a succession of cases in which dead rats were found in the houses, and in one particularly which was badly infected where 105 dead rats were found under the floor and behind the wainscot and panelling. There is also another impression that plague behaves always in the same way, and that because there was a small percentage of pneumonic cases in India and Cape Town, whilst in Sydney until recently there were no pneumonic cases at all, therefore a small percentage of pneumonic cases is a law of the disease. In 1908 on the Gold Coast there were both bubonic and pneumonic cases of plague, and instead of 4 to 8 per cent. of pneumonic cases there was over 50 per cent.

Until England can deal effectively with her influenza epidemics she cannot afford to sit down and not deal vigorously with the plague-infected lower animals in Suffolk in the hopes that nothing may happen. She may be right; on the other hand, she may be wrong. And the wisest course is to treat the rat plague as *the plague*, and bring every available force to bear to get it out of the land.

I am, Sir, yours faithfully,

King's College, Nov. 15th, 1910. W. J. SIMPSON, M.D.

VOLUNTARY AID DETACHMENTS.

To the Editor of THE LANCET.

SIR,—Lieutenant-Colonel A. C. Yate in his communication on the above subject is not fortunate in his comments upon the British Red Cross Society. He says that almost all the members of the voluntary aid detachments raised by the society hold the St. John Ambulance Association certificate. That is true; but he omits to add that until August 8th, 1910, that certificate was, by an existing arrangement now abandoned, the only one available for the purpose. The detachments referred to were for the most part raised before August, 1910, as Lieutenant-Colonel Yate must be aware. Since that date the War Office has recognised a large series of certificates in first aid and among them the certificates of the county councils. It will follow from this that the preponderance of the St. John certificate will be much less conspicuous in the future.

Your correspondent states that the society has undertaken to provide two things—viz., a manual of instruction and an inspecting staff. The manual employed by the society is the "Manual of the Royal Army Medical Corps," which can be obtained for 9*d*. A special manual has been prepared for the society by Mr. Cantlie and is ready for the printers as soon as it has received the sanction of the War Office. The society never undertook to provide an inspecting staff, nor even contemplated such a provision. The organising secretary of the society, Colonel J. Magill, C.B., undertakes to advise as to the formation of detachments in any district and has done a great deal of work under that head.

Your correspondent complains of the "prodigious" number of forms issued by the society. The form dealing with the whole subject under notice is one in number—viz., Form D.

The work of the British Red Cross Society, in raising detachments throughout the country, is proceeding rapidly and with an enthusiasm worthy of so humane and patriotic a movement. For the success of this work the society has to thank many, and above all the medical men of the country, who have so generously given their assistance.

I am, Sir, yours faithfully,

FREDERICK TREVES,
Chairman of the Executive Committee.

Victoria-street, London, S.W., Nov. 10th, 1910.

MEDICAL ETHICS AND MEDICAL ETIQUETTE.

To the Editor of THE LANCET.

SIR,—In a book on the subject of "Medical Etiquette," by Dr. Surbled of Paris, which has just been translated by Dr. W. P. Grant, and for which, by desire of the author, I wrote a brief preface, I find to my great regret that the excellent lectures of my friend Professor Saundby, which he published in 1902 (second edition in 1907), had quite escaped my memory when I referred to the absence of any recent English literature on the subject. Dr. Saundby's book on "Medical Ethics" is an admirable one.

I am, Sir, yours faithfully,

Grosvenor-place, S.W., Nov. 12th, 1910. DYCE DUCKWORTH.

THE FERTILITY OF THE UNFIT.

To the Editor of THE LANCET.

SIR,—Many writers and speakers take an unfavourable, and some an alarmist, view of the prospects of maintaining the vigour of our race. This is illustrated by a discussion at the recent Church Congress. The unfit, we are told, are increasing faster than the fit elements of the population. Mrs. Pinsent of Birmingham is reported to have said that efforts to improve the race by ameliorating the environment are futile. They only serve to perpetuate the evil conditions which they aim at removing. Heredity, it is averred, will always beat environment into a cocked hat. A journalistic placard announces "The Fatal Fertility of the Poor." The birth-rate among mentally defective persons is declared to be high, whilst that of the middle and upper classes is artificially limited. The last statement rests unhappily on a solid basis of statistics and of common experience, and I do not deal with it here.

But statistics on the fertility of the mentally and physically defective portion of the population are not easy to obtain. Those who have watched the working of natural laws have reason for believing that Nature is always trying to improve the breed and to eliminate defects. From a study of pedigrees and long observation of families I am inclined to agree with this view. Such improvement is effected partly by mixing with healthier stocks, partly by sterilising those which are defective below a certain standard. The sterilisation must be looked for, not in one generation only, but in two or three; that is to say, that if the pedigree of a defective person is traced, then either by combining with better strains the succession is maintained and the defect gradually eliminated, or, if the defect is too great or the new stocks are also defective, the progeny dies out in one, two, or three generations. In the words of Dr. F. W. Mott, dealing with the inheritance of a tendency to insanity, "As a rule, there is either a regression to the normal or the stock dies out."

Thus the unfit disappear, and the fit prevail. It will be said these are only general impressions. Yet are they not consistent with the experience of breeders of animals, with the conditions of the struggle for existence, and with a tendency to be traced all through vital phenomena for the survival of the fittest? But it is said that we have altered the conditions in which Nature is working by preserving alive many unfit who would have died, and by so caring for their welfare as to enable them to increase in the community, and that in this manner the efforts of philanthropy and the kindness of modern civilising agencies in reality tend to the deterioration of the race. This is a serious statement, and can only be fully met by facts and statistics which are not as yet available, but to some of which I will allude presently. In the meantime, two considerations may be advanced. In the first place, the sum total of modern efforts to improve the welfare of all classes of the community, by which the unfit are made less unfit and the fit made fitter, should surely tend to help and not to hinder the progress of the race as a whole. Secondly, to enter into more detail, with regard to those who were born

so physically or mentally defective that they would have died in childhood but for the philanthropic care received, a large number of these will remain below the standard of ability to propagate their kind, and others will be so far raised by the care received as to become sound members of the race. The intermediate class, consisting of those unfit who have been enabled by special aid to live and to become parents, will be subject to the conditions already pointed out; there will be "a regression to the normal or the stock dies out" in a very few generations. These are again general impressions and appeals to probability, but so are the statements which they controvert; we need facts. Well, but we are informed that the birth-rate of the mentally defective is high, and the Report of the Royal Commission on the Feeble-minded is freely referred to in support of this statement. I turn to this Report and find, indeed, mention of various instances of weak-minded women who had large families of children. But when the Commissioners come to sum up the matter judicially they state (vol. viii., p. 198), "With one or two exceptions, sifted and precise statements on the subject are wanting." Again, "It is, we feel, a matter of serious regret that more scientific evidence on the birth- and death-rates of the mentally defective is not forthcoming." It is plain, therefore, that the Report furnishes no sufficient ground for the assertion of a higher birth-rate. Dr. Mott's recent Huxley Lecture[1] on the Hereditary Aspects of Nervous and Mental Diseases touches little on the question of fertility. He states, however: "In a number of pedigrees obtained from an imbecile asylum ..... I observe (though the numbers are not sufficient yet to give any precise data) that the families are prolific ..... but there is relatively a larger number of deaths from various diseases, especially tuberculosis." Such pedigrees, traced upwards from offspring, will naturally deal more with the fertile than with the sterile members of the unfit class.

It would help much to the fuller understanding of this question if vital statistics of the feeble-minded and other varieties of the unfit could be compiled upon a broader basis. They must, however, take note of several generations. It would not be enough to show that feeble-minded women had as large or larger families than sound women, for the vitality and power of procreation possessed by these children must be taken into the account. It will probably be found that many die in infancy and childhood. Meantime, until proof is shown of the exceptional power of the unfit to perpetuate their kind I submit that the opposite view holds the field, and that the influence, both of natural laws and of philanthropic effort, is to raise the stock and not to lower it.

I am, Sir, yours faithfully,

Wimpole-street, W. R. HINGSTON FOX.

CONTINUOUS PROCTOCLYSIS.

To the Editor of THE LANCET.

SIR,—The chief difficulty in the management of continuous proctoclysis lies in the maintenance of the temperature of the saline solution at a uniform degree. The possessor of a "thermos" flask is provided with a simple means of overcoming this difficulty. All the additional apparatus necessary are a U-shaped piece of glass tubing with one arm long enough to reach to the bottom of the flask; three or four feet of rubber tubing attached by one end to the glass tube and connected with the catheter by the other; and, lastly, some means of limiting the flow, such as a metal clip on the rubber tube or the introduction of a tap, such as that supplied with the Rotunda douche. The flask is filled with saline solution at a temperature a few degrees above that at which it is desired to administer the injection, and suspended two or three feet above the patient's bed. The fluid is then run off by syphonage and the flow regulated by the tap or clip. The temperature of the solution will remain at practically the same level, while the bottle slowly empties. At the rate usually advised—viz., one drop per second—only 7½ ounces are used per hour, so that a pint thermos flask will contain sufficient solution to last for two hours.

I am, Sir, yours faithfully,

HENRY W. P. YOUNG, M.D., B.C. Cantab.

Norbury, S.W., Nov. 7th, 1910.

[1] THE LANCET, Oct. 8th, 1910, p. 1057.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

University of Birmingham: The Walter Myers Travelling Scholarship.

THE Council of the University of Birmingham at its last meeting elected Mr. Cranston Walker, M.B., Ch.B., B.Sc. Birm., to the Walter Myers Travelling Studentship, and Dr. Walker has proceeded to the University of Freiburg in Baden to carry out a research under the direction of Professor L. Aschoff. This scholarship, which is becoming one of the most important in the medical school, is of the value of £150 per annum, and was founded by Mr. George Myers of Edgbaston for the promotion of original research, and in memory of his only son, Dr. Walter Myers, a former student of Mason University College, who died from yellow fever contracted in Brazil while investigating the cause of the disease on behalf of the Liverpool School of Tropical Medicine. The Council of the University also approved the election of Mr. John Dale, M.B., Ch.B., B.Sc. (Public Health) Birm., for a further year, he having held the scholarship for the year 1909–10 and having proved himself a student of exceptional merit. Dr. Dale is returning to Hamburg to continue his research work in public health under the direction of Professor Dunbar.

Research Defence Society.

The first public meeting of this society was held on Nov. 1st in the Midland Institute. The President, Professor Leith, presided over a large audience, and Professor P. F. Frankland, F.R.S., delivered an eloquent lecture on the Life of Pasteur. A vote of thanks to the lecturer was proposed by Canon Carnegie of the Cathedral Church and seconded by Mr. Cary Gilson, M.A., the headmaster of King Edward VI.'s Grammar School. It is intended to hold three or four such public lectures each year.

Hospital Saturday Fund.

The entire collection for the present year up to date amounts to £20,194, which is £505 more than last year. The usual grant of £10,000 for the twentieth year in succession has been made to the various hospitals of the city. Since the inception of the Fund the following amounts have been handed to the hospitals: The General Hospital (including the Jaffray Hospital), £104,064; Queen's Hospital, £57,780; General Dispensary, £31,101; Children's Hospital, £23,952; Birmingham and Midland Eye Hospital, £17,741; and Women's Hospital, £12,142. Smaller amounts have been received by other hospitals.

Nov. 16th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

University of Liverpool: Conferring of Honorary Degrees.

THE University of Liverpool on Nov. 14th, at the hands of the Chancellor (the Earl of Derby), conferred the honorary degree of LL.D. on the Earl of Rosebery, the Earl of Cromer, Viscount Morley of Blackburn, Sir Archibald Geikie, and the Right Hon. John Burns. The scene was a brilliant and animated one, to which the undergraduates contributed a long series of topical songs. Preceding the ceremony the Lord Mayor entertained those named above and other distinguished guests at luncheon in the town-hall, where speeches were delivered. At noon Lord Rosebery unveiled a commemorative tablet to be affixed to the Students' Union, and spoke on "The True Functions of a University Union."

Liverpool Select Vestry: Complimentary Dinner to Mr. William Alexander.

Mr. William Alexander, who has recently resigned the office of visiting surgeon to the Liverpool workhouse hospital after 38 years' service, was entertained at dinner by the members of the select vestry, at the Adelphi Hotel, on Nov. 2nd. Mr. T. D. Laurence, the "father" of the select vestry, proposed the health of Mr. Alexander in a flattering speech, and presented him with an illuminated address. Mr. Alexander, in responding to the toast, thanked his hosts for the address and for the kind manner in which the toast was received by those present. He also thanked the nurses of

the hospital, and wished every success to his successor, Mr. Arthur J. Evans.

Tuberculosis in Milk.

A farmer of Moss Wood farm, Stretton, was fined £1 1s. and £10 costs at the Daresbury petty sessions last week for allowing a cow suffering from tuberculosis of the udder to remain in a shippon along with other cows. The deputy town clerk of Warrington stated that in June last a sample of milk was purchased from a shop in Warrington. When analysed by Professor S. Delépine it was found to contain tubercle bacilli. The medical officer of health visited the defendant's farm and saw a cow which did not appear satisfactory. It was decided to take a sample of the milk, and this was found to contain tubercle bacilli. The defendant was asked to isolate the cow from the rest of the dairy stock, and not to sell any milk from the cow for human consumption. When another visit was paid by one of the health officials to the farm he found the cow in the shippon along with other cows. When this was brought to the defendant's notice he replied that he thought the corporation were not troubling about the cow again, and he put her back in the shippon a fortnight before. The defence submitted was that the defendant had committed a technical offence, which really meant that he had failed to isolate the cow. During the whole of the time from the moment isolation was mentioned the milk from the cow had never been sent out to customers.

Nov. 15th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Urgent Plague Precautions.

IN view of the serious occurrence of plague in England the Local Government Board of Scotland has issued an order to all local authorities stiffening the regulations with respect to plague issued in 1902.

Edinburgh School Board and the Medical Inspection of School Children.

An account has been published of the scheme of the Edinburgh school board for the medical inspection of school children. The medical staff consists of the head of the department, who is a medical man, two medical assistants, one of whom is a medical woman, and two nurses. Under the scheme the staff carries out regular visitation of the schools, examination of the pupils, and supervision of cases in which the parents are suspected of neglect. The board is proceeding under two statutes—the Education (Scotland) Act, 1908, and the Children Act, 1908. Three periods in the life of the child are taken as the basis of the medical inspection—the time of enrolment, i.e., at the "infant" school stage, at the age of 9, and at the age of 13, while in addition to the routine examination and inspection special cases are dealt with as they are reported by the teachers. The services of the teachers are utilised in measuring and weighing pupils, and in securing and tabulating data for the health returns. The duties of a headmaster especially in this respect are onerous. No powers are given to the board to provide treatment, the duties of the medical officers being to examine the children, report defects to parents, and bring to the notice of the board children suffering from neglect or cruelty at home. As regards neglected children the board intends to make full use of the powers conferred on it. A definite procedure has been outlined in a circular lately issued to headmasters from the office of the board. This is as follows:—

1. *Notice to the board* to be sent by the headmaster, school medical officer, or attendance officer according to the character of the case.
2. *Warning notice to the parent* to be sent out by the board on receipt of a notice as above from headmaster, school doctor, or attendance officer.
3. *Action by the board.*—If after the "warning notice" improvement in the condition of the child is not effected the parent may be summoned to appear before the board. If on the appearance of the parent an explanation is not forthcoming or proves unsatisfactory, the board may report the case to the Procurator Fiscal of the Sheriff Court in order that proceedings may be instituted against the offending parent under Section 12 (1) (b) of the Children Act, 1908, or Section (6) 2 of the Education (Scotland) Act, 1908.

It is stated that already there is a marked improvement in the condition of children, concerning whom reports have been made to the parents, and that considering the home conditions the efforts made to keep the children clean and wholesome in many cases are surprising. The board is now making arrangements to provide food for the underfed children in the schools, and has approved a plan for creating local or district care committees, which, working under a central committee, will supervise the distribution of food. It is hoped that these local care committees will prove repositories and foci of accurate knowledge with regard to the worst cases in each district, and that the scheme as a whole will lead to a very appreciable difference in the hard lives of many children.

Edinburgh Sanitary Society.

At a meeting of the Edinburgh Sanitary Society on Nov. 10th an address was given by Dr. R. W. Philip on Rest and Movement in Tuberculosis. Dr. Philip first spoke on aerotherapy, which was now one of the widely accepted facts of modern therapeutics. His conviction was, that were the vitalising properties of open air truly realised the larger part of disease would cease to be. Granted that a patient was to be treated on open-air principles, was he to be kept at rest or was he to be allowed movement, and if so, to what extent? The older school of opinion favoured almost complete rest, but in his opinion while rest was helpful, and at certain times essential, prolonged treatment by rest gave unsatisfactory results. The patients might seem to improve, might put on weight enormously, but the increase was usually mere fat, while the skin remained pallid and toneless, and the muscles soft and flabby. The practice of treatment by continued rest proceeded from a faulty conception of the disease. The lesion in the lung was a small part of the illness. The gradual descent downwards—or "decline"—was the expression of a systemic or constitutional intoxication. The toxins produced by the tubercle bacillus appeared especially to affect the neuro-muscular apparatus. The toxin was especially a muscle poison leading to muscular dystrophy. This dystrophy not only affected the muscles of the trunk and extremities but likewise the muscles of the heart, blood-vessels, and other viscera. With such a condition of the muscles the indication was mainly rest, but when the amount of toxin was less the dystrophic muscles tended to recover physiologically if treated by natural movement. Dr. Philip outlined the scheme of physical treatment practised in the Royal Victoria Hospital, which was found to be all that was needed for the majority of patients.

Resignation of the Superintendent of Edinburgh Royal Infirmary.

Colonel W. P. Warburton, C.S.I., superintendent of the Royal Infirmary, Edinburgh, has intimated to the managers of that institution his intention of resigning his post as superintendent. Colonel Warburton entered the Indian Medical Service in 1866 and retired in 1899. During his career in India he held the post of medical officer to the Maharajah of Kaipurthala, and was appointed sanitary commissioner in 1894. Subsequently he held the posts of Inspector-General of Civil Hospitals in the North-West Provinces and Oudh, and of honorary surgeon to the Viceroy of India.

Glasgow Medical Faculty.

A conversazione was held recently by the Royal Faculty of Physicians and Surgeons of Glasgow in the Faculty Hall, St. Vincent-street. About 700 ladies and gentlemen were present, and the gathering was representative of the medical profession in Glasgow and the West of Scotland. A notable feature of the proceedings was the presentation of a mace to the Faculty by Dr. J. Walker Downie. The President, in welcoming the guests, stated that the Faculty had from the very beginning of its career shown a great interest in the medical profession of Glasgow. For the first 250 years of its existence it had practically the sole management of the profession in the city and in a considerable number of neighbouring towns. In these later days they had done a great deal for the profession in a variety of ways. During the past year the late King Edward signified his sovereign pleasure that they should thereafter be called the Royal Faculty of Physicians and Surgeons. They had always been a Royal Faculty in reality, because they were founded over 300 years ago by King James VI. of Scotland, but they never used the title Royal. Whether they were entitled to use it or not he did not know, but at any rate they had now received the right for all time coming to be known as the Royal Faculty.

New Hospital for Skye.

To perpetuate the memory of Dr. MacKinnon of Strath a scheme has been formulated for the building and equipment of a hospital at Broadford, Skye. An ideal site has been secured and plans have been prepared and approved by the local committee. The estimated cost of the building is about £1000. Already a considerable number of subscriptions have been received, the amount in the treasurer's hands being a little over £1600. It has been decided, however, not to commence building operations until a sufficient sum is raised to endow the hospital, and a special appeal for the requisite funds has been issued. The proposed institution will supply a want which has been felt in the east end of the island, as under existing conditions patients have to be conveyed long distances before they can get hospital treatment.

Isolation Hospital for Dumfries and Maxwelltown.

Dr. W. Leslie Mackenzie, of the Local Government Board, performed last week the opening ceremony of the new combination hospital for Dumfries and Maxwelltown for the treatment of infectious diseases at a cost of fully £7000. In declaring the hospital open Dr. Mackenzie spoke in appreciative terms of the vast amount of good work done by voluntary institutions in dealing with infectious disease. Dumfries followed several other towns in providing isolation hospitals for infectious disease, and as these diseases were spread over all classes of the community, it was essentially the duty of the community as a whole to deal with them. He went on to emphasise the need of dealing in a strenuous manner with phthisis, and expressed great satisfaction that, complying with the recommendation of the Local Government Board, local authorities representing over 50 per cent. of the population of Scotland, had already adopted compulsory notification of phthisis.

Dundee Royal Infirmary Staff and Time Gun.

The Dundee Royal Infirmary staff have petitioned the works committee of the Dundee town council on the question of the nearness of the time-gun to the institution. They point out that its firing is injurious to the patients and ask that it should be removed to some other place. The committee, after discussion, agreed that the city engineer should report on the subject at the next meeting and that meantime a less charge of gunpowder should be used.

Nov. 15th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Action by the Local Government Board against a District Council.

LAST week, in the King's Bench Division, before the Lord Chief Baron, Mr. Justice Gibson, and Mr. Justice Boyd, the Local Government Board made application that a conditional order of *mandamus* issued a few months ago against the Kilmallock rural district council should be made absolute. The order directed the district council to appoint a veterinary surgeon as inspector of dairies and cowsheds to carry out the provisions of a sanitary Order of the Local Government Board. In April, 1908, the council had considered the Order, and refused to take any action, marking the Order "read." The Local Government Board informed the council that the Order was of general application. Dr. Browne, Local Government Board medical inspector, visited the union and reported that in the interest of the public health and the creameries of the Kilmallock district the provisions of the Order should be enforced. A long correspondence ensued and the council remained obdurate. Eventually legal proceedings were taken, as stated above, by the Local Government Board. The court unanimously refused the application, with costs against the Local Government Board, the Order being *ultra vires*. The decision is important as the Order sought to be enforced against the Kilmallock council was of general application to the country. Many other councils have also refused to obey, and others have already made these appointments, which they are now likely to cancel on short notice. The decision, in fact, is likely to render nugatory the Dairies and Cowsheds Order of 1908.

A General Anæsthetics Bill.

In view of the fact that the General Medical Council at its present session is to consider a draft of an Anæsthetics Bill sent down from the Privy Council, the President of the Royal Academy of Medicine in Ireland (Sir Charles Ball) recommended a special meeting of the Academy to consider the entire subject. As dentists are much interested in the question, the members of the Irish Branch of the British Dental Association were invited to be present and to take part in the discussion. The dentists showed more interest than the Fellows of the Academy, some dozen and a half only of the latter being present and at least twice as many dentists. After discussion the following resolutions were adopted:—

1. That it is desirable in the public interest that the administration of general anæsthetics to render persons unconscious during any medical, surgical, obstetrical, or dental operation or procedure, should be restricted by law to registered medical practitioners, with the exception of nitrous oxide gas and such other anæsthetics as may from time to time be sanctioned by the Privy Council, which may be administered by a registered dentist.
2. That provision should be made for the practical instruction in anæsthetics of medical and dental students.
3. That the specification of the anæsthetic substances or drugs which may thus be employed by registered dental practitioners during dental operations or procedures should be made in a schedule to the proposed Act of Parliament, power being reserved to the Privy Council, on the recommendation of the General Medical Council, as the authority charged with the publication of the British Pharmacopœia, to add to or vary the specified list from time to time as occasion arises.
4. That the administration of local anæsthetics for producing insensibility to pain during any surgical or dental operation or procedure by the introduction beneath the skin or mucous membrane of any fluid or other substance by means of a hypodermic needle or in any other way, should be restricted by law to registered medical practitioners, to registered dentists, or to persons acting under the immediate supervision of a registered medical practitioner or a registered dentist.

Poor-law Reform.

A conference on Poor-law reform will be held in the Mansion House, Dublin, on Wednesday, Dec. 7th. Invitations have been addressed to the clerk of each union in Ireland in the hope that one or more members of each board of guardians will attend. The object of the conference is to elicit a definite expression of opinion from guardians in favour of some one of the methods of reform which have been proposed in the report of the Viceregal and Royal Commissions. The conference has been organised by the Philanthropic Reform Association and the Irish Workhouse Association.

Conferring of Degrees in University College, Galway

Following on the conferrings of degrees in Dublin and Cork a meeting of the Senate of the National University was held last week, in University College, Galway, for the purpose of conferring degrees. It was the first time that such a ceremonial had taken place in Galway. It is gratifying to know that the scenes of disorder which took place at Dublin and Cork were not repeated in Galway.

The Ulster Medical Society.

The session 1910–11 opened on Nov. 10th. A very hearty vote of thanks, moved by Dr. H. O'Neill and seconded by Dr. A. G. Robb, having been accorded Dr. J. J. Austin, the retiring President, the incoming President (Sir Peter O'Connell) proceeded to give his introductory address on "The Present Position of the Poor-law Service in Ireland as bearing specially on the Medical Profession," and advocated a State medical service. The President invited a discussion, in which the following gentlemen joined: Dr. Robb (who said that 95 per cent. of the practitioners of Ulster and 90 per cent. of those in Connaught had signed the paper in favour of a State medical service, and he hoped that Leinster and Munster would go equally united for it), Dr. C. Kevin, Mr. R. Hall, Sir John Byers, Dr. O'Neill, Mr. W. Burns, Dr. J. S. Darling, Professor T. Sinclair, and Dr. J. Walton Browne. There was a marked unity of opinion in favour of a State medical service, which it was recognised would be best for the country, would raise the status of the medical profession in the Poor-law service, and would improve the public health of the country. On the motion of Dr. John Campbell, seconded by Dr. W. Calwell, a hearty vote of thanks was passed to the President for his address.

Women's National Health Association of Ireland.

Lady Aberdeen, founder and president of the Women's National Health Association of Ireland, spoke at the annual meeting of the Belfast branch on Nov. 8th and at Ballymena on the next day at the yearly assemblage of the Mid-Antrim branch. Very encouraging reports were presented at both meetings. In Belfast (the Lord Mayor presiding) the Moderator of the General Assembly, the Catholic and the Protestant Bishops, Dr. Marion Andrews, and Mr. H. W. Ballie

took part, while at Ballymena Mr. R. Currie and Dr. W. R. Davison addressed the meeting.

Belfast Asylum.

The report of the Inspectors of Lunatics (Dr. E. M. Courtenay and Mr. I. M. Considine) was read on Nov. 14th at a meeting of the asylum committee of the city council of Belfast. They write in the highest terms of the Purdysburn asylum and hope that no time will be lost in disposing of the old institution in Grosvenor-road, Belfast, and transferring the inmates to new quarters at Purdysburn, where they will enjoy all the advantages of country life and pure air, together with the advantage afforded by beautiful buildings and good surroundings. 1245 people are now on the books of the asylum—583 males and 662 females—792 in the old asylum at Belfast, 339 at Purdysburn, and 54 in Ballymena workhouse. The medical officers are all praised for their work and their care of the inmates.

A Case of Cerebro-spinal Meningitis in Belfast.

An inquest was held on Nov. 9th at the Recorder's Court, Townhall-street, to inquire into the death of a child aged 6 years. Professor W. St. Clair Symmers, who made a post-mortem examination, stated that death was due to cerebro-spinal meningitis.

Nov. 15th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Trephining in Simple Fractures of the Skull.

AT a meeting of the Society of Military Medicine held on Nov. 8th M. R. Picqué recommended lumbar puncture as one of the first steps in the treatment of simple fractures of the skull. He said that it was indispensable as a means of diagnosis, but a further operation was required if the general symptoms persisted after the puncture, and the surgeon should trephine as soon as the least local sign indicated the precise locality. M. Moty said that trephining was plainly indicated when there was severe intracranial pain which resisted ordinary treatment; opening and draining the arachnoid cavity distinctly relieved the pain. M. Jacob, M. Sieur, and M. Rouvilois said that lumbar puncture was sufficient in a great number of cases; they thought that systematic trephining was not necessary when the patient did not present any sign of cerebral localisation or compression and when there were only symptoms of excitement; lumbar puncture gave the patient the same advantages as trephining. In support of their opinions they quoted cases in which patients suffering from fracture of the base of the skull had recovered without any operation other than lumbar puncture.

The Floods.

The river Seine is once more in flood and rising in so alarming a manner that the inhabitants of the *banlieue* are hastily removing their furniture and leaving their homes. In Paris the water is making its way into the cellars of the houses along the quays and the steamboats have had to stop running. At Javel and at Auteuil the water washes over the wharves. The cellars of the wharves on the Quai d'Austerlitz are being emptied, ventilators on the ground-level are being closed, and it is feared that the Hôpital Boucicaut may have to be evacuated. The whole of the *banlieue* in the neighbourhood of the river is flooded and other parts are threatened. On all sides the officials of the Department of Public Works are taking measures of protection against the rising water and are endeavouring to prevent a breakdown of the supply of electric current such as the floods caused last year, with the result that tramway traffic was stopped in a great many parts of Paris.

New Organic Preparations of Arsenic.

At a meeting of the Academy of Medicine held on Nov. 8th M. Armand Gautier said that although he had not spoken on the subject of organic arsenical compounds since the year 1901 he had, nevertheless, been the first to obtain such organic preparations of arsenic as the cacodylates, the methylarsenates, and arrhenal, in which toxicity was reduced to a minimum, while their therapeutic value in certain diseases was truly remarkable. He showed that in syphilis a combination of mercury with arsenical preparations gave excellent results. Since the year 1895 the cacodylates have been employed in the Hôpital Saint-Louis, in the wards of which Dr. Danlos had charge, injections of them being given in doses varying from 0·60 gramme to 0·80 gramme per day; they have also been prescribed in the Hôtel-Dieu and the Hôpital Boucicaut.

Provincial Sanitary Conference.

The first Provincial Sanitary Conference organised by the Society of Public Medicine and Sanitary Engineering was held recently at the Pasteur Institute. Dr. Roux, who presided, said that this society last year played an important part in connexion with public health legislation, and had now brought together the superintendents of the health offices, the departmental inspectors of health, and various administrative authorities for the purpose of considering the applications of the new statute. M. Herriot, mayor of Lyons, then explained his views on the subject of modern hospitals, with especial reference to the suburban hospital which was about to be built at Lyons. It would occupy a site of 156,000 square metres and would contain 1200 beds, of which 150 would be reserved for infectious cases. M. Herriot has adopted the system of separate compartments, such as were in use at the Pasteur Institute. The hospital would naturally consist of detached pavilions, of which there were 18, all communicating by means of underground passages. The laboratories would be in the basement, the ground floor and the first floor would be occupied by patients, and the upper floors would be used for the accommodation of the officials. M. Lemoine, principal medical officer at Val de Grâce, then presented a report on the etiology and prophylaxis of typhoid fever, and a discussion followed in which M. Guillemin, M. Chantemesse, M. Zipfel, M. Panel, M. Granjux, M. Julien, M. Calmette, M. Gautrez, M. Courmont, and M. Rossi took part.

The Use of Radium in Dermatology and Rhinology.

At a meeting of the Société de Médecine de Paris, held on Nov. 11th, M. Lagarde and M. Masotti presented a communication on the Use of Radium in Dermatology and Rhinology. They said that in a number of cases patients suffering from conditions included under these headings might derive benefit from the employment of radium. This substance was already in daily use for the treatment of nævi, cancroid growths, lupus of the nose, cancers, leucoplasia, and lichen of the oro-pharynx. It seemed probable, moreover, that other tumours of the nasal fossæ (sarcomata, epitheliomata, and tuberculous growths) might benefit from the same applications, and that certain zones of the nasal mucous membrane, localities liable to polypus and varix, might be favourably influenced. Some other diseases such as maxillary sinusitis, hypertrophied tonsils, and laryngitis might also be successfully treated by radiferous substances combined with insoluble salts. Lantern pictures of patients who had recovered under this treatment were shown. In the subsequent discussion M. Druelle said that he recognised the features of one of the patients who had been shown on the screen as recovered, and he believed that this person had recently died from epithelioma in the Hôpital Saint-Louis. M. Levassort said that when photographs of patients were publicly exhibited care should be taken to make individual recognition impossible, but recognition in this case may have corrected a blunder.

A Coöperative Restaurant for Female Students.

A General Association of Female Students was formed in Paris last June, and a coöperative restaurant for the use of the members has now been established at No. 55, Rue Saint-Jacques, where a repast consisting of soup, meat, sweets or dessert, bread, and wine is provided for 1 franc; for 5 o'clock tea the charge is 25 centimes. A number of gentlemen occupying official positions attended the inaugural ceremony when the restaurant was opened on Nov. 6th, the company including M. Liard, vice-rector of the Academy; M. Lavisse, director of the École Normale Supérieure; the Presidents of the Municipal Council and of the General Council; and Professor Landouzy, dean of the Faculty of Medicine.

Nov. 14th.

Mrs. Amy Mary Macdonald, M.D., widow of the late Dr. Donald Macdonald of Stornoway, and eldest daughter of Mr. J. Galloway Weir, M.P., died at her residence, "Lyndale," Harlesden, N.W., on Monday, after a long and painful illness.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Treatment of Tabes Dorsalis by Mercury.

IN a paper read before the Vienna Medical Society, Professor Redlich discussed the results obtained by him in the treatment of tabes dorsalis with mercurial preparations. His statistics were based on observations made on 308 private patients, of whom 282 were men and 26 were women—a proportion of 11 to 1. Of these patients, 44 per cent. had presented evident symptoms of syphilis, and another 26 per cent. acknowledged having had an "ulcer" without being aware of secondary manifestations, so that 70 per cent. of them were to be regarded as certainly suffering from specific infection. Wassermann's reaction was also positive in 70 per cent. of the patients examined; 19 persons with no history of syphilis gave a positive Wassermann reaction. Amongst the 308 cases of tabes only 19 per cent. had been subjected to regular antisyphilitic treatment commencing immediately after infection (whatever effect this treatment may have had it at least did not prevent the occurrence of tabes); 41 per cent. had had only an irregular treatment and 40 per cent. had had no antisyphilitic treatment at all. Professor Redlich subjected all cases to a mild mercurial course, combined with hydrotherapeutic, thermic, and gymnastic procedures. In no case did the mercury produce any unfavourable effect; several patients were distinctly benefited by it, whilst in others it had no perceptible action whatever. It was administered in moderate doses, mostly by inunction but sometimes by injections. The disease remained in a stationary condition in about 10 per cent. of the cases; in acute exacerbations mercury was decidedly indicated. A combination of tabes with progressive paralysis was not influenced at all; *crises gastriques* and atrophy of the optic nerve were very refractory. Professor Redlich thought that only cases in an early stage, and acute exacerbations of existing disease, were suitable for this mercurial treatment, and that optimistic expectations were not warranted. It could not be said that the effect of Ehrlich's new remedy, "606," was beneficial under such conditions, and it remained to be seen whether patients treated with this substance would escape subsequent tabes or paralysis.

A Debated Question of Professional Secrecy.

The death of a celebrated actor in Vienna, who also held a high position in society, has caused in medical circles renewed discussion as to the maintenance of secrecy in the relations between a patient and his medical advisers. The actor, who was an important personage in our principal theatre, was suffering from advanced internal cancer. The regularly appointed physician to the theatre, a man of high professional standing, was the first to discover the nature of the disease, and the question then arose whether or not he ought to inform his chief (the director of the theatre) as to the state of the actor's health. One prominent feature of the case was that the actor was on the point of renewing a contract with the theatre, and this would have had the effect that the performances would have been arranged on the understanding that he would appear in them. In the result the medical man decided to inform the director, but in order to avoid alarming the patient the contract was made just as if he had been in good health. Meanwhile an operation had to be performed, and when the facts became known to the public, which here is very sensitive in all matters pertaining to theatres and music, the attitude of the medical man was severely criticised from opposite points of view, some blaming him for making any disclosure at all and others for having withheld what ought to have been made known. Needless to say, the medical man soon pointed out that the public was not entitled to any information which he might possess regarding the actor's personal health; and he also maintained that with respect to the director of the theatre, he was in a position comparable to that of a medical man to an insurance company or other corporation, in being obliged to disclose to his employer the diseases from which patients suffered. In medical circles he is exonerated from blame, but the public seem to be unwilling to accept his explanations.

An Austrian Cancer Committee.

The results obtained in other countries have led to the formation in Austria of a committee with a view of combating cancer. The original members of this committee are Professor von Eiselsberg, Professor Fränkel, Professor Hochenegg, Professor Schauta, Professor Paltauf, and Professor Weichselbaum, these being the leading surgeons, gynæcologists, and pathologists respectively of the University of Vienna. As soon as the preliminary work of the committee is finished a Cancer Society will be constituted. This society will draw the attention of the general public to the necessity of seeking medical advice at the very earliest appearance of suspicious symptoms, but its principal object will naturally be the prosecution of scientific research. Lectures and discussions dealing with this subject, periodical publication of the work accomplished by its members, and grants for the promotion of original investigation will be the leading features of the programme of the Cancer Society. Some time ago, when Professor Chrobak was at the head of the Vienna Medical Society, similar action was taken, when a leaflet entitled "Principiis Obsta" ("At the Commencement") was distributed amongst the female patients in the Vienna hospitals in order to draw their attention to such symptoms as required careful observation.

The New Radium Institute.

The new Radium Institute, the largest of its kind, was recently opened with much ceremonial display in presence of His Imperial Highness the Archduke Reiner, the Protector of the Academy of Sciences. The institute has been established by an anonymous gift to the Academy, the only stipulation being that the institute must be erected before the end of the year 1910. The entire outfit has also been provided by private liberality. The institute will be devoted to research only, and will not be used for teaching purposes. It has two distinct departments, intended respectively for physical and for chemical research. The latter, which will, for instance, undertake the determination of atomic weights, is situated in the basement and first floor of the building. On the first floor there is also the apparatus for the examination of waters and minerals for radio-activity, as well as for similar investigations in regard to air collected at different places. The institute possesses a total quantity of 3 grammes of radium bromide, valued at 1,000,000 kronen, or £45,000, presented by the Academy of Sciences of Austria. The investigation of the atomic weight of radium will be entrusted to Dr. Hönigschmidt; researches will also be carried on for the standardisation of radio-activity by determining an international unit for this purpose. The Congress for Radiology held in Brussels elected an international committee for the purpose of deciding on such a unit, the Austrian representatives being Professor Stephen Meyer and Professor Schweidler. The institute has no lecture-hall, being entirely restricted to research, and medical treatment will not be within the scope of its work.

Nov. 14th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

The Public Health.

THE invalid and the valetudinarian—a "constant quantity," if not an increasing one, in the annual contingent of foreign travel—need be under no misgiving in setting out for this or that Italian health resort in quest of warm, salubrious air and immunity from "epidemics," prevailing or sporadic. Alarmist reports notwithstanding—reports, as I have authority for stating, industriously diffused from transalpine quarters, where "warnings" against a sojourn in Italy are even printed on the *menu* of many a *table d'hôte*—the cities and seaboards of the Italian mainland and islands are as safe as ever they were for the foreign visitor. Cholera is practically *une quantité négligéable*, as the following figures, officially checked and countersigned, will suffice to prove. From midnight to midnight of one day last week there was in the province of Girgenti (Sicily) but one case and no death; in the province of Palermo one case and no death; in the province of Lecce two cases and no death; in the province of Caserta (Neapolitan) two new cases and one death of a patient previously notified; in the province of Rome one case at Tarrácina (Pomptine Marshes) and no death; while of the previously notified cases bacteriological examination has given positive results in one

case at Brindisi and two at Cancello Arnone and a negative result in one at Brindisi. In fact, but for the undoubted presence of the disease in Southern Italy these last few weeks the cases now reported would have passed unnoticed, except by the State experts; certainly they would have caused no alarm in the resident, and acted as no deterrent to the foreigner. Another point may be indicated as distinctly reassuring. In those cases where the disease has been bacteriologically ascertained, recoveries have been far more frequent than deaths, clearly proving that medical treatment, immensely more efficient than in past visitations, has robbed the "Asiatic intruder" of some portion of his terrors. All the same, the reports above referred to are still active and effective enough to deter the travelling world from its accustomed resort to Italy this autumn, and hotel-keepers throughout the kingdom may well be downcast. I know of several well-appointed establishments, justly held in high repute by the English-speaking visitor, which for weeks past have been able to boast of but one guest—a "Robinson Crusoe" vainly looking out for a "Man Friday."

The Weather.

Rarely has the Storm King run such riot throughout the Italian mainland and islands as during the last ten days, and only now are we beginning to realise the width and depth of the damage and misery he has left behind. On the Neapolitan Riviera bodies swept out to sea from the island of Ischia by the recent "nubifragio" are being fished up from time to time, leaving many others unaccounted for, except on the hypothesis that they have been, as was found after the Siculo-Calabrian cataclysm of Dec. 28th, 1908, devoured by sharks. What with earthquakes, cyclones, cloudbursts, and inundations, southern and even central Italy has had experience enough, telluric and atmospheric, to make the year now closing an "annus mirabilis." Decade by decade such visitations become frequent enough to warrant a claim to "periodicity," and to justify the French nature-student, in these latitudes especially, when he cried, "Ah! Monsieur, la terre est si nerveuse!" Meteorology, nowhere more assiduously than at the Italian observatories, is working at the causes of these perturbations, coincident with, if not consequent upon, "liberties taken with the earth's crust," in tree-felling and mining particularly. Grateful, indeed, will the world be if, in the French phrase, "la pathologie tellurique" rewards its students with knowledge enough to restore health and stability to the soil and equilibrium to the atmosphere—doubly grateful in the near future when aerial navigation tends to supplement, if not to replace, the terrestrial locomotion now hardly capable of further development.

Alpine Misadventure.

For the year ending on Oct. 31st there were 90 deaths incurred by mountaineers, expert or amateur, on the Swiss and Italian ranges, and 80 cases of injury, of which four are expected to end, if they have not already ended, fatally. The causes were the traditional ones—to wit, starting without a guide, avalanches, detachment of rocks, snapping asunder of ropes, sudden mists, and heart failure while "clearing" a crevasse or "negotiating" an awkward or risky corner. It is no longer the Englishman who makes himself a "candidate" for such a fate—the majority of victims having been Swiss, then Germans, then Englishmen, Austro-Hungarians and Italians coming next. Aviation, however, bids fair to outstrip "peak-storming" in its death roll if the present year's statistics are to be taken as earnest of the future.

Nov. 12th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

The Physical Condition of Army Officers.

General Leonard Wood has issued an army order to the effect that all officers serving in the Department of the East shall take such constant and regular physical exercise as may be necessary to keep themselves at all times in physical condition to perform active duty with troops under war conditions. Post commanders are directed to arrange schemes for the exercise of officers under their command. All officers, save under certain specified conditions, are to exercise, preferably in the open, at least one hour a day, the standard being "a ride of four miles, or a walk of three miles within an hour," with the permissible substitution of "equivalent athletic sports or exercises" for variation. The order seems to be generally accepted in army circles as an excellent thing. General Wood has already shown the advantages of such training in the promotion of sanitation and hygiene in the army; it is, he believes, a factor of prime importance in the efficiency of troops as a fighting machine.

Pasteurised Milk for Infants in New York.

Mr. Nathan Straus, who now for some years has maintained at his own expense in New York depôts for the supply of pasteurised milk for the feeding of the infants of the poor, a few weeks ago announced his intention of discontinuing them because of the continual criticism of his methods. As the progressive decrease in the infant death-rate in that city seems to have been due in a considerable measure to his efforts, many citizens considered that until the city should be ready to continue his work the closing of these depôts would be a public calamity. A mass meeting was accordingly held on Oct. 8th at the Cooper Union, in which many prominent men, including such well-known persons as Professor Irving Fisher (of Yale), Father J. J. Curran, Commissioner C. J. Driscoll, Dr. Abraham Jacobi, and Secretary of State Koenig, were present. The meeting was attended by some 2000 people. The service rendered to the community by Mr. Straus's philanthropic efforts on behalf of the children of the poor was gratefully and gracefully acknowledged, and means were discussed of continuing the work in case Mr. Straus could not be induced to rescind his expressed determination. On Oct. 24th Mr. Straus held a conference with a committee appointed at a meeting of philanthropic agencies held on Sept. 7th, and as a result of its appeal he will continue for awhile the work initiated by him, in the hope that the city may take it up, and that other depôts in addition to the eight already sustained by himself may be opened by the efforts of others.

Prophylaxis against Cholera.

The Public Health and Marine Hospital Service is showing praiseworthy activity in respect of the threatened danger of the introduction of cholera into the United States. A death from cholera in quarantine at New York on an incoming vessel, and the subsequent development of another case on the same vessel, led to the instant coöperation of the service with the State health authorities. Intending emigrants to the United States from infected ports abroad are now detained for five days before being allowed to sail, and are again detained for the same space of time here in quarantine before being allowed to land. On release from quarantine such suspects will have to state their destinations, and information cards will be forwarded each day to the health officer of each place to which such persons are going, so that they may be kept under observation. A notable circumstance is the absence of panic following the discovery of the arrival of cholera cases in this country, a difference from the public emotion which followed the introduction of the disease on previous occasions, notably in 1892. This is a good sign of the increasing confidence in the effectiveness of official vigilance.

Abolition of the Public Drinking Cup.

Boston has abolished, under a regulation of the Massachusetts State Board of Health, the use of the public drinking cup in public parks, streets, buildings or premises used as a public hotel, theatre, public hall, or public school, railway station or car, steamboat or ferry-boat. Bubbling drinking fountains have been installed in many places and individual paper cups are rapidly being adopted.

The Antituberculosis Campaign.

The new Sanatorium Directory, issued by the National Association for the Study and Prevention of Tuberculosis, shows over 400 sanatoriums and hospitals, 300 special tuberculosis dispensaries, and some 450 special antituberculosis associations and committees now existing in the United States. The first such directory was issued in 1904, and showed only 133 sanatoriums and hospitals, 32 special dispensaries, and 39 antituberculosis organisations; so that the increase in the last six years in antituberculosis agencies amounts to nearly 500 per cent. The directory also contains a summary of what has been effected by the various State legislatures and county and municipal governments in aid of the war against tuberculosis in this country.

Nov. 8th.

Obituary.

DR. LANCEREAUX.

Dr. Lancereaux has just died at the age of 80 years after a few days' illness from pneumonia. He was born at Brécy-Brières, in the Ardennes, on Nov. 27th, 1829, and during the early part of his professional career was in somewhat straitened circumstances, but his energy and capacity for work eventually raised him to a position of eminence. He was admitted *interne* in 1857, hospital physician in 1869, *agrégé* in 1872, and member of the Academy of Medicine in the Section of Pathological Anatomy in 1877, becoming president of the Academy in 1908. He made a number of original investigations, chiefly on questions of pathology, and in studying the lesions discovered post mortem he always endeavoured to trace their connexion with the symptoms observed during life. At first he interested himself mainly in disorders of the nervous system. His researches on nervous diseases due to syphilis were published at the end of his *internat* in 1861; his thesis on cerebral thrombosis and embolism appeared in the same year, and his memoir on meningeal hæmorrhage in 1863. Soon after this period he began to apply himself to the study of organic diseases produced by certain toxic agents; lead palsy and other

symptoms of lead poisoning were among the subjects on which he now worked, but it was in connexion with the visceral lesions attributable to the use of alcoholic beverages that his views attracted most attention. In consequence of the diversity of their composition such beverages act on the system in a variety of ways, and Dr. Lancereaux in elaborating this idea has given a clinical description of the special symptoms produced by absinthe-drinking. Subsequent researches on similar lines led him to the conclusion that the disease known as alcoholic cirrhosis was not one of the ordinary ills of life to which any kind of fermented liquor might give rise. Taking for granted that it occurred in wine-drinkers only, he sought for the toxic agent and convinced himself that it was neither alcohol nor any product of the vinous fermentation, but a mineral salt, bisulphate of potassium, and experiments which have been made on animals seem to confirm this view.

Dr. Lancereaux published a considerable number of works, including an Atlas of Pathological Anatomy, which appeared in 1871; an Historical and Practical Treatise on Syphilis in 1866 (with a second edition in 1873); a Treatise on Pathological Anatomy in 1875–85; a Treatise on Herpes in 1883; various volumes of clinical lectures in 1883, 1890, 1892, and 1894; a Treatise on Diseases of the Liver and Pancreas in 1899; and quite recently a Treatise on Gout. One of his most important discoveries was the relationship between diabetes and disease of the pancreas. Several observers had preceded him in remarking the frequency of lesions of the pancreas in diabetes, but he had the merit of recognising that a form of the latter disease with characteristic clinical symptoms—wasting diabetes—dependeo on inadequacy and ultimate destruction of the pancreas. It was in 1877 that he pointed out the special features of this condition—namely, the sudden onset, the immediate loss of flesh, the intense thirst and craving for food, and the rapid progress of the disease. On clinical and pathological grounds he called it pancreatic diabetes, a designation which has been justified by the subsequent observations of von Mering and Minkowski.

HUGH NORRIS, L.R.C.P., L.R.C.S. EDIN., L.S.A.

Mr. Hugh Norris died recently at his residence in South Petherton, Somerset, in his ninetieth year. Mr. Norris was born at South Petherton, where his father was a well-known medical practitioner and archæologist. He belonged to a very old Somerset family. His grandfather, Henry Norris, a famous schoolmaster at Taunton, is stated on a tablet in St. James's Church in that town to have been proficient in 24 languages, while another member of the family founded the first Taunton newspaper in 1725. In 1554 an ancestor, John Norris, represented Taunton in Parliament, and during the Civil War another member of the Norris family raised a troop of horse for King Charles.

Hugh Norris received his medical education at Edinburgh University and qualified L.R.C.S. of Edinburgh in 1848, being admitted L.R.C.P. of Edinburgh ten years later. After holding resident appointments at the Royal Maternity Hospital, Edinburgh, he joined his father in practice at South Petherton, where he soon became very popular. Shortly after settling down to practice he drew attention to a state of defective mental development associated with bodily deformity or arrested growth which existed in the village of Chiselborough, near South Petherton, in the "forties" of the last century. A correspondent writes as follows to us about Norris's observations:—

> Chiselborough is situated in a small valley closely surrounded on three sides by hills, about 400 or 500 feet in height, and at the time of the existence of this uncommon disease the lowest part was very damp and dirty, the temperature being very mild, and the village was open only towards the west, where flowed a deep sluggish river called the Parrett. In recording the occurrence Mr. Norris described the inhabitants as "unfortunate beings," exceedingly unprepossessing, small in stature—one, a female, aged 30, only reaching three feet and a half—and in most cases thick-set. Their heads were large and covered with a profusion of very coarse ragged or bristly hair of a dark brown colour, while their limbs were bony and exceedingly ill-formed. The contour of the face was wide and flat, forehead very low, and slightly receding. The eyes were small and sunken, the nose flat, almost like that of a negro, the mouth large, and the lips thick. The walk of these cretins, if they might be so called, was most ungainly, and resembled more the waddle of a duck while they were generally very weakly both physically and intellectually. Out of a population of about 540 Mr. Norris found some twenty were idiots, while the majority had an obvious deficiency of intellect, were more than usually dull of perception, had a very marked impediment in their speech, and were, he believed, without an exception, affected with the disease known as bronchocele. He was of opinion that the cause of the malady was the effect of a combination of circumstances. The water was of a very inferior quality, the air very impure from the absence of any current through the village in consequence of its being so closely hemmed in on three sides by hills, as well as from a great quantity of decaying vegetable matter at certain seasons of the year arising from the orchards in the immediate neighbourhood, while several stagnant pools also existed in the place. Circumstances such as these combined to render the village so uninviting to strangers that intermarriage among the poor inhabitants was most prevalent; and thus, said Mr. Norris, was unwittingly completed the unfortunate combination of circumstances which may have produced such miserable results.

We are unaware if this vivid piece of clinical observation received the attention which it would seem to have deserved.

Mr. Norris took a great interest in archæological pursuits, as did his father before him, and formed an interesting collection of great local archæological value, which he presented to the county museum at Taunton, where it is known as the "Norris Collection." He had at one time an extensive practice in West Somerset but for several years he had retired from active work. In his younger days his literary bias was strong and he contributed articles to THE LANCET and other medical papers, and was besides the author of an interesting topographical note, "South Petherton in the Olden Time,"

as well as of several instructive papers communicated to the Somerset Archæological Society; while he was the first editor of "Somerset and Dorset Notes and Queries."

The funeral took place at South Petherton on Nov. 4th.

VIOLET ACKROYD TURKHUD, M.D., B.S. LOND.

THE medical women of India have lost a colleague by the death of Miss Violet Ackroyd Turkhud in Bombay from enteric fever. She was educated at Bedford College and the London School of Medicine for Women. She qualified in 1906, taking the degree of M.B., B.S. Lond. After some post-graduate work in England, she went to India, where for some months she was on the staff of the Dufferin Hospital, Delhi. Next she was in charge of the Women's Hospital, Alwar. In 1909 she returned to England and took the degree of M.D. Lond., with honours in pathology. After working for some months at the School of Tropical Medicine, Liverpool, she obtained the Diploma in Public Health. In February, 1910, she went back to India and began a practice in Bombay. She was engaged in research work in pathology at the Cancer Hospital for some months before her death, which occurred on Oct. 18th. Her cheeriness of disposition made her universally popular. She was a keen student and an enthusiastic worker in her profession, and her untimely death, at the beginning of what promised to be a most useful and distinguished career, is mourned by a wide circle of friends both in India and in England.

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At a meeting of the Comitia of the Royal College of Physicians of London on Oct. 27th, and of the Council of the Royal College of Surgeons of England on Nov. 10th, Diplomas of L.R.C.P. and M.R.C.S. were respectively conferred upon the following gentlemen, who have passed the Final Examination of the Conjoint Examining Board and have complied with the by-laws of the Colleges:—

William Arthur Anderson, B.A.Cantab., Cambridge University and Queen's College, Belfast; Richard William Annison, Middlesex Hospital; Sydney Vere Appleyard, St. Thomas's Hospital; Helton Godwin Baynes, Cambridge University and St. Bartholomew's Hospital; Benjamin Bernstein, London Hospital; Guy Capper Birt, L.D.S. Eng., St. Thomas's Hospital; Aleck William Bourne, B.A. Cantab., Cambridge University and St. Mary's Hospital; Edmund Boyd, B.A., M.B. Toronto, Toronto University and University College Hospital; Edward Geoffrey Stayner Cane, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; William Edgar Carter, Leeds University; Alfred Ernest Dagnall Clark, St. Bartholomew's Hospital; Guy Barton Cockrem, Guy's Hospital; Leonard Kingsford Cooper, University College Hospital; James Cowan, Manchester University; Oswald Tilson Dinnick, M.B. Toronto, Toronto University and London Hospital; Arthur William Donaldson, Oxford University and St. Thomas's Hospital; Sandbrook Falkner, London Hospital; *Walter Egbert Fox, Guy's Hospital; Alfred John Gibson, St. Bartholomew's Hospital; Alexander Kennedy Glen, Glasgow University, St. Mary's and Middlesex Hospitals; Wilfrid Montague Glenister, St. Bartholomew's Hospital; Ernest St. George Sagar Goodwin, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Frank Cyril Greig, Otago University and University College Hospital; Alexander Keith Hamilton, St. Thomas's Hospital; Hubert Alfred Harris, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Arthur Stanley Heale, London Hospital; Augustus Joseph Hickey, Westminster Hospital; Arthur Hilary Clifton Hill, Middlesex Hospital; John Percival Hill, M.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Jordan Constantine John, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; William Henry Talfourd Jones, King's College and Guy's Hospitals; Joseph Bagnall Jordan, Birmingham University; Theodore Hartmann Just, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Charles Dones Killpack, Guy's Hospital; Clifford Yule Laing, Manchester University; William Bertram Laurence, University College, Cardiff, and Middlesex Hospital; Martin Wentworth Littlewood, St. Thomas's Hospital; Albert Victor McMaster, B.A., Queen's College, Belfast, and London Hospital; Godfrey Kindersley Maurice, St. Mary's Hospital; Rustom Dhunjibhoy Mody, L.M.S. Bombay, Bombay University and University College Hospital; Carl Euclid Molino, Birmingham University; Gustave Jean Philippe Monod, M.D. Paris, Paris University; Raymond Montgomery, Leeds University and Guy's Hospital; Albert Ernest Moore, London Hospital; Gilbert Moore, Cambridge University and King's College Hospital; Henry Clarence Wardleworth Nuttall, Liverpool University; Charles Edward Hewitt Paley, Westminster Hospital; Georg Natanael Palmaer, London Hospital; Henry Brice Parker, Bristol University and London Hospital; Ardeshir Beheramshah Pestonji, B.A., L.M.S. Bombay, Bombay University and London Hospital; Harold Ferdinand Renton, Leeds University and Guy's Hospital; William Reynolds, L.D.S. Eng., Guy's Hospital; Quintin Hume Richardson, Guy's Hospital; Behram Pestonjee Sabawala, L.M.S. Bombay, Bombay University and London Hospital; Herbert Henry Sampson, M.B., Ch.B. Birm., Birmingham University; Alexander Rutherford Prinski Scott, London Hospital; William Faulkner Valentine Simpson, London Hospital; Charles James Stocker, Cambridge University and St. Bartholomew's Hospital; Martin Phillips Thomas, Glasgow University, Cardiff and University College Hospitals; Graham Yalden Thomson, Guy's Hospital; Richard Teodor Timberg, St. Mary's and St. Thomas's Hospitals; Henry Shemeld Tumber, Sheffield University; Arthur Bayford Guy Underwood, University College Hospital; Wallace Robert Wade, M.B., Ch.B. Liverpool, Liverpool University; Percy Boyd Wallis, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Hugh Wetherbee, London Hospital; *Edward Vernon Whitby, M.B., Ch.B. Birm., Birmingham University; and Sydney Williams, University College, Cardiff, and London Hospital.

* Diploma of M.R.C.S. conferred on Oct. 13th, 1910.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the First Professional Examination in Anatomy and Physiology for the Diploma of Fellow, held on Nov 3rd, 4th, 8th, 9th, 10th, and 11th, 117 candidates presented themselves, of whom 39 were approved and 78 were rejected. The following is a list of the successful candidates:—

Casement Gordon Aickin, M.B., Ch.B. Otago, Otago University and Middlesex Hospital; Francis Gordon Bell, M.B., Ch.B. Edin., Edinburgh University and King's College; Ellis Campbell Bowden, London Hospital; Geoffrey Williams Carte, B.A. Oxon., Oxford University and St. Bartholomew's Hospital; Arthur Chance, B.A., Trinity College, Dublin, National University of Ireland; James Harris Connolly, M.D., Ch.B. Edin., Edinburgh University and London Hospital; Charles Harold Crawshaw, B.A. Cantab., Cambridge University and King's College; Michael Joseph Cronin, London Hospital; Francis Eldon Daunt, St. Thomas's Hospital; Hector Wynne Davies, University College; Richard Denis Davy, London Hospital; George Rowland Dobrashian, University College; Victor William Draper, B.Sc. Lond., King's College; John Everidge, L.R.C.P., M.R.C.S., King's College; Philip Ferguson, M.B., Ch.B. Manch., Manchester University and London Hospital; Walter Barham Foley, St. Thomas's Hospital; Philip Julius Franklin, L.R.C.P., M.R.C.S., King's College and Middlesex Hospital; Henry George Frean, M.B., B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and London Hospital; Robert Coltart Harkness, M.B., Ch.B. Edin., Edinburgh and Manchester Universities and King's College; Charles Colgate Holman, B.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., Cambridge University and Guy's Hospital; Robert Lister Horton, University College; Cecil Meredyth Jones, University College, Cardiff, and Westminster Hospital; Charles Matheson Kennedy, L.R.C.P., M.R.C.S., London Hospital; Farquhar McGillivray Loughnane, St. Thomas's Hospital; Robert John McConnell, Belfast University and London Hospital; Kenneth Mackenzie, M.B., Ch.B. Edin., Otago and Edinburgh Universities and King's College; Henry Price Malcolm, Queen's University, Belfast, and London Hospital; Henry Hugh Mathias, Cambridge University and London Hospital; Jivray Narayan Mehta, L.M.S. Bombay, Bombay University and London Hospital; Alexander Croydon Palmer, L.R.C.P., M.R.C.S., London Hospital; Joseph Michael Petty, B.A. Cantab., Cambridge University and King's College; Edward Rayner, B.A. Cantab., Cambridge University and St. Thomas's Hospital; John Magnus Redding, Charing Cross Hospital; Pierre Roux, London Hospital; John Thompson, M.B., B.S., B.Sc. Lond., M.B., Ch.B. Vict., Manchester University and London Hospital; John Raymond Waddy, B.A. Cantab., Cambridge University and King's College; Gilbert Bertram Warburton, M.B., Ch.B. Manch., Manchester University; David Waterston, M.D., M.Ch., F.R.C.S. Edin., Edinburgh University and King's College; and Syer Barrington White, B.A. Oxon., Oxford University and Westminster Hospital.

At a meeting of the Council on Nov. 10th licences to practise dentistry were conferred upon the following gentlemen, who have now complied with the by-laws:—

Percy George Hastings Cox-Moore, Charing Cross and Royal Dental Hospitals; George Vivian Dymott, Guy's Hospital; John Trude Fripp, Middlesex and National Dental Hospitals; Arthur William Johnson, Charing Cross and Royal Dental Hospitals; and John Knowles, Charing Cross and Royal Dental Hospitals.

At the First Professional Examination for the Licence in Dental Surgery held this month the following gentlemen were approved in the under mentioned subjects:—

Mechanical Dentistry and Dental Metallurgy.—Henry John Farrow Alexander, Royal Dental Hospital; Oswald Gelling Aylen, Charles Layton Balkwill, and Horace Edgar Bampton, Birmingham University; Victor Louis Sydney Beckett, Royal Dental Hospital; David Cohen Bernstein, Birmingham University; Charles Cecil Blundell, Royal Dental Hospital; Robert Leslie Booth, Birmingham University; Alan Darcy Buck, Guy's Hospital; Cyril Holland Child, Royal Dental Hospital; James Percy Cocker, Leeds University; Herbert Howard Cooke, Royal Dental Hospital; George Basil Cooksey, Liverpool University; Eric Sutton Dickin, Liverpool University; Gilbert George Ellis, Manchester University; Louis Edward Forster, Liverpool University; John Harvey Havers Griffin, Guy's Hospital; Robert Karl Gundlach, Royal Dental Hospital; John Gordon Harris, Manchester University; Harold Harvey, Birmingham University; Thomas Eric Henderson and Montagu Fred Hopson, Guy's Hospital; George Denis Iles, Leeds University; Andrew Lawrey, Iorwerth Hubert Lloyd-Williams, William Douglas McDonald, Gerald Struan Marshall, and William Henry Matthews, Royal Dental Hospital; Donald Bernard Morrish, Guy's Hospital; Charles Edward Murch, National Dental Hospital; Hugh Bertram Neely, Guy's Hospital; Charles Justin O'Callaghan, Royal Dental Hospital; William Parry, Liverpool University; Ivan Wallace Pasmore, Guy's Hospital; Arthur Norman Paul, Royal Dental Hospital; Leonard Robert Pickett, Guy's Hospital; Gilbert John

Stuart Rose, National Dental Hospital; Max Schneider, Guy's Hospital; Sydney Frank Simpson and William Joseph Singleton, Royal Dental Hospital; Frank Bedford Stradling and Whalley Seath Stranack, Guy's Hospital; Percival Washington Symons, Royal Dental Hospital; Sidney Thomas Taylor, National Dental Hospital; John Alphonsus Tighe, Royal Dental Hospital; Thomas Bernice Tustian, Guy's Hospital; George Lotan Venning, National Dental Hospital; and Reginald Wallace White, Royal Dental Hospital.

Mechanical Dentistry.—Patrick Boyle, Royal Dental Hospital; Arnold John Chapman, Guy's Hospital; Edmund Rupert Dermer, National Dental Hospital; Philip Louis Ealand, Bristol University; Clementson Glover, Guy's Hospital; George Hobbs, Birmingham University; Charles Henry Housden, Guy's Hospital; Michael William Joseph and Denis Foster Lewis, Birmingham University; Lancelot Turtle Montgomery, Raphael Neft, Percy John Peatfield, Charles Joseph Phillips, and John Hampden Ross, Guy's Hospital; Leslie Shovelton, Birmingham University; and Joseph Leslie Tucker, Royal Dental Hospital.

Dental Metallurgy.—Marcel Adé, Lausanne University; Francis Edward Stuart Brailsford, Royal Dental Hospital; Ralph Alexander Broderick, Birmingham University; Henry O'Neil Butler, Montague Kempston Butler, and Gordon Robert Craig, Royal Dental Hospital; Gwilym Tremain Davies, National Dental Hospital; Harold Graham Elliott and William Trevor Flooks, Guy's Hospital; William Francis Gawne, Liverpool University; Walter Henry Glover and Ernest Sharman Huckett, Guy's Hospital; Hubert Humphry, Royal Dental Hospital; Bertrand Kemp Jackson and Reginald Charles Kershaw, Liverpool University; John Farnham Mace, Birmingham University; Gustavus Leigh Pemberton, Guy's Hospital; Arthur Ridges Rowe, National Dental Hospital; Archibald Frank Salsbury, Guy's Hospital; Alan Douglas Edward Shefford, National Dental Hospital; and Frank Wisher, Guy's Hospital.

DONATIONS AND BEQUESTS.—Queen Alexandra has given £100 to the Prince Francis of Teck Memorial Fund. Among the gifts promised is one of £2000 "In Memoriam."

THE NOBEL PRIZES.—The Nobel Prize for chemistry, which amounts to 195,285 francs (£7811) has been awarded to Professor Otto Wallach of Göttingen University.

MEDICAL FEES AT THE LYME REGIS COTTAGE HOSPITAL.—At the annual meeting of the subscribers of the Lyme Regis (Dorset) Cottage Hospital, which was held on Nov. 3rd, some discussion arose in reference to the question of fees. A subscriber stated that some of the patients at the institution had had to pay for the services of the medical man, and this, he contended, was entirely against the principles of a cottage hospital. The chairman, in reply, said one of the rules stated "that those patients who in the opinion of the finance committee could afford to pay the medical attendant's fees should do so," and he added that if any medical officer charged fees without the finance committee's sanction he infringed that rule. After some discussion a subcommittee was appointed to confer with the medical officers on the matter.

MEDICAL FEES UNDER THE MIDWIVES ACT.—The Woolwich borough council has sent a circular letter to the other metropolitan borough councils with reference to the provisions of Section 17 of the Midwives Bill, relating to the payment by boards of guardians of fees to medical practitioners summoned upon the advice of a certified midwife in cases of emergency, more particularly in cases of infants suffering from inflammation of the eyes. The letter states that the Woolwich borough council is strongly of opinion that the London County Council should be the authority to pay the fees of medical practitioners instead of the board of guardians, and that the Lord President of the Council has been asked to amend the Bill in the direction indicated. The other metropolitan borough councils are requested to take similar action.

UNIVERSITY OF OXFORD: RADCLIFFE PRIZE, 1910–1911.—The next award for this prize will be in the year 1911. The prize, which is of the value of £50, is awarded by the Master and Fellows of University College every second year for research in any branch of medical science comprised under the following heads: Human anatomy, physiology, pharmacology, pathology, medicine, surgery, obstetrics, gynæcology, forensic medicine, hygiene. The prize is open to all graduates of the University who shall have proceeded or shall be proceeding to a medical degree in the University. Candidates must not have exceeded 12 years from the date of passing the last examination for the degree of Bachelor of Arts and must not at the date of application be Fellows on the foundation of Dr. John Radcliffe. Candidates must send in their memoirs to the University Registry on or before Dec. 1st, 1910. The award will be made in March, 1911.

THE ROCKEFELLER INSTITUTE.—The following appointments have been made to the staff of the Rockefeller Institute for Medical Research: Dr. Francis Henry McCrudden, Dr. Thomas S. Githens, Dr. James B. Murphy, Dr. A. R. Dochez, Dr. F. Medigreceanu, and Dr. W. H. Manwaring.

NEW CHEMICAL LABORATORIES AT UNIVERSITY COLLEGE, LONDON.—In April we brought before our readers an appeal for £70,000 for providing new chemical laboratories at University College, London, including the purchase of a site in Gower-place. The death of the King a few days before the date arranged for a meeting at the Mansion House, and the consequent postponement of the meeting gave a check to the work of the appeal committee. Sir Henry Roscoe, chairman of the appeal committee, has now laid before the public the urgency of the situation in which the appeal is placed. The appeal has two objects. The first is to raise a sum of £25,000 for the acquisition of the proposed site which adjoins the College, and which, Sir Henry Roscoe points out, is an eminently suitable one. The second is to raise £45,000 to erect the laboratories. The sum of £25,000 must be raised before next Christmas Day if the Senate of the University is to be in a position to exercise the option which it holds to purchase the site. Towards this sum the committee has collected over £9000, leaving a balance of £16,000 to be raised forthwith. The sum which has been already collected has come to a large extent from members of the University and friends of the College. The Chancellor, Lord Rosebery, has headed the subscription list with £1000. Substantial help has also been given by the City Companies and by several prominent business houses. The Drapers' Company have promised £500, provided the site is secured before the expiry of the option. The Merchant Taylors' Company have promised £262 10*s.*, while the Grocers' Company have contributed £250 and the Fishmongers' Company £105. With respect to the contributions from business houses it may be mentioned that the Liebig's Extract of Meat Company have contributed £105, while Messrs. Glyn, Mills, Currie and Co. and Messrs. Spencer, Chapman, and Messel have each given £100. Other important contributions are £500 each from His Grace the Duke of Bedford, Mr. Otto Beit, and Mr. James Eccles. Sir Henry Roscoe appeals "to all those who realise the national importance of scientific research and its bearing upon the commercial prosperity of the country, to those Londoners who desire to see university teaching in London developed in accordance with the needs of the nation, and also to the many friends and admirers of Sir William Ramsay, the Professor of General and Inorganic Chemistry at University College, to assist in the attempt to provide new chemical laboratories by gifts which will ensure the acquisition of the site." Donations should be addressed to Sir Henry Roscoe at University College, London.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BERKELEY, COMYNS, M.B., B.C. Cantab., F.R.C.P. Lond., has been appointed an Examiner in Obstetrics at the University of Oxford.

BUNN, R. A., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.

CUNNING, JOSEPH, M.B., B.S. Melb., F.R.C.S. Eng., has been appointed Surgeon to the Cancer Hospital.

CUSHNY, A. R., M.B., M.S. Aberd., has been appointed an Examiner in Materia Medica at the University of Oxford.

DALTON, ERNEST C., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.

DODDS-PARKER, A. P., M.B., B.S. Oxon., F.R.C.S. Eng., has been appointed an Examiner in Human Anatomy at the University of Oxford.

GOTCH, FRANCIS, M.R.C.S., F.R.S., has been appointed an Examiner in Physiology at the University of Oxford.

GOVAN, ROBERT, M.B., B.S. Glasg., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.

HOPE, CHARLES W. M., M.D. Durh., F.R.C.S. Eng., has been appointed Assistant Surgeon to Golden-square Throat Hospital, W.

HUGHES, W. STANLEY, M.R.C.S., L.R.C.P. Lond., has been appointed Medical Superintendent of the North Wales Asylum.
ILLINGTON, E. M., Major, I.M.S., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.
KIDD, PERCY, M.D. Oxon., F.R.C.P. Lond., has been appointed an Examiner in Medicine at the University of Oxford.
LEISHMAN, Sir WILLIAM B., M.B., M.S. Glasg., has been appointed an Examiner in Pathology at the University of Oxford.
LOOSELY, CHARLES J., M.R.C.S., L.R.C.P. Lond., has been appointed Anæsthetist to the Hospital for Sick Children, Great Ormond-street, W.C.
MILNE, CHARLES, Major, I.M.S., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.
NEVY, C O., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.
PRIDMORE, J. W., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ryde District of the Isle of Wight.
REES, W. T., M.R.C.S., L.S.A., has been appointed Medical Officer to the Llanwrtyd Urban District Council.
RUSSELL, M. J., L.R.C.P. & S. Irel., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.
SMITH, F. J., M.D. Oxon., F.R.C.P. Lond., has been appointed an Examiner in Forensic Medicine and Hygiene at the University of Oxford.
STIFF, H. H., M.B. Cantab., has been appointed Medical Attendant to the Alexandra Home for Children, Bury St. Edmunds.
TAGGART, C. C., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.
TREADGOLD, H. A., L.R.C.P. Lond., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.
WHITTON, JAMES, M.D. Irel., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.
WRIGHT, GARNETT, M.B., Ch.B. Edin., F.R.C.S. Eng., has been appointed Honorary Assistant Surgeon to the Salford Royal Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ALBERT DOCK HOSPITAL, Connaught-road, E.—Senior House Surgeon, also House Surgeon, both for six months. Salary £100 and £50 per annum respectively, with board, residence, and washing.
BETHLEM HOSPITAL.—Resident House Physician, unmarried, for six months. Salary at rate of £25 per quarter, with apartments, board, and washing.
BERWICK, COUNTY OF.—Medical Officer of Health. Salary £400 per annum.
BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary £100 per annum, with board and attendance.
BODMIN, CORNWALL COUNTY COUNCIL.—County Medical Officer of Health. Salary £500 per annum.
BRISTOL ROYAL INFIRMARY.—Honorary Dental Anæsthetist.
CARDIFF INFIRMARY (GENERAL HOSPITAL).—Senior Resident Medical Officer. Salary £120 per annum, with board, washing, and apartments. Also House Surgeon for six months. Salary £30, with board, residence, and laundry.
COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with rooms, board, washing, and attendance.
DUBLIN, ROYAL HOSPITAL FOR INCURABLES, Donnybrook.—Resident Medical Officer, unmarried. Salary £120 per annum, with board and apartments.
EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Resident Medical Officer. Salary £100 per annum, with board, residence, and laundry. Also Medical Officer for six months. Salary at rate of £100 per annum, with luncheon and tea provided.
EDMONTON UNION INFIRMARY, Bridport-road, Upper Edmonton.—Two Resident Assistant Medical Officers, unmarried. Salary of first officer £140 per annum, and second £120 per annum.
HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with rooms, board, and washing.
HEREFORDSHIRE COUNTY COUNCIL.—Assistant Medical Officer of Health. Salary £250 per annum.
HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale, W.—Resident Medical Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.
KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, apartments, laundry, &c.
KENT EDUCATION COMMITTEE.—Medical Inspector of School Children. Salary £250 per annum.
KIRKMABRECK PARISH.—Medical Officer. Salary £40 per annum.
LAMBETH, PARISH OF.—Chief Medical Officer. Salary £500 per annum, with furnished house, and allowance of coals, gas, and water.
LONDON COUNTY OF.—Twenty-eight Assistant School Doctors in Public Health Department of London County Council. Salary £120 per annum.
LONDON LOCK HOSPITAL.—House Surgeon and Assistant House Surgeon to Female Hospital. Salary £100 and £80 per annum respectively, with board, lodging, and washing. Also House Surgeon to Male Hospital. Salary £100 per annum, with board, lodging, and washing.
LONDON TEMPERANCE HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £105 per annum.
PUBLIC DISPENSARY, 122, Drury lane, W.C.—Resident Medical Officer. Salary £105 per annum, with apartments.
ROBERT BROWNING SETTLEMENT, Walworth, S.E.—Honorary Superintendent.
ROYAL HOSPITAL OF BETHLEM, Lambeth-road, S.E.—Resident Physician and Medical Superintendent. Salary £750 per annum.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—Assistant House Surgeon for six months. Salary £20, with luncheon and tea.
ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square, W.—Honorary Anæsthetist.
SALFORD COUNTY BOROUGH FEVER HOSPITAL.—Assistant Medical Officer. Salary £150 per annum, with apartments and board.
SALFORD ROYAL HOSPITAL.—Honorary Assistant Surgeon.
SHEFFIELD CHILDREN'S HOSPITAL, EAST END BRANCH.—House Surgeon. Salary £70 per annum, with board, lodging, and washing.
SHEFFIELD UNION HOSPITAL.—Resident Assistant Medical Officer, unmarried. Salary £100 per annum, with apartments, rations, &c.
SOUTH UIST.—Medical Officer. Salary £100, with house.
STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.
STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, and washing.
STOCKTON-ON-TEES, STOCKTON AND THORNABY HOSPITAL.—House Surgeon, unmarried. Salary £180 per annum, with residence, board, and washing.
STOKE-ON-TRENT, COUNTY BOROUGH OF.—Medical Officer (female). Salary £250 per annum.
STROUD GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.
THROAT HOSPITAL, Golden-square, W.—Resident House Surgeon. Salary £75 per annum, with board, residence, and laundry.
UNIVERSITY COLLEGE HOSPITAL, Gower-street, W.C.—Resident Medical Officer.
UNIVERSITY OF LONDON.—Examiners.
WARMINSTER UNION, Wilts.—District Medical Officer and Public Vaccinator. Salary £90 per annum.
WEST HAM AND EAST LONDON HOSPITAL, Stratford, E.—Two Honorary Physicians and Three Honorary Surgeons. Also House Surgeon. Salary £100 per annum, with board and rooms.
WEST LONDON HOSPITAL, Hammersmith-road, W.—Assistant Physician. Also Honorary Medical Registrar. Also House Physician for six months. Board, lodging, and laundry allowance provided.
WESTMINSTER HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with board and residence.
WINDSOR, KING EDWARD VII. HOSPITAL AND DISPENSARY FOR WINDSOR, ETON, AND DISTRICT.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, laundry, &c.
YORK COUNTY HOSPITAL.—House Physician. Salary £100 per annum, with board, residence, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Twyford, in the county of Berks.

Births, Marriages, and Deaths.

BIRTHS.

BOUSFIELD.—On Nov. 15th, at Princes-square, W., the wife of Stanley Bousfield, M.D., of a son.
BRAINE-HARTNELL.—On Nov. 12th, at Weston House, Cheltenham, the wife of Christopher Braine-Hartnell, F.R.C.S. Edin., of a son.
DANIEL.—On Nov. 14th, at Upper Wimpole-street, W., the wife of Peter Daniel, F.R.C.S., of a son.
THOMSON.—On Nov. 7th, at Blenheim-place, Edinburgh, the wife of H. Torrance Thomson, M.D., of a son.
YOUNG.—On Nov. 8th, at Camden-crescent, Dover, the wife of Dr. Francis Percy Young, of a daughter.

MARRIAGES.

COPE—NORTON.—On Nov. 9th, at St. Mark's, Brighton, Ricardo Cope, M.R.C.S., to Ethel Amy, youngest daughter of the late George Norton and of Mrs. Norton.
HAY—BECK.—On Nov. 12th, at St. Augustine's, Broxbourne, Herts, Kenneth Robert Hay, M.B., to Rachel, second daughter of Mr. and Mrs. Ernest Beck.
MACKENZIE—KENNEDY.—On Nov. 16th, at St. Luke's, Nightingale-lane, S.W., by the Right Rev. Bishop Welldon, the Rev. Canon Clarke, and the Rev. B. Dulley, Stephen Morton Mackenzie, M.A., M.B., B.C., of Rose Hill, Dorking, eldest son of the late Sir Stephen Mackenzie, M.D., of Cavendish-square, to Edith Madeline, eldest daughter of the late Arthur Kennedy of 4, Clement's Inn and Epsom.
WATSON—FITHIAN.—On Nov. 11th, 1910, at the Marshall-street Presbyterian Church, Portland, Oregon, U.S.A., by the Rev. Charles Hays, D.D., William Bertram Watson, M.D. Lond., of Harrogate, son of the late John Watson of Stockton-on-Tees, and Mrs. Watson of Ilkley, to Pauline Chapman, only daughter of Mr. and Mrs. O. H. Fithian of Portland, Oregon, U.S.A.

DEATHS.

CAVERHILL.—On Nov. 4th, at Jedneuk, Jedburgh, the residence of his brother, Thomas Francis Spittal Caverhill, F.R.C.P. Edin.
TOOVEY.—On Nov. 6th, at Jebba, Southern Nigeria, Thomas Edward Fraser Toovey, F.R.C.S. Edin., West African Medical Staff, aged 43.
TURKHUD.—On Oct. 15th, at Bombay, India, from enteric fever, Violet Ackroyd Turkhud, M.D., B.S. Lond.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE DETECTION OF WORM-EATEN DRUGS.

A CONTRIBUTION to the literature concerning the examination of drugs was made by Professor H. G. Greenish in a paper read at this month's evening meeting of the Pharmaceutical Society. It is not a difficult matter to distinguish sound from worm-eaten drugs when the samples examined are in the crude state, but hitherto no satisfactory method has been suggested for detecting powdered drugs prepared from drugs which have been attacked by insects. Professor Greenish and Miss D. M. Braithwaite, however, have been investigating the subject, and in the paper referred to describe a method by which the presence of minute traces of the drug-room beetle (*Sitodrepa panicea*) in powdered drugs can be shown. This little insect belongs to the family of which the various members are to be found in old houses, furniture, and palings, in collections of dried plants, in biscuits, and in many other substances. The quantity of mature beetle present in an infested drug is so small that its detection by direct examination under the microscope is practically impossible, and some other method had therefore to be devised. This consists in destroying the organic matter of the powdered drug by a process which leaves nothing but sand and particles of beetle which are separated by centrifugation, washed, and mounted. The particles of beetle are then readily detected under the microscope by their conspicuous brown colour, and most of them exhibit either hairs or the scars of hairs. By this means it is possible to detect so small a quantity as 0·00001 gramme of beetle in 5 grammes of powdered drug. Professor Greenish and Miss Braithwaite have examined a number of specimens of powdered drugs and spices and have found particles of beetle in ginger, nutmegs, coriander, dandelion root, ergot, and belladonna root and leaves. So ubiquitous is the pest that considerable discretion must be exercised before condemning a powder in which traces only of it can be detected. At the same time Professor Greenish and Miss Braithwaite express the opinion that although its presence does not appear to be injurious to health, it seems obvious that powders prepared from worm-eaten spices or drugs should not be offered for sale to the prejudice of the purchaser, or in undue competition with those prepared from sound materials.

"SCIENCE AND SINGING."

To the Editor of THE LANCET.

SIR,—Had your reviewer been more up to date in the matter under consideration the reading of my book would not have given him such a violent shock, for he would have known that in November last year (that is two months after the publication of "Science and Singing") Dr. Marage of Paris presented to the Académie des Sciences an account of his laryngological experiments, and he stated therein that he had come to the conclusion that the vocal cords do not in themselves produce sounds. Further, I have before me as I write a copy of *Le Bulletin Médical* (of Paris) of April 17th, 1887, wherein mention is made by medical men of different cases where patients have both talked and sung after the extirpation of the vocal cords.

Letters from medical men bearing testimony to the practical value of my work can be seen in the *Musical Standard* of Jan. 15th and 22nd of this year. I will close with an extract from a French review of my book just to hand: "Les esprits superficiels n'y verront qu'une hérésie de plus en la matière; mais je n'hésite pas à penser que ceux qui le liront attentivement se laisseront convaincre, et sauront gré à l'auteur d'avoir en assez d'indépendance pour exposer ses propres idées."

I am, Sir, yours faithfully,

Broadwood's Studios, Conduit-street, W., Oct. 21st, 1910. ERNEST G. WHITE.

*** We cannot accept Mr. White's physiology, though it has, in his opinion, been supported by Dr. Marage; we should be interested to hear Dr. Marage's views on Mr. White's book.—ED. L.

CONFERENCE ON CHOCOLATE AND COCOA.

AT the International Food Congress which was held in Paris in 1909 there were many discussions on the subject of what should constitute purity in cocoa and chocolates, but the findings of the Congress were not universally accepted. A desire has arisen for a special Congress in connexion with the subject, and it has been arranged that such should take place in Paris in January, 1911, when there will be present delegates from Germany, England, Austria-Hungary, Belgium, Brazil, Spain, the United States, France, Holland, Italy, Mexico, and Switzerland. The Congress will be limited to five representatives from each nation, and each nation will only have the right to one vote. The Congress is being arranged under the auspices of the White Cross Society of Geneva, whose delegate in the United Kingdom is Mr. Loudon M. Douglas, F.R.S.E., of 3, Lauder-road, Edinburgh.

THE ALLEGED SPECIFIC ORGANISM OF YELLOW FEVER.

To the Editor of THE LANCET.

SIR,—You will greatly oblige me by stating what was really the so-called *Micrococcus tetragenus fevre flava*, discovered by Dr. Carlos I. Finlay, of this capital city of Cuba, as the germ of yellow fever. I have a vague remembrance that Dr. George M. Sternberg made a thorough study of that discovery.

I am, Sir, yours faithfully,

A. M. FERNANDEZ DE YBARRA, M.D., Lately of New York City.

Havana, Cuba, Oct. 24th, 1910.

*** The organism which Dr. C. Finlay of Havana claimed to have identified as the specific microbe of yellow fever was carefully investigated on behalf of the United States Government by Dr. G. M. Sternberg, who reported adversely of Dr. Finlay's discovery. This same expert also investigated the contention of several other discoverers who put forward certain other microbes, each as the true cause of yellow fever, but equally with unfavourable results. The germ of the disease has not been discovered beyond dispute; and authorities are fairly well agreed that it almost certainly is not a bacterium but a protozoon, ultra-microscopic and therefore not recognisable with our present means. The Micrococcus tetragenus, as known to bacteriologists at the present time, is often found in suppuration in the region of the mouth or neck, and it also occurs in the lungs. It probably has a pyogenic action in the human subject. It is often found associated with other micro-organisms. When injected into mice it causes septicæmia. Cases of pyæmia in man have been reported where the M. tetragenus was found in pure culture.—ED. L.

THE DESTRUCTION OF FLEAS.

To the Editor of THE LANCET.

SIR,—In answer to "Medicus," I give my experience. During residence in a workhouse infirmary, which involved frequent visits to the receiving ward, I kept drops of eucalyptus oil on (*a*) ankles, (*b*) wrists, and (*c*) neck, with successful results. I also carried a chloroform drop-bottle for emergencies. At another time, being resident in a hospital, and my bed being infested with pulices, I emptied one ounce of eucalyptus oil on the mattress. Cats and padded chairs have been treated successfully in the same way. The practice of fixing bags of camphor on the bottoms of the trousers is of comparatively little use. As for the destruction of fleas, dust is proved to be favourable, if not necessary, for their morphological changes. According to the "Cambridge Natural History," the Pulex irritans breeds freely in an uninhabited apartment. The larva of the Pulex serraticeps (cat and dog flea) has been reared on the sweepings of an ordinary room. The development of a generation of the serraticeps appears to be two or three weeks.

I am, Sir, yours faithfully,

Nov. 12th, 1910. FLEBILIS OCCIDIT.

A SUGGESTION FOR TREATMENT OF ARTHRITIS OF THE KNEE-JOINT.

To the Editor of THE LANCET.

SIR,—In reply to "M.D." (THE LANCET, Nov. 5th, p. 1392), I may say that his best plan would be to attack his arthritis vigorously at once. For this purpose there is nothing more certain than the method recommended by Dr. P. W. Latham and practised by myself with gratifying success (see THE LANCET, April 6th, 1901, and Sept. 7th, 14th, and 28th, 1907).

I am, Sir, yours faithfully,

Bournemouth, Nov. 10th, 1910. W. J. MIDELTON.

PURE TOBACCO.

To the Editor of THE LANCET.

SIR,—Your readers might wisely try the following. Get leave from the Excise authorities to buy a pound or more of real good leaf tobacco from any good manufacturer, and then find a good A.B. in the Royal Navy and get him to do the "baccy" up in "perique" fashion, as used in the Navy. I have used it for years, and you certainly get the real tobacco flavour. I sometimes think a little additional flavour would be advantageous—I am now smoking some Havanna leaf done up in perique fashion—and certainly most of the "mixtures" now sold are atrociously adulterated, though they have the "flavour" and so are pleasant smoking.

I am, Sir, yours faithfully,

Nov. 15th, 1910. HOLLINS CROSS.

THE BLIND SOCIAL AID SOCIETY.

To the Editor of THE LANCET.

SIR,—The Blind Social Aid Society hopes that you will be good enough to assist them in their endeavours for the welfare of the blind by inserting this letter in your columns. We wish to bring to public notice the excellent qualifications and abilities of the properly educated blind in their various professions and trades, musicians, tuners, brush, basket, mat makers, &c., to the end that they may have the assistance of the many persons who would gladly give them employment if they but knew of them. We propose to give a series of local concerts round London, by which we hope successfully to advertise the blind working in the various districts, and shall be pleased to hear from Church

secretaries and others having halls seating 200 or more who would like us to come and give them a first-rate concert. By the coöperation of the Churches and ourselves we hope to secure good audiences and also more employment for those who, though so heavily handicapped, are thoroughly well qualified and anxious to become self-supporting.

Replies will be gladly received by the honorary secretary.

5, Minories, London, E.C. ALFRED CARR.

SUPERSTITIOUS REMEDIES.

To the Editor of THE LANCET.

SIR,—In the *Standard* of yesterday (Nov. 11th) there is a paragraph quoted from THE LANCET about a superstitious cure for shingles, &c. It struck me as a strange coincidence that the Welsh name for shingles is "eryrod" = eagles. I wonder how that came about?

Trusting this may be of interest to your readers,

I am, Sir, yours faithfully,

Aberystwyth, Nov. 12th, 1910. (Miss) SUSAN WILLIAMS.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1910:—

Nov. 11th-19th (London).—Stanley Exhibition.

In 1911:—

Feb. 20th-25th (Cairo).—Fifth International Congress for the Blind.

March 2nd-6th (Berlin).—Thirty-second Balneological Congress.

April 4th-7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.

May-October (Dresden).—International Hygiene Exhibition.

May-October (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)

May-October (?) (London, Shepherd's Bush).—Coronation Exhibition.

June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.

July (Birmingham).—British Medical Association.

August or September (Berlin).—Third International Laryngo-Rhinological Congress.

September (Brussels).—Exhibition of Fractures.

Sept. 11th-16th (The Hague).—Thirteenth International Congress on Alcoholism.

,, 18th-23rd (Sydney).—Australasian Medical Congress.

,, 24th-30th (Rome).—International Congress on Tuberculosis.

,, 25th-29th (Rome) Seventh International Congress of Dermatology and Syphilology.

October (Cologne).—International Congress of Criminal Anthropology.

In 1912:—

July (?) (Cologne).—International Congress of Nurses.

September (Prague).—International Congress of Radiology and Medical Electrology.

September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.

In 1913:—

(London).—Seventeenth International Congress of Medicine.

In 1915:—

(London).—International Prison Congress.

(London).—Imperial Exhibition (?)

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

TUESDAY.

MEDICAL SECTION (Hon. Secretaries—A. F. Voelcker, Sir John F. H. Broadbent, Bart.): at 5.30 P.M.

Paper:

Dr. F. Craven Moore and Dr. L. Kilroe: The Use of Belladonna in Dyspepsia.

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—J. P. Lockhart Mummery, T. R. Whipham, G. S. Haynes) at 11, Chandos-street, W.: at 4.30 P.M.

Cases and Specimens.

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 P.M.

Paper:

Dr. J. Edward Squire, C.B.: Some Points in Relation to Tuberculosis and its Prevention.

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.

MONDAY.—8 P.M., Mr. C. R. Darling: Industrial Pyrometry. (Lecture I.)

WEDNESDAY.—8 P.M., Sir Henry H. Cunynghame: Methods of Detecting Fire Damp in Mines.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—8.30 P.M., Mr. J. E. R. McDonagh: Treatment of Syphilis by "606," with demonstration of illustrative cases.—Mr. R. Warren: Punctured Wounds of the Heart.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. H. G. Adamson: Clinique (Skin). 5.15 P.M., Lecture:—Mr. T. C. English: Diagnosis and Treatment of Chronic Intestinal Obstruction.

TUESDAY.—4 P.M., Dr. C. T. Williams: Clinique (Medical). 5.15 P.M., Lecture:—Dr. J. L. Bunch: Some Methods of Treating Skin Diseases.

WEDNESDAY.—4 P.M, Mr. T. P. Legg: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. A. Latham: The Administration and Value of Tuberculin in Various Forms of Tuberculosis.

THURSDAY.—4 P.M., Dr. E. Cautley: Clinique (Medical). 5.15 P.M., Lecture:—Dr. A. Latham: The Administration and Value of Tuberculin in Various Forms of Tuberculosis.

FRIDAY.—4 P.M., Mr. W. Stuart-Low: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Edwards: Urinary Surgery.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Low: The Prevention of Tropical Diseases.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine.

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. R. H. Cole: The Modern Treatment of the Insane.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Mr. Dunn: Diseases of the Skin. 5 P.M., Lecture:—Dr. Abraham: Cases of Skin Disease.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. Carling: Operative Treatment of Fractures.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. McGavin: Operative Dangers in General Practice.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. H. Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie). 4.30 P.M., Lecture-Demonstration:—Dr. A. H. Pirie: The Value of X Rays in the Early Diagnosis of Diseases of the Chest.

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Demonstration:—Dr. G. P. Chappel: Selected Medical Cases.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. H. Evans); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

MONDAY.—5.15 P.M., Demonstration:—Dr. J. H. Thursfield: Food and Food Diseases—Rickets. (Special Post-Graduate Course.)

TUESDAY.—5.15 P.M., Demonstration:—Mr. H. A. T. Fairbank: Deformities—Deformities associated with Rickets, Dislocation of Patella. (Special Post-Graduate Course.)

WEDNESDAY.—5.15 P.M., Demonstration:—Dr. J. H. Thursfield: Food and Food Diseases—Infantile Scurvy. (Special Post-Graduate Course)
THURSDAY.—4 P.M., Lecture:—Mr. Waugh: Swellings in the Inguinal and Scrotal Regions.
FRIDAY.—5.15 P.M., Demonstration: Mr. H. A. T. Fairbank: Deformities—Scoliosis, Lordosis, Kyphosis, Neurotic Spine. (Special Post-Graduate Course.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.
WEDNESDAY.—4 P.M., Lecture:—Dr. Bosanquet: Theory and Practice in the Treatment of Pulmonary Tuberculosis.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.
TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. A. Turner: Peripheral Neuritis.
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. G. Stewart: Syphilitic Compression Paraplegia.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.
TUESDAY.—3.45 P.M., Lecture:—Dr. Kingsford: Anæsthetics.
FRIDAY.—3.45 P.M., Mr. W. Wallis: Mouth and Teeth.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.
THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Tuberculosis of the Skin—I., Lupus Vulgaris; II., Tuberculosis Verrucosa Cutis; III., Scrofuloderma.

ANCOATS HOSPITAL, Manchester.
THURSDAY.—4.15 P.M., Mr. G. Wright: Head Injuries. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (23rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan 9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (24th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY 25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (26th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 16th, 1910.

Date.	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Nov. 10	30·14	S.W.	...	61	51	34	34	35	Hazy
,, 11	29·43	WNW	0·05	61	46	35	41	43	Fine
,, 12	30·02	W.	0·03	66	46	33	34	34	Cloudy
,, 13	29·63	S.W.	0·01	56	50	34	41	43	Overcast
,, 14	29·01	S.W.	0·34	74	52	41	46	46	Cloudy
,, 15	29·10	S.	0·01	59	50	44	44	45	Cloudy
,, 16	29·64	N.W.	...	58	42	35	34	35	Fine

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Observations ON THROMBOTIC SOFTENING OF THE SPINAL CORD AS A CAUSE OF SO-CALLED "ACUTE MYELITIS."

By H. CHARLTON BASTIAN, M.D. Lond., F.R.S.,

CONSULTING PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL AND THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

Discrepancy of Views on Pathogenesis.

THERE seems little room for doubt that the common "softenings" met with in the spinal cord are in all essential respects similar to the common "softenings" met with in the brain. It is now generally acknowledged that these latter softenings are due to vascular occlusions (embolism and thrombosis), cutting off the blood-supply from the affected region of the brain, and thereby leading to degenerative processes in the sites supplied by the occluded vessels.

There is absolutely no reason for supposing that inflammation should be more common in the spinal cord than in the brain, nor that the process which causes the great majority of softenings of the brain (simple vascular occlusions) should not be capable of producing analogous results in the spinal cord. Yet works on medicine at the present day and for some time past would have us believe that while the common softenings of the brain are results of non-inflammatory degenerations, those of the spinal cord are due to inflammation. What explanation can be given for this seemingly unwarrantable discrepancy?

The main cause for the persistence of this anomalous point of view is undoubtedly to be found in the fact that while embolism and thrombosis are both common in the brain and comparatively easy to detect in its great vessels, embolism is so rare as to be almost non-existent in the spinal cord, while thrombosis is exceedingly difficult to detect because of the comparatively minute vessels that supply this section of the nervous system. This, I say, is the main cause for the persistence of what some deem to be an erroneous point of view;[1] but another cause was originally operative in this country in initiating the view that the pathogenesis of softenings of the brain, as commonly met with, is altogether different from the pathogenesis of common softenings in the spinal cord.

This initiatory cause had the following origin. Previous to 1866 in this country softenings of the brain were commonly regarded as of inflammatory origin, though during the few preceding years evidence had been accumulating, especially through the labours of certain French pathologists, which ultimately tended to show in the most conclusive manner that such softenings were degenerative in nature and resulted from simple vascular occlusions. When Dr. (afterwards Sir J.) Russell Reynolds commenced in 1865 his great *System of Medicine*, which was for so long an authoritative work not only in this country but abroad, he did me the honour of asking me to write the sections on pathology for various diseases of the brain, of which he was to give an account in that work. In the letter that he subsequently wrote to me he assigned for these sections a large number of pages for an article on "Cerebritis" and only one or two pages for that on "Non-inflammatory Softening." I accepted his proposals on condition that these numbers should be reversed, as I had much to say concerning the latter process and very little indeed concerning the former. But while Dr. Reynolds agreed to my point of view and shaped his own articles in accordance therewith (as may be seen by reference to that work), so that the pathology of the brain was dealt with from the newer point of view then first introduced from France, he, as a too indulgent editor, actually allowed Dr. Radcliffe to deal with the corresponding affections of the spinal cord from the old point of view. Thus, in this then very authoritative work such processes as were described as non-inflammatory degenerations of the brain were in the spinal cord said to be of inflammatory origin, and what I felt sure would happen has happened—that is, the anomalous point of view has proved very persistent.

The opportunity for expressing my own views concerning "softenings" in the spinal cord came after I had carefully looked into this matter for several years from the pathological as well as from the clinical point of view, when I was asked by the late Sir Richard Quain to write a number of articles on diseases of the spinal cord for his *Dictionary of Medicine*. This I undertook to do, and in the first edition of that work, published in 1882, the first statement appeared of the views which I held, and have continued to hold, as to the altogether excessive rôle attributed to inflammation, not only in acute but also in chronic diseases of the spinal cord. The statement of these doctrines was repeated in 1886 in my work entitled *Paralyses, Cerebral, Bulbar, and Spinal*, and also in two subsequent editions of Quain's *Dictionary* (1894 and 1902). Owing to the fact of the different editions of the *Dictionary* it will be more convenient for reference if I make some citations from the work published in 1886. Referring in that work to what is commonly known as "Myelitis" the following passage occurs (p. 583):—

> By many writers and practitioners the term "myelitis" is used in a somewhat vague manner, and with an evident tendency to include under it as many different affections or states of the spinal cord as possible. Critical discrimination seems to have been, and still seems to be, somewhat in abeyance by many who describe or report cases of disease of the spinal cord. They set down, only too frequently, as instances of "myelitis" not only all cases in which the substance of the spinal cord is softened, but still more all those in which it is indurated—and at times, no less impartially, those in which it is merely degenerated.

This passage was followed by statements in illustration of these various usages of the terms Acute and Chronic Myelitis. On a previous page my own views as to the limitations which should be ascribed to the inflammatory process in the spinal cord were thus stated (p. 552):—

> The writer is far from denying that a primary inflammation may involve areas of the cord, and entail "softening" of its substance. He believes, however, that "acute myelitis" is far more likely to occur as a secondary process, in connexion with pressure upon, and consequent irritation of, some part of the cord encroached upon by fractures and dislocations of the vertebræ, or when otherwise wounded; also as an occasional sequela either of scrofulous pachymeningitis, or of the direct pressure made upon the cord by some meningeal tumour, or of hæmorrhage into its substance. Yet he is far from believing that *all* the secondary softenings met with in the spinal cord are necessarily of inflammatory origin. Many of these, also, are due to degenerative rather than to inflammatory processes.
>
> Processes of degenerative softening are mostly brought about quickly, and they would, in the main, correspond with what is commonly spoken of as "acute myelitis." As for "chronic myelitis" (in the commonly understood sense of chronic softening) the writer believes that no such disease should be any longer described. Many "softenings" are, in a certain sense, chronic, as, though they may be more or less abrupt in their onset, they tend to last long, rather than to kill quickly. Again, other maladies which the older physicians would have ascribed to "chronic myelitis" or "chronic softening," are now known to partake more of the nature of chronic indurations, and to have as their basis processes of sclerosis.

My views on this subject have met with only a very partial acceptance in this country, as may be gathered from the fact that in the last edition but one of the *Nomenclature of Diseases*, issued by the Royal College of Physicians of London, and probably also in the latest edition, as well as in Sir Clifford Allbutt's celebrated new *System of Medicine* (Vol. VII., 1899), there is no mention of Softening of the Spinal Cord other than such as is assumed to be due to Inflammation.

Still, there have been some notable converts both in this country and abroad.[2] The first person in this country to express accord was Dr. R. T. Williamson[3] (1894–95) in an important communication "On the Relation of Spinal Diseases to the Distribution and Lesions of Blood-vessels of the Spinal Cord." Then came a paper by Dr. Douglas Singer (1902) on "The Pathology of so-called Acute Myelitis,"[4] in which a brief historical summary to that date will be found; while in 1904[5] there is a paper by Dr. F. E. Batten on "The Pathology of Acute Poliomyelitis," in which he disputes the rôle of inflammation in that disease, as Dr. Williamson had previously done for some of the cases at least. Finally, Dr.

[1] A contributory cause is due to the fact that such affections of the spinal cord are, as a rule, much less speedily fatal than the corresponding affections of the brain, while to ascertain from post-mortem evidence the true pathology of the spinal cord affection an examination ought to be made within three or four weeks from the onset of the malady.

[2] On the continent Pierre Marie, Bruns, Ziegler, Oppenheim, and others adopt the view that the majority of cases of so-called acute myelitis are due to thrombosis.

[3] Medical Chronicle, New Series, vol. vii., 1894-95.

[4] Brain, 1902, p. 332.

[5] Ibid., p. 376.

J. S. Risien Russell in his Harveian lecture for 1907[6] gives the most thorough support to my views both in regard to so-called Acute Myelitis and also Chronic Myelitis. After referring to the frequency with which in hospital and private practice, as well as in text-books on Medicine and on Diseases of the Spinal Cord, one meets with references to "Myelitis," he says:—

> However, I venture to affirm that myelitis, if the term be strictly applied to an inflammation of the spinal cord, is in reality a rare malady, and that much of what is spoken of under this name is in reality a softening of the spinal cord consequent on vascular occlusion, in which inflammation plays no part, except it be that some inflammatory process in connexion with the walls of the blood-vessels permits of the thrombosis or clotting which results in the softening.

The communications that I have just referred to may fairly be taken as indications that the newer views are at last gaining ground, and that more persons are beginning definitely to recognise that the cause which is supreme in the production of Softening of the Brain is no less supreme in the production of similar changes in the Spinal Cord. So many still adhere, however, to the old point of view that it seems important to repeat, with the additional evidence that is now available, the principal reasons for the belief that what is commonly known as "acute myelitis" is in reality a degenerative softening resulting from vascular occlusion.

We must look at the problem from the point of view of Etiology and Pathogenesis, as well as from that of Symptomatology.

ETIOLOGY AND PATHOGENESIS.

It is well known that so-called Acute Myelitis is met with principally among one or other of three classes of patients—namely, (1) elderly persons with degenerated vessels and, often, failing heart power; (2) young or middle-aged adults suffering from syphilis; and (3) children or adults when actually suffering from other infectious diseases, or during periods of convalescence therefrom.

In the first of these categories we have the two best known and most potential causes favouring thrombosis; in the second we have to do with a fertile cause of thickening of the external and middle coats of the arteries and of endarteritis, alike in the brain and in the spinal cord, such as lead on to thrombosis; while in the third category, in which acute myelitis is less common than in the other two, we have to do with blood changes and toxins, often associated with feeble cardiac action, which may well act as causes of thrombosis in vessels of the spinal cord as well as of other regions. In these infective conditions toxins may excite endarteritis in the small vessels, while, in addition, alterations in the character of the blood may also occur of a kind to favour the occurrence of thrombosis, as in convalescence from typhoid and other fevers, and after parturition.

Thus the conditions and states of the system in which so-called Acute Myelitis is most prone to occur are found to be those that would especially favour the occurrence of the process of thrombosis, and this is the kind of occlusion that almost solely occurs in spinal vessels. There are, in fact, good anatomical reasons why embolism should be rare in the spinal cord, and why thrombosis should be especially prone to occur in the vessels of this part of the nervous system.

In regard to embolism, as I previously pointed out[7]: "Emboli reach the brain much more rarely by way of the vertebrals than by way of the carotids; and the principal arteries of the spinal cord are either direct off-sets from the vertebral (anterior spinal) or indirect branches from the same (posterior spinal). Apart from these vessels the blood-supply of the cord comes from smaller twigs (still less likely to convey embolic particles), derived principally from the intercostal and lumbar arteries." Even when embolism does occur, "it can only be in very small vessels, whose occlusion would merely give rise to minute foci of softening not capable of causing any distinct paralytic condition."

On the other hand, the special nature of the distribution of vessels in the spinal cord is such as directly to favour the occurrence of thrombosis, as was originally pointed out by Moxon,[8] and especially of thrombosis in the lumbar region, where so-called Acute Myelitis is so frequently met with. Moxon dwelt upon the great length of the very slender spinal arteries, for, as he said, "no arteries so small as these run so great a length elsewhere in the body," so that it becomes necessary to supplement their blood-supply wherever possible, and advantage is taken of the nerve roots on which to send up little reinforcing arteries. These run a comparatively short course throughout the greater part of the spinal cord, but as we approach its lower extremity, where the blood-supply from above has to be furnished with greater difficulty, the much longer length of the nerve roots entails also a correspondingly longer course for the very slender reinforcing vessels. It can be easily understood, therefore, that the circulation is more easily impeded in this than in other regions of the spinal cord when local or general causes favouring thrombosis are in operation.

Then, again, thrombosis may also take place in the peculiarly tortuous network of veins which surrounds the spinal cord on all sides. Ollivier long ago called attention to the probably natural slowness of the blood current through these vessels, and added that he had often seen in elderly persons fibrinous clots filling the veins of the cord as well as those that accompany its nerve roots.

We have thus the nature of the vascular supply of the cord favouring thrombosis, and favouring it especially in that region of the organ in which so-called acute myelitis is known to be most common.

Again, we have the disease presenting itself especially in persons and under conditions in which the occurrence of such a process is known to be favoured, and when there is no reason whatever for supposing that a primary inflammatory process should have been set up in the spinal cord.

Lastly, if we turn to the actual morbid anatomy of the lesions in the majority of cases of so-called Acute Myelitis in which an early examination has been possible we meet with an absence of the distinctive signs of inflammation (that is, small-celled infiltration of the tissues around the vessels and collections of pus). This may be gathered even from the writings of many of those who describe the disease as being caused by inflammation. The distinctive signs of inflammation are absent from their description of the morbid changes, and what we do find is a description of the existence of a state of things exactly comparable with what is to be met with in a focus of softening of the brain known to be merely degenerative, and caused by thrombosis of the middle cerebral artery or one of its branches. Many cases have now been described in which, notwithstanding the difficulty entailed by the small size of the spinal arteries, the actual thrombosed vessels have been discovered in the foci of softening. Thus Professor D. J. Hamilton, many years ago, in a case of pyelitis in which blood poisoning was supposed to have existed, found multitudes of minute thrombi in the vessels of the spinal cord, though it was not ascertained that they were associated with micrococci.[9] Other cases have been recorded by Williamson, Singer, and Batten,[10] in which occluded and gorged vessels, with small-cell infiltration of their sheaths and minute hæmorrhages were found—just such as were produced by Prevost and Cotard when they occluded spinal arteries by the injection of tobacco seeds. These first stages of change are soon followed by degeneration with disintegration of the myeline of the nerve tubes, and the appearance of multitudes of the well-known "granulation corpuscles."

Turning now to what is said in text-books concerning the Etiology of primary Acute Myelitis by those who regard it as an inflammatory affection, we find them admitting that in a considerable number of cases no cause can be assigned for the origin of such an inflammation, while mention is made of two or three assumed causes—such as suppressed menstruation, sexual excesses, or muscular strain—whose causative potency for the excitement of an inflammation of the spinal cord may well be doubted when one thinks of the overwhelming number of cases in which such assumed causes are operative without leading to the effect in question.

As to the other causes that are cited, one of them—namely, exposure to wet and cold—is just as likely (by lowering the circulation in persons otherwise predisposed) to be a cause of thrombosis in some of the spinal vessels as of

[6] THE LANCET, vol. ii., p. 1.
[7] Loc. cit., p. 551.
[8] Brit. Med. Jour., April, 1881.
[9] British and Foreign Medico-Chirurgical Review, April, 1876, p. 447.
[10] See Williamson (loc. cit., p. 328, and also in his work "Diseases of the Spinal Cord," 1908, p. 392, Plates v. and vi., and Figs. 175 and 176), together with the communications of Douglas Singer and F. E. Batten

an inflammation; while the remaining causes—namely, (1) the co-existence or immediate precedence of some infectious disease; (2) syphilis; and (3) the occupation of a diver—are far more likely to favour the occurrence of thrombosis than of inflammation of the spinal cord. To the first and second of these causes as provocative of endarteritis and arteritis I have already referred, while as to caisson disease, which is cited by Dr. F. Taylor[11] as a condition causing Acute Myelitis, we may well ask why inflammation of the cord should occur in such a condition, and whether it is not much more probable that the trouble has been caused by the well-known liberation of air-bubbles occluding the small vessels of the cord.

SYMPTOMATOLOGY.

The onset of so-called Acute Myelitis is usually more or less sudden. It commences by certain local symptoms, such as numbness and weakness of limbs, soon developing into actual motor paralysis with more or less of impaired sensibility, while there may be little or no elevation of temperature or other febrile symptoms.

This is admitted by those who believe the disease to be actually caused by inflammation. Thus Dr. F. Taylor, who follows in the new *System of Medicine* the line adopted by Dr. Radcliffe in the old *System*, says: "The symptoms may be divided into the purely local and the more general. The local symptoms, those, that is, that depend on disturbance of the functions of the spinal cord, are the most important." So much is this the case in his estimation that Taylor begins by reference to these local symptoms, and actually says nothing about the general symptoms,[12] though subsequently, when describing one particular form of myelitis, he does say (p. 19) that "in the early days of an acute myelitis there may be a slight degree of fever, with the usual accompaniments." Other writers also dwell upon the importance and first appearance of local symptoms, and admit that general symptoms are in a considerable number of cases altogether absent.

This symptomatology is quite in accordance with the onset of the disease as a result of some local change leading to the occlusion of vessels in the affected region of the spinal cord; but in the cases where the malady is actually caused by inflammation we have every right to expect that, as with inflammation of other organs, there would be an important assemblage of general symptoms, such as malaise, shivering, headache, depression, loss of appetite, pyrexia—symptoms which, as we have seen, are notably absent in the majority of cases of so-called Acute Myelitis.

ACUTE POLIOMYELITIS.

The pathology of this disease has been much discussed of recent years, and I do not propose to dwell upon it at any length.

Even as far back as 1882, and again in 1886, I pointed out the improbability of an inflammation limiting itself to the anterior horns in the way that the morbid changes are limited in this disease. Thus in *Paralyses, Cerebral, Bulbar, and Spinal*, p. 555, the following passages occur:—

> But in two or three distinct diseases the ganglion cells of the anterior cornua in different parts of the cord are prone to be suddenly overtaken by an etiologically obscure and altogether inexplicable failure of nutrition, which speedily entails an atrophy of the particular cells affected. This, for instance, occurs as the anatomical basis of "acute spinal paralysis" both as it presents itself in children and (though more rarely) in adults; it is met with also in "chronic spinal paralysis." In these diseases whole groups of contiguous and functionally related cells are affected simultaneously, and as the atrophy progresses there is generally evidence of a secondary overgrowth of the neuroglia surrounding such nerve cells in the anterior cornua.
>
> Of late some more evidence has been forthcoming to show that this process may be at first inflammatory in type, so that the terms "cornual myelitis," or "anterior poliomyelitis," which have also been applied to these affections, are more in accordance with known facts than was formerly the case. Still, it may be said that inflammation does not usually limit itself to individual tissue elements, and the slight overgrowth of the contiguous neuroglia may well be a secondary simple hyperplasic process. This latter process is, indeed, less evident where, as in "progressive muscular atrophy," the initial and mysterious atrophy of individual ganglion cells occurs more slowly and more sparsely.

Several years later (1894–95) Dr. R. T. Williamson, as we have seen, laid stress upon the fact of the limitation of the morbid changes in acute poliomyelitis to the regions supplied by the anterior median arteries and their branches, and referred to the often sudden onset of the disease as being "too sudden for primary inflammation," and hence as "very suggestive of thrombosis," when hæmorrhage can be excluded; and he recorded a case of this kind in which no trace of hæmorrhage was found in any part of the cord.

Then in 1904 F. E. Batten[13] also favoured the view that the disease is caused by thrombosis or embolism of some of the small vessels supplying the anterior cornua, and recorded three cases in support of his views, though Head and Campbell[14] adhere to the notion that the changes met with in the disease are of an inflammatory nature.

Starr, again, considers that the cases in which there are no febrile symptoms at the onset may be due to hæmorrhage or thrombosis; or else that "the lesion is a primary degeneration of nerve cells," as I suggested in 1882. The view was also taken by Charcot and V. Kahlden that in certain cases the initial change is an acute degeneration limited to certain nerve cells in the anterior horns. And as Williamson points out,[15] it must be admitted that in many old cases in which the morbid anatomy has been investigated "interstitial changes have been very slight in comparison with the marked changes in the nerve cells."

Thus it seems evident that there is very much evidence against the view that inflammation is at all a common cause of so-called Acute Poliomyelitis, whether we look at the evidence from the point of view of the nature and limitation of the morbid changes, or from the point of view of the often sudden onset of the disease with either complete absence or the presence of only very slight febrile symptoms. Still, as in the more general affection, so here there is no reason to deny that inflammation *may* at times be a cause, while admitting that either vascular occlusions or acute primary degenerations of the very specialised ganglion cells will suffice to account for the great majority of cases.

This latter conclusion is in no way invalidated by the fact that an epidemic prevalence of the disease—strongly suggestive of an infectious origin, as Williamson[16] and Farquhar Buzzard[17] have pointed out—sometimes occurs; since, as Batten says, liability to thrombosis after acute specific infections is well known and due to morbid changes in blood. And then, again, the irritation of vessel walls induced by the presence of toxins in these affections might, in other cases, undermine the nutrition of the great ganglion cells. I quite agree with Batten also when he urges that such changes in blood and vessel "walls," productive of so-called Acute Poliomyelitis, may be occasioned "by various and totally different forms of infection," rather than by some "special specific infection."

CONCLUSION.

Thus, the evidence seems to be altogether overwhelming that in the great majority of cases of so-called "Acute Myelitis," and also of "Acute Poliomyelitis," the affection is caused not by an inflammation, but by thrombosis of some of the vessels of the spinal cord (where, in the latter disease, it is not due to a special acute degenerative process). Certainly, in the former affection, we have in the great majority of cases to do with Thrombotic Softening rather than with a true Myelitis.

As we have seen, this latter conclusion is rendered obvious (1) by the similarity of the morbid changes in question to those occurring in the brain which are due to thrombosis, as well as to the absence of any reason why a primary inflammation should be rare in the brain and common in the spinal cord. These strictly logical reasons are strongly reinforced by (2) the fact of the existence of special conditions favouring the occurrence of thrombosis in the vessels of the spinal cord, and in just such parts of the cord as are most frequently affected; (3) by the fact that the disease is most commonly met with in just such persons and under just such conditions (as to heart's action, blood-vessels, and quality of blood) as are known to be favourable to the occurrence of thrombosis; (4) by the fact that the mode of onset and the early symptomatology of the affection are wholly different from what they would be, had an inflammation of the cord actually existed; and finally (5) by the fact of the absence of any reasonable cause of inflammation, certainly in the majority of those in whom the malady makes its appearance.

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[11] Clifford Allbutt's System of Medicine, vol. vii., p. 5.
[12] See loc. cit., p. 11.
[13] Brain, p. 376.
[14] Ibid., vol. xxxiii., p. 391.
[15] Diseases of the Spinal Cord, 1908, p. 207.
[16] Practitioner, May, 1902.
[17] Brain, 1907.

The present confusion in regard to Acute Myelitis is, therefore, to be regarded as a reproach to scientific medicine, and one which ought to be brought to an end, especially as it is often a matter of importance, even from a therapeutic point of view, as Singer and Risien Russell have pointed out.

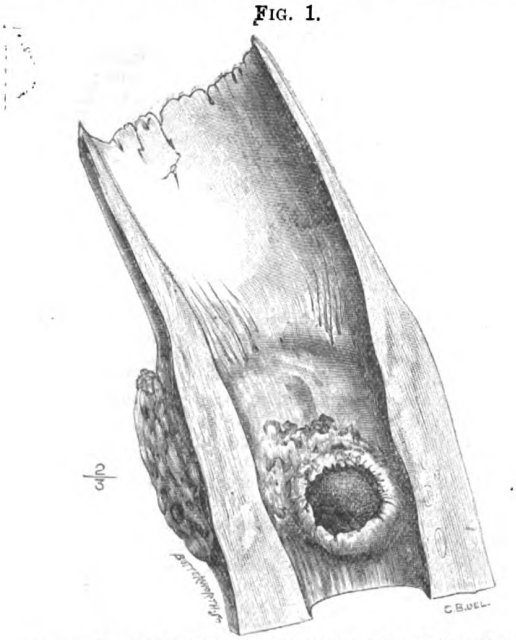
It should be freely admitted that the great majority of cases of so-called Acute Myelitis are in reality cases of Thrombotic Softening; and that in a smaller number of the cases where the disease starts as a secondary affection (cases of "Compression Myelitis" and others) there is in reality a similar absence of inflammation, and the existence merely of a degenerative and ischæmic softening of the spinal cord. As for "Chronic Myelitis," this is a term which, in the light of present knowledge, should be altogether discarded.

THE DISEASES OF ELEPHANTS' TUSKS IN RELATION TO BILLIARD BALLS.[1]

BY JOHN BLAND-SUTTON, F.R.C.S. ENG.,
SURGEON TO THE MIDDLESEX HOSPITAL, ETC.

THE tusks of an elephant are the permanent upper incisors. They not only surpass other teeth as belonging to an animal so enormous, but they are the largest of all teeth in proportion to the size of the body. The tusks of the elephant grow throughout life, for they possess persistent pulps, like the incisors of rats and rabbits; the only check to their growth is the wear and tear to which they are subject in digging up roots, uprooting small trees, or stripping them of bark. The tusks are also used for offence and defence; vicious bulls sometimes break their tusks fighting rivals.

FIG. 1.



Iron ball projecting into the pulp chamber of an elephant's tusk. (Museum of the Royal College of Surgeons of England.)

In Equatorial Africa the elephant attains its greatest size. A. H. Neumann gives the average height of the full-grown bull-elephant at 10½ feet. The tusks of a full-grown bull may weigh anything from 50 to 100 pounds, or more. There is a tusk of *Elephas africanus* in the Natural History Museum which is 10 feet long, 2 feet in girth, and weighs 228 pounds.

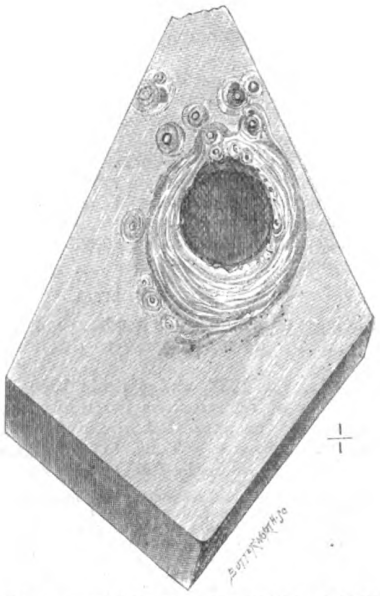
A tusk consists of two parts: a basal portion lodged in the upper jaw, and a portion which projects beyond the animal's lips. When an elephant is killed it is wiser not to attempt to chop out the tusks at once as this injures the ivory; in a few days the tusks loosen and are easily removed.

When a dried tusk is split longitudinally its basal third will be found to consist of a conical chamber, the walls of which, near its wide extremity, are very thin. The remaining two-thirds are solid, but a close examination will reveal a very narrow central area filled with irregular hard tissue representing the remains of a central canal. In the living animal the large basal cavity is filled with living tissue known as the pulp: it contains, among other things, blood-vessels and nerves. The walls of the pulp chamber are lined with a layer of cells (odontoblasts) which are concerned in forming the dentine (or ivory). The odontoblasts send minute processes known as dentine fibrils into the growing ivory: in the dead tusk the minute (microscopic) canals occupied by these fibrils persist and are termed by anatomists dentinal tubules. These dentinal fibrils are 1/1500 of an inch in diameter and so close together that they are only separated by a space slightly wider than their own diameter. Under normal conditions the active formation of dentine continues as long as the elephant lives, so that whilst the tusk is being worn down at the tip by use it is continually renewed by the odontoblastic cells in the pulp chamber.

It occasionally happens that the pulp becomes disturbed by inflammation which may be caused by injury, such as fracture of the tusks by fighting, by musket balls, by spears, or some such contrivance invented by the natives for the destruction of the elephant. Interference in a violent form with the pulp has a detrimental effect on the formation of ivory which is of some interest. That portion of the tusk which contains the pulp chamber is embedded in the upper jaw in such a manner that the open end is directed upwards.

Sportsmen who hunt the African elephant endeavour to kill this animal with what is known as a heart shot. This may be effected by shooting it through the shoulder or by a shot directed into the chest from the front. In some circumstances the hunter must take his chance of what is known as the forehead shot, and occasionally the bullet penetrates

FIG. 2.



Iron bullet surrounded by secondary dentine, embedded in the solid portion of an elephant's tusk. (Museum of the Royal College of Surgeons of England.)

to the brain. When the aim is inaccurate and the ball enters to one side of the centre of the head, it is very liable to embed itself in the large pulp cavity of the tusk, and the elephant escapes death. In such an event the pulp continues to form ivory (dentine). In consequence of the irritation caused by the presence of the foreign body, the hard material which forms around the bullet differs from true ivory, and is known as secondary dentine.

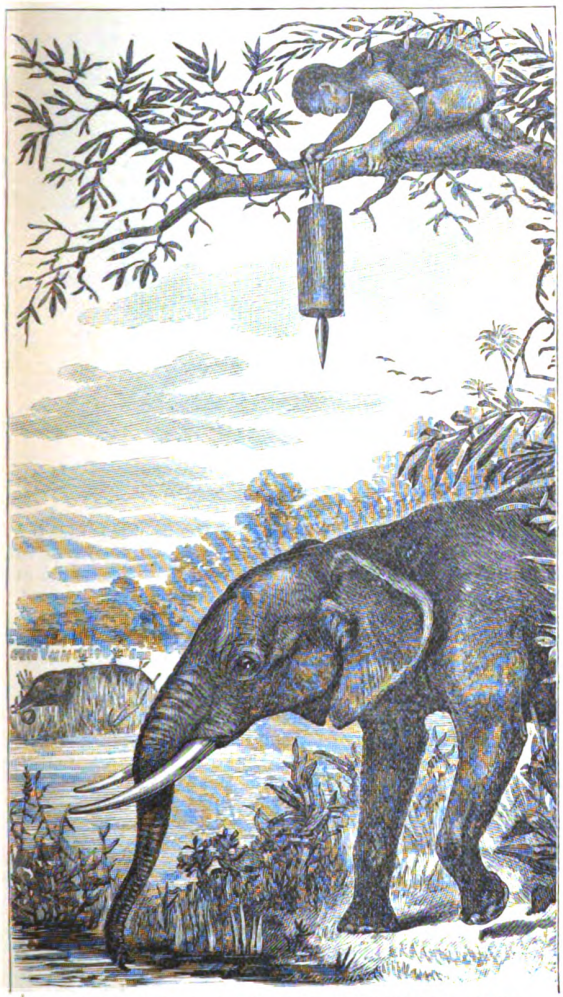
Ivory-turners have known for more than a century that hard bodies, such as bullets and spear-heads, are occasionally found embedded in the solid parts of elephants' tusks without any sign existing on the surface of the tusk to indicate the point of entry. Many observers, among them Blumenbach and Cuvier, noticed that the tissue in which these foreign bodies are embedded differs in appearance and

[1] A paper read before the Hunterian Society on Oct. 26th, 1910.

texture from true ivory. Goodsir (1841) investigated the matter and furnished a satisfactory explanation. When the ball hits the free portion of the tusk, if it only penetrates to a certain depth, no change takes place and the breach is not repaired. When the ball enters the pulp chamber through the side of the tusk the hole in the tusk is repaired by the formation of secondary dentine and the offending body is encapsuled by the same material. As the tusk advances in its socket, the bullet is gradually incorporated in the solid ivory. The thorough way in which a bullet may be embedded in the solid part of an elephant's tusk, and no mark betray it, is proved by the fact that one has been found in a billiard ball. Such a specimen is preserved in the Museum of the Royal College of Surgeons, England.

These things happened in the days of muskets and black powder: the introduction of the rifle and high velocity bullets has completely changed elephant shooting. African elephants are often killed by a single well-placed bullet. Compare this with the description of the shooting of the famous elephant, Chunee, in 1826 at Exeter Change, a wild

FIG. 3.

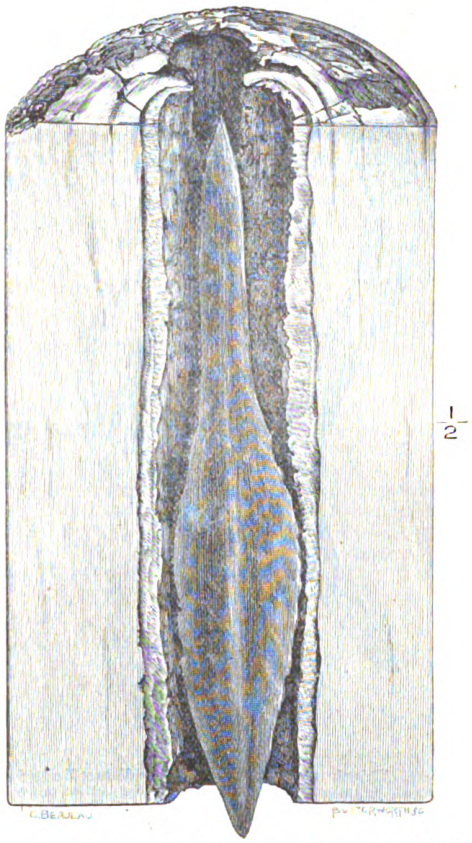


A sketch illustrating one method by which the African native attempts to kill an elephant. He drops a heavily loaded spear upon the animal when visiting a drinking pool.

beast show off the Strand near the Lyceum. Chunee became dangerous and a detachment of infantry was employed to kill him: 100 bullets were fired into the wretched animal for this purpose. The skeleton of this elephant is preserved in the Museum of the Royal College of Surgeons of England. When the skull was examined after the skeleton had been macerated a large abscess was found at the root of one of the teeth, which partly accounted for the trouble Chunee caused his keepers. When we reflect on the agony human beings suffer in consequence of an abscess in the pulp of a molar tooth, it appears difficult to estimate the suffering endured by an elephant when the pulp of a tusk is inflamed.

It is possible for a solid body to enter the pulp chamber without penetrating the wall of the tusk. The open end of the tusk looks upwards, and as the natives have a way, among others, of killing elephants by dropping a heavily loaded spear upon them from a tree, or as the result of a trap, it sometimes happens that the spear penetrates the open end of the tusk and is lodged in the pulp. The frightened animal rushes about, breaks the shaft of the spear, and leaves the iron head embedded in the pulp chamber. Such a weapon becomes embedded in secondary dentine, as in the case of a bullet, and is eventually found in a hard part of the tusk.

FIG. 4.



Portion of an elephant's tusk in section. An iron spear 7½ by 1½ inches is enclosed in a capsule of secondary dentine. There was nothing on the exterior of the tusk to indicate its presence. (Museum of the Royal College of Surgeons of England.)

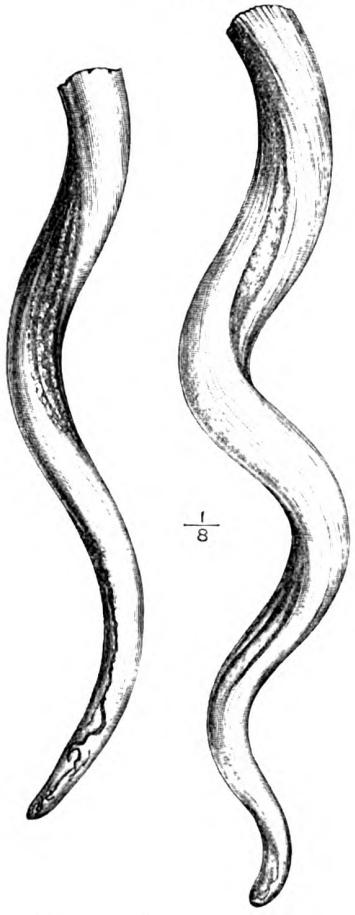
These elephant spears are formidable things. Stanley refers to one found in his second journey from Fort Bodo to the Albert Nyanza, shortly after leaving the Ituri River, in the following terms: "On the road before leaving the bush we passed a place where an elephant-spear had fallen to the ground, and buried itself so deep that three men were unable to heave it up. Such a force, we argued, would have slain an elephant on the instant. (April 8th, 1888.)"

It is quite common to find evidence of disease in elephants' tusks. Large masses of secondary dentine as big as potatoes are often found in tusks, occasionally free in the pulp cavity, more often attached to its inner wall. Sometimes a tusk consists of a wall of variable thickness enclosing a cavity extending throughout its length, into which the hand and forearm can be easily introduced. The cavity of such a tusk usually possesses rough masses of secondary dentine on its walls. It is not uncommon on dividing the solid part of

a tusk to find a piece of secondary dentine completely embedded in the ivory. Small pieces of hard tissue resembling in size and shape split peas or beans are very common in tusks. These defects are known in the trade as "beans."

Every large collection of tusks contains some of a spiral shape. The abnormal curving is due to disease limited to a part of the pulp causing the ivory to be formed more slowly on one side than the other. Some of these spiral tusks contain large tracts of secondary dentine.

FIG. 5.



Spiral tusks. This abnormal curving is due to disease limited to a part of the pulp causing the ivory to be formed more slowly (and badly) on one side than the other. (Museum of the Royal College of Surgeons of England.)

Among the many interesting objects made from elephants' tusks are billiard balls. A good ball should be perfectly spherical, but it continually tends to become ovoid. Tusks recently removed from elephants are described as "green." As ivory dries it whitens, tends to become brittle and break up into concentric layers. When a tusk is divided transversely the cut surface has an elliptical outline. In the middle of the section there is a rounded piece of secondary dentine representing the remains of the pulp chamber. Ivory-turners call this the "nerve." The ivory is deposited in layers, therefore the cut surface offers a series of concentric rings; these are more obvious in green tusks. The outer layer is technically known as "bark." As ivory dries it shrinks, and experience has taught the ivory-turner that a tusk shrinks more in width than in length. To meet this peculiarity the best billiard balls are prepared from tusks which have a diameter very little greater than that of the ball. Under such circumstances the shrinking will be fairly uniform. The tusks of cow-elephants are preferred for making billiard balls, especially those which weigh about 12 to 16 pounds. They are not so curved as larger tusks, and the so-called nerve is less conspicuous. In selecting tusks for making billiard balls it is necessary to take those in which the nerve is central, otherwise the ball will have a bias and be unreliable.

The remains of the pulp chamber can always be detected in a billiard ball; the better the ball the smaller the area of the secondary dentine. In the spot ball the bead is usually let into the "nerve." On one occasion a billiard ball received a smart stroke from a cue; to the astonishment of the player a large core of secondary dentine as thick as a thumb fell out. This core traversed the complete axis of the ball. The specimen is preserved in the Museum of the Royal College of Surgeons.

The billiard ball is turned in the rough and kept in a warm room at an equable temperature for two years; it is then turned true. A well-seasoned billiard ball should be a perfect sphere with a diameter of $2\frac{1}{16}$ inches, and weigh 5 ounces. The contour of an ivory ball is always changing; it tends to become ovoid. In addition to this inherent change, a billiard ball contracts with cold and expands with heat. During a match expert players take care to avoid the balls becoming chilled by currents of cold air, as they are then irresponsive to fine strokes.

FIG. 6.

Transverse section through an elephant's tusk, showing its elliptical outline, remains of the pulp chamber, the concentric rings, and bark.

There is something very characteristic in the "click" when two balls cannon: some players believe it to be inimitable. Some years ago two men in New York were at billiards, and the player claimed a cannon; the opponent disputed it. A friend in the room supported the player's claim, he "heard the click." Later on, when playing had been discontinued, they heard the "click of contact," but it was produced by a mocking bird in the saloon.

All billiard balls look alike to an untrained eye; they seem alike to inexperienced players but not to experts. An untrue ball will run comparatively straight under a smart stroke from the cue. A stealthy stroke from an expert player reveals flaws in the contour of the ball or of the cloth. Imagine, then, the suffering which Sir William Gilbert inflicts on the billiard sharp in his delightful comic opera, *The Mikado*, when he condemns him to play extravagant matches—

> In fitless finger-stalls,
> On a cloth untrue,
> With a twisted cue,
> And elliptical billiard balls.

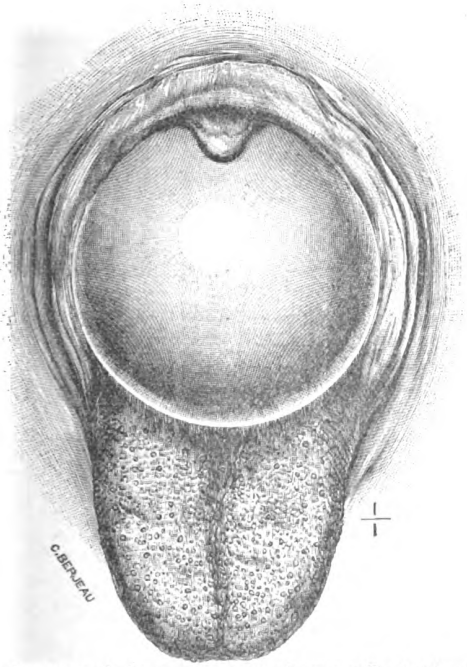
Some years ago a billiard-marker living near the Middlesex Hospital used to amuse the players by placing a billiard ball in his mouth. On one occasion the ball slipped back into the pharynx and he could not get it out and became asphyxiated; in this plight he was conveyed to the hospital and died on the way.

In mediæval times the amount of ivory exported from Africa excited the astonishment of travellers. To-day the best and largest tusks come from Equatorial Africa, and the number exported excites the curiosity of tourists. The industrial world requires and obtains 500 to 600 tons of ivory annually. Ivory sales are held in London four times yearly. At the quarterly ivory sale held in July, 1910, the tusks

offered for sale weighed 66¼ tons; they were imported from East Africa, West Africa, Abyssinia, Soudan, and Siam. In addition to elephants' tusks there were tusks from the following animals: walrus, narwhal, hippopotamus, wart-hogs, and boars; also a quarter of a ton of rhinoceros horns.

In Great Britain the best ivory is used for making billiard balls. The largest tusks are bought for the American market. 50 per cent. of ivory imported into America is used for piano keys. In India large quantities are imported for making bangles. The best tusks fetch in the open market from £68 to £70 per hundredweight. In British East Africa an elephant tusk weighing over 80 pounds is as good as a bank-note. A visit to an ivory sale teaches that even chips are too valuable to waste. They are offered for sale by the ton. When ivory chips are calcined in a close vessel they furnish

FIG. 7.



The tongue and pharynx of a man who was suffocated by a billiard ball. (Museum, Middlesex Hospital.)

charcoal. This, known as ivory black, forms a pigment for oil and water-colours; also an ink for printing engravings.

Some notion of the life of an ivory trader, with which slave trading was also combined, may be gathered from a perusal of Bode's "Life of Tippoo Tib." When this enterprising Arab raided Nsama's country, among other booty he secured 1950 frasilas of ivory. Tusks at that time were worth £7 per frasila (35 pounds). In some of the villages deep in the interior of Africa a pair of large tusks could be bought for a few yards of cotton sheeting or some beads.

Mr. F. J. Jackson traversed the slopes of Elgon in 1891. He found elephants' tusks cheap and plentiful; the natives had no use for them except to make armlets, &c. A 16-pound tusk could be purchased for six strings of beads. The difficulty was not so much in obtaining ivory, for the traders were well armed, but in conveying it to the coast, especially as it had to be carried by men; often one tusk makes a load for a porter.

The hunt for ivory in Africa has had some of the romance and been attended with as much misery as the search for gold entailed on the natives of South America. In days gone by every elephant tusk brought to the coast by Arab caravans might be regarded as a silent record of human misery and woe.

THE annual festival dinner of the West Ham and East London Hospital will take place on Friday, Dec. 2nd, at 7.30 P.M., when the chair will be taken by the Right Hon. Ailwyn E. Fellowes, vice-chairman of the Great Eastern Railway.

DIFFUSE LIPOMA.

BY SIR JONATHAN HUTCHINSON, F.R.C.S. ENG., F.R.S., &C.,

CONSULTING SURGEON TO THE LONDON HOSPITAL.

IN THE LANCET of Sept. 10th last (p. 848) a letter of mine was inserted asking as to the condition known as diffuse lipoma of the nape, whether it had been observed in the lower animals. Two months' silence may perhaps be taken as a tacit negative. My object in putting the question was to ascertain whether others could confirm an observation of my own that these lumps are sometimes seen in asses. Since my letter some new and strongly confirmatory observations have accrued which I now venture to record. I have been told these "lumpy necks" are not very uncommon in asses, and sometimes cause curious mistakes. They are occasionally so large that they displace the mane (usually in the ass erect) to one or other side and make it in part one-sided. I have heard of a case in which a tender-minded observer mistook the mass for an abscess, and made complaint of cruelty to the animal. He was assured, however, by a veterinary surgeon that the soft mass was nothing but fat, that the condition involved no pain whatever, and that it was not very uncommon. My own attention to the subject was first attracted by accidentally finding these lumps in the neck of a fine gelding ass belonging to a neighbour of mine at Haslemere. The animal is very sociable and came up to me in the field, hoping to be fed, and was very willing to be stroked. A companion drew my attention to the great width of its neck under its mane. The masses rest like two thick polony sausages, bulging one on each side of the root of the mane.

I must preface a few words as to the true nature of these growths. An important inference from paleogenetic speculations is, as I have elsewhere pointed out, that in all allied animals parallel conditions may usually be recognised. Thus a patch in the middle of the lower back which in the porcupine is so organised as to grow quills will in other animals produce, it may be, coarse hair or, it may be, hair which only differs from the rest in its colour. The "dorsal streak" running the whole length of the back is common to all animals and receives at different parts in its length peculiar modifications. In the lower part it may grow the porcupine's quills and in the upper part it may produce, what is far more common, a *mane*. The mane consists of one or more rows of deeply implanted strong and coarse hairs. The roots of these hairs lie embedded in coarse granular fat which adheres in continuity with the true skin above it. The result is that a thick mass is formed at the base of the mane which is firmly continuous with the overlying skin, but is more or less loosely attached to the structures beneath it. As might be expected, this mass (hair-roots, glands, fat, and fibro-cellular tissue) is liable to its own more or less peculiar forms of disease. In many animals there is no conspicuous excess of hair, and in many there is likewise no excess of fat, but in the necks of almost all animals the skin is thicker and firmer in this part of the neck than elsewhere. In the human subject the mane is suppressed, but not absolutely so.

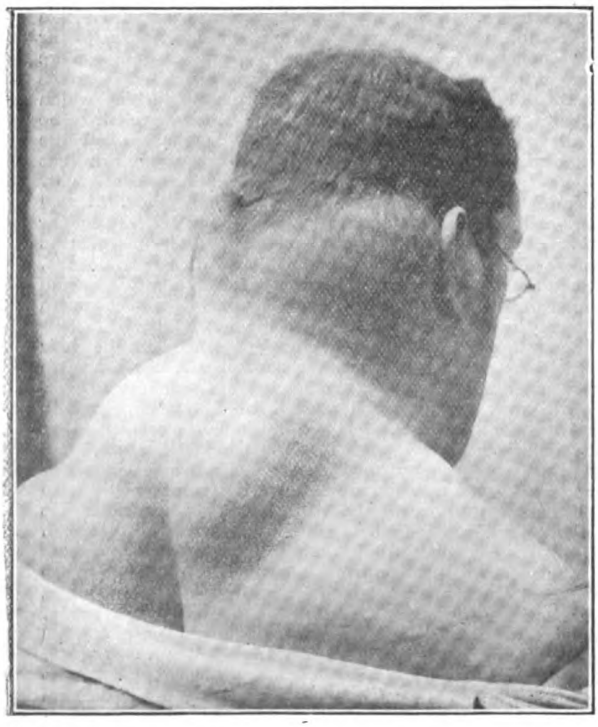
Sometimes disease may be located chiefly in the hair follicles or glands, sometimes the structures of the true skin may undergo hypertrophy, and in others a tendency to overgrowth may appear to be almost exclusively expended in over-development of fat. It is from the latter condition that the enlargements with which we are now dealing originate. They are paleogenetic aberrations in the human subject of the base of the mane in animals. Until recently they have been supposed to occur only in the human subject, but recent observations have led me to think that, as might have been expected, they occur also in some of the domestic animals.

Nor must we, although we attach great importance to the region of the mane as giving to these growths their special location, narrow our observations to that region only. Wherever there are deeply placed hair follicles embedded as they always are in fat, there such hypertrophies may occur. These conditions occur very definitely in the region of the pubes. The pubes is, I believe, in a very unusual position and in the case to which reference is made below the condition existed in unusual excess, for although I have often seen slight examples I have never before seen any condition approaching it, nor do I find any record of such cases.

FIG. 1.

Fat tumours symmetrically placed on the back of the head and neck—quadrate or "nates and testes." (Copied from McCormac's paper.)

FIG. 2

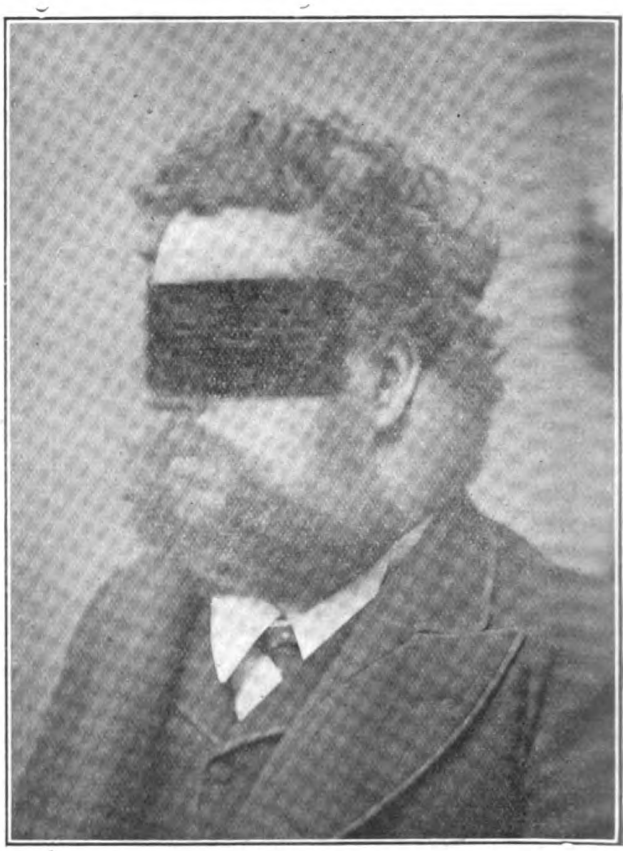


Fat masses symmetrically arranged on the back of the head and lower neck-quadrate or "nates and testes." (From the same patient as Fig. 3.)

FIG. 3.

Fat tumours in the front and sides of the neck. (From the same patient as Fig. 2.)

FIG. 4.



Fat tumours symmetrically placed on the back of the neck and extending forwards on the jaw. (Copied from my own paper in *Archives of Surgery*.)

The occurrence of these fat tumours on the nape of the neck in the human subject has been observed by many and has been especially written about in England by Mr. Morrant Baker, Sir William McCormac, and others. One of the illustrations here given (Fig. 1) is copied from one of McCormac's illustrations. The patient whose fat tumours are shown in Fig. 2 and Fig. 3 had also fat tumours symmetrically placed on the pubes and concealing the penis.

I have as yet personally examined only two definite examples of the "diffuse lipoma of the nape" in the donkey. Several others have been mentioned to me. So far as my inquiries have gone it appears to occur in castrated males of middle age which have been well fed. Although I have been told that they are very fond of beer, no one has suggested that they are likely to get much of it or to be fed with "grains." All the cases are alike but with great differences as to degree, slight forms being, in asses as well as in men, very common and extreme instances rare. I have not as yet in asses observed the condition in other parts than the root of the mane. A certain amount of thickening of the mons is common in both sexes, but the example which I have mentioned is the first and only one which it has been thought worthy of publication.

Haslemere.

THE PROGRESS OF INFECTION IN PHTHISIS.

CONTAINING A PLEA FOR THE TREATMENT OF EARLY CASES BY ABSOLUTE REST.

BY L. COBBETT, M.D. CAMB., F.R.C.S. ENG.,
LECTURER ON PATHOLOGY, UNIVERSITY OF CAMBRIDGE.

BEING a pathologist and no physician, I feel that I ought perhaps to apologise for venturing to write anything concerning the treatment of disease. Yet, while I clearly recognise that clinical experience only can establish the value of any treatment, I see also that the latter must be good or bad precisely as it corresponds, or fails to correspond, with the processes going on in the body. I therefore hold that it is legitimate for pathology to point to principles upon which methods of treatment may tentatively be based. I know, of course, that many a useful method has arisen from erroneous conceptions of disease, and that others, useless and even harmful, have been based upon crude views of pathology. Yet I think it cannot be doubted that if one knew accurately and in detail the true pathology of any disease, there would be no difficulty in deciding how to treat it.

My opportunities of studying tuberculosis hitherto have been mainly in the laboratory and post-mortem room and very little at the bedside. They have been derived largely from experiments upon the lower animals, many of them made in the laboratories of the Royal Commission on Tuberculosis at Stansted. But whatever the primary object of any given experiment, I have always tried by every means to gain some light on the nature of susceptibility and resistance to infection, and of the other conditions which help to determine the severity of an infection and the course it runs. Such observations, as well as others made in the course of experiments planned more particularly with the object now under consideration, have led me by degrees to form conceptions as to the way the body attempts to defend itself against invasion by the tubercle bacillus, and how it is that the bacillus so often succeeds in maintaining its hold. It is only recently, however, that the occurrence of pulmonary tuberculosis in more than one of my friends has strongly turned my thoughts towards questions of treatment, and has led me to inquire what is the pathological sanction for the methods actually in use, and which of the details of treatment are of the greatest importance. I do not claim any originality for my views, merely that they are the result of my own observations. I cannot hope to deal at all fully here with the question of the bearing of pathology on the treatment of phthisis, but merely to put forward some points which my experiences have impressed upon me.

Immunity the Cause of Recovery.

Let me put my argument in my own way and begin at the beginning. I remembered, in my early student days, being puzzled to explain the possibility of recovery from a microbic disease. How was it, I asked myself, that the patient finally triumphed over the vast host of invaders which had grown out of the few which first caused the infection, after he clearly had been unable to resist the attack of those few at the outset? The problems of immunity were then, as now, attracting much attention; and I well recollect with what a flash of illumination appeared the idea that the immunity conferred by one of the specific fevers must be due to the acquisition of new, or at least improved, powers of resisting the specific germ which causes them, and that *the very perfecting of the powers of resistance, which is the cause of the immunity which follows an attack, occurs during the course of the disease, and is actually the cause of recovery.*

Now the immunity which follows an attack of one of these diseases is specific—that is to say, the body has acquired new powers of resistance to one particular species of microbe and to no other, and since the cause of immunity and recovery are the same it follows that the cause of the latter is specific also. That it has little in common with what one calls the general state of the patient's health is shown by the fact that when they are most effective, as, for example, at the crisis of pneumonia, the patient's general health is manifestly far inferior to what it was at the moment of infection.

My first point, then, is that *the cause of recovery from infectious disease is the acquisition of specific immunity.*

Does Tuberculosis Confer Immunity?

With many infectious diseases it is a case of kill or cure, as, for example, with small-pox, in which either death follows quickly on infection, or immunity is established and the patient recovers. Tuberculosis is not of this kind. It is a comparatively slow disease, runs no definite course, and has but a feeble tendency to recovery. On the contrary, it too often continues to progress, more or less irregularly, and even if it becomes arrested one can never be sure that it will not recur. This disease then, as we see it at the bedside, does not appear to confer immunity, and this would seem to be the cause of the absence of any definite tendency to cure.

This view of tuberculosis is probably not wholly justified, and I think I shall be able to show that tuberculosis differs from other diseases, in the points which we are now discussing, only in degree, that this disease does indeed confer some immunity, though of a feeble kind, and that in this, as in other and more acute infections, the hope of recovery must be based on the acquisition of this immunity. That recovery is frequent, at least from the early stages of infection, is well recognised at the present day, and is proved by the great frequency with which healed, or at least quiescent, tuberculous lesions are found after death from other causes, lesions which, in the majority of such cases, have never been detected during life.

The Evidence of Immunity in Tuberculosis.

Many experimenters have attempted to produce immunity to tuberculosis in animals, and not altogether without success. Experiments made for the Tuberculosis Commission have convinced me that some degree of immunity to bovine tuberculosis can be induced in calves by injecting them with cultures of tubercle bacilli of the human type. Others have succeeded by different methods. But whatever method is used, even if the injections be repeated, the immunity attained is variable, and is never of high degree. It is not to be compared for a moment with that which may be induced in the horse against diphtheria. But while one clearly recognises this difference in degree, one cannot ignore that some kind of immunity to tuberculosis can be experimentally induced in animals.

In tuberculous man, too, there is evidence that some immunity to tuberculosis occurs. I am not now referring to those cases which recover without ever having been diagnosed, though such might be cited to the point, but rather to the more chronic cases of phthisis. For consider, the patient's lungs in such cases must often contain enormous numbers of tubercle bacilli, since they are constantly escaping in the expectoration and in such numbers as to set up an acute and rapidly fatal tuberculosis in susceptible individuals who happen to come within range of infection, and who receive a dose which is doubtless only a small fraction of the bacilli in the body of the original host. If one were to take, let us say, one-tenth of the bacilli in the body of such a patient and inject them into a healthy individual, no one, I think, could doubt—at least, no one who has had any

experience of experimental tuberculosis—that the recipient would rapidly die from acute miliary tuberculosis, and yet the original patient with ten times the number lives on.

Again, whether one accepts the statements of those who claim to find tubercle bacilli in the peripheral blood-stream of phthisical patients or no, one cannot doubt that stray bacilli occasionally find their way there. And yet persons with well-established phthisis hardly ever die from general tuberculosis. When generalisation does occur in tuberculosis it is almost always early in the course of the recognised illness. In such cases a lesion, indeed, may possibly have existed for a long time, but it has caused little or no disturbance, probably not enough to call forth any improvement in the powers of resistance.

The rarity of generalisation in cases of phthisis, then, together with the chronic course it runs in many cases in spite of the enormous numbers of bacilli present, lead me to regard the disease in such cases as running its course in a partially immunised individual, and I conclude that *tuberculosis in man does tend to confer some immunity, and that it is on the acquisition of the new or improved powers of resistance which are the cause of this immunity, slight though they be, that the hope of recovery mainly depends.*

What, then, are the new or improved powers of resistance to tuberculosis upon which so much depends? It is impossible as yet to give a satisfactory account of them, and it would take too long to discuss the question at all fully. But some kind of a rough answer may be gained by considering the lesions produced, for the lesion represents the structural reaction made by the body, *plus* the destructive effects of the bacilli and their poisons. Let us then consider lesions which progress up to a point and then recover—namely, those produced by subcutaneous injection into the calf of tubercle bacilli of the human type; for these, if used in large quantities, cause a very considerable tumour to appear at the seat of injection, and the infection undoubtedly takes root and makes some progress for a time, and yet recovery always takes place, no matter how large a dose has been given or how susceptible the calf. The tumour at the seat of inoculation is doubtless at the onset caused by the endotoxin contained in the large mass of bacilli introduced, and which slowly escapes from them, probably as the individual microbes perish. This toxin has a twofold action, causing necrosis where it is most concentrated—namely, immediately around the bacilli—but acting merely as a stimulus to cell division at a greater distance, at least upon the hardier elements of the tissue, such as the endothelial cells. In the mass of necrotic tissue around them the bacilli find protection from the bactericidal agents which the body would otherwise be able to bring against them, and they flourish and multiply exceedingly. The animal tissues in the meantime, unable to destroy the bacilli, build around them a wall endowed with high powers of resistance, composed mainly of fibroblasts and lymphocytes, much as in the analogous case of pyogenic infection an abscess wall arises around the pyococci and the pus which affords them shelter.

But the infection thus checked is not immediately brought to an end. In this form of tuberculosis, as in suppuration, the necrotic mass continues to enlarge at the expense of the surrounding granuloma tissue, which is probably continually perishing on the one surface and reforming on the other. Thus the necrotic mass increases, but the protecting wall retreats before it and continues to bar the way of escape to the bacilli. In the calf subcutaneously injected with 50 milligrammes of tubercle bacilli of the human type the tumour at the seat of inoculation may sometimes be of considerable size, and the neighbouring lymphatic glands may become greatly enlarged. The tumour, which is at first solid, caseates, and after several months its contents become fluid and bear a superficial resemblance to pus, but contain few recognisable cells. Frequently the skin ulcerates before the tumour has grown to any large size and the "pus" escapes, but even if ulceration does not occur the tumour after a time ceases to grow, and the infection becomes arrested. The animal's temperature, which has been raised for some weeks, returns to the normal, and bodily growth, which has been somewhat retarded, again goes on at the normal rate. At last, after many months, the animal appears quite well except for a diminished tumour at the seat of inoculation, and this is found to be formed by a dense wall of fibrous tissue lined by granulations enclosing the liquefied remains of the necrotic mass.

We need not stop to describe the lesions in the glands nearest the seat of inoculation; much the same changes take place there as in the local tumour, only ulceration does not occur; but something may be said of certain minute lesions which occur in distant organs. So inconspicuous are they that they seem to have escaped notice until they were seen at Stansted. They were found there in small numbers in about half the calves infected with the human type of tubercle bacilli, situated in the lungs and lymphatic glands, and sometimes in other organs. In a few cases they were quite numerous. They appeared, six months after infection, as spherical bodies, translucent, clearly defined, resembling seed pearls. They looked dark when situated in the light-coloured lung, but in the other organs they were lighter than the surrounding tissue. It was easy to pick them out cleanly on the point of a knife from the surrounding tissue, which was perfectly normal. They were partly calcareous, and sometimes contained tubercle bacilli. The source of these little healed tubercles was at first a puzzle to me, for I could not believe that in these cases the disease had progressed so far as to have become generalised in the accepted way, and then had become arrested. Experiment made with the object of studying their origin clearly showed that these little fibrous tubercles were due to the escape of small numbers of tubercle bacilli from the seat of inoculation during the first few days which followed an injection, and before the focus of infection had become surrounded by granuloma tissue; for when calves were killed within a few days of an injection bacilli were already present in small numbers in nearly all the glands and organs.

Such, then, is the history of the calf infected with tubercle bacilli of the "*human*" type. A local necrotic tumour arises at the seat of inoculation in size proportional to the quantity of bacilli injected. Some necrotic patches occur in the neighbouring glands, and little minute fibro-calcareous lesions may arise in small, or even large, numbers in distant organs. The disease always becomes arrested ultimately, the smaller lesions becoming fibrous and calcareous, the larger ones caseous and surrounded by a well-developed fibrous capsule.

When *bovine* tubercle bacilli are used the results depend upon the quantity injected. With comparatively small doses (millions in the place of milligrammes [1]) the history is very much the same as that described above, but with larger doses, such as 50 milligrammes, progressive miliary tuberculosis rapidly follows, and all the principal organs are found a few weeks later packed with small tubercles. The local lesion forms a striking contrast to that formed by tubercle bacilli of the human type, for instead of being well defined and surrounded by a well-marked capsule it is of the infiltrating type, penetrating widely into the subjacent muscle and into the overlying skin, and extending, sometimes obviously, along the lymphatics.

These observations on the lesions of calves injected with tubercle bacilli of the human and bovine types respectively lead me to believe that the powers of resistance which develop during infection, and which lead in favourable cases to cure, are partly local and partly general. Experiments made many years ago on the cause of the local immunity caused by erysipelas lead me to think that it is not improbable that the local powers of reaction become quickened and improved; possibly the endothelial cells become less sensitive to the poison, owing, it may be, to the development of an antibody, so that they now react by multiplication to a concentration of poison which originally would have caused necrosis. But whether the local powers of defence undergo improvement or not, we must believe that they hold the disease in check until new or improved constitutional powers, whatever they may be, have had time to become evolved, and so far perfected that the disease is arrested.

The Influence of Dose.

One lesson which strongly impressed itself on my mind when I was working at Stansted was that the severity of an experimental tuberculosis depends largely upon the number of bacilli used to provoke it. The evidence of this is fully reported in the Second Interim Report of the Royal Commission on Tuberculosis, Appendix, Vol. III., p. 257. I therefore need to quote only a few examples here. A heifer and a calf each received a subcutaneous injection of a 50-milligramme culture of bovine tubercle bacilli, while another

[1] Eastwood estimated that 10 milligrammes of bacilli contained 45,000,000,000 individuals.

heifer and another calf received a far smaller dose, calculated to contain 1,800,000 tubercle bacilli. The two first-mentioned animals developed an acute general tuberculosis which was rapidly approaching a fatal termination when they were killed 54 and 34 days respectively after injection, while the other two which received small doses remained well, and when killed 413 and 202 days later respectively were found to have only small calcareous nodules at the seat of injection and a few minute calcareous foci elsewhere.

Several other equally striking examples might be given, but it will suffice to mention the comparative effects of 50 milligrammes and 10 milligrammes of culture respectively injected subcutaneously into calves. There was reason to think that the virulence of the different strains of tubercle bacilli of the bovine type used in these experiments did not differ appreciably from each other; at least, our methods were not delicate enough to show any difference. Forty calves[2] were subcutaneously injected with the larger dose. All but one died from general tuberculosis in less than three months, the average length of survival being 33·7 days. Forty-one received the smaller dose, and of these 11 (27·5 per cent.) were alive and in fairly good condition at the end of three months; while those which succumbed did so after an average survival considerably greater than that of those which received 50 milligrammes—namely, 44·5 days.

These results were obtained with viruses of the bovine type which had been grown in artificial culture from cases of tuberculosis in children. A. S. Griffith obtained identical results when working with cultures derived from the cow.[3] Of 34 calves which were injected by him with 50 milligrammes of bacilli one only survived three months; the others either died or were in a dying condition when killed 30–40 days after injection. Twelve calves were injected with 10 milligrammes. Of these, four survived three months (33 per cent.).

The Influence of Individual Differences of Susceptibility.

It was usual at Stansted to inject two, and sometimes more, calves simultaneously with the same material in order to avoid errors which might arise from differences of susceptibility of the individual animals. These experiments therefore are well suited to show to what extent differences of individual susceptibility affected the result of such inoculations. Moreover, if we are satisfied that all the viruses used in a given series did not differ in virulence from one another, then one can compare together the individual susceptibility of all the calves which received the same dose of these viruses. In both Griffith's series and my own when 50 milligrammes of bacilli were used differences of individual susceptibility among the calves used exerted but little influence on the result. It is true that in each series out of 30 or 40 calves one was found strong enough to survive three months after injection. Yet all the rest died, or were dying when killed, in about five weeks. When 10 milligrammes were injected differences of individual susceptibility were much more evident. From 27·5 to 33 per cent. of the calves in each series survived three months, and some of these had very little the matter with them, while their fellows which had received the same injections died in from three to nine weeks. Frequently it was seen in a given pair which had received the same injection, and which were identical in age, size, and appearance, that one would die rapidly from general tuberculosis and the other would hold out well for three months.

These results prove beyond question that when the calf is experimentally infected with tuberculosis by subcutaneous injection the dominating factor in determining the severity of the resulting disease is the dose of tubercle bacilli injected, and that differences of individual susceptibility in the animals exert a determining influence on the result only when the dose of infecting bacilli lies between certain limits. In other words, no calf has resistance enough to overcome a really large dose, nor did our experiments show any calf feeble enough to succumb to a very small dose.

Now, are we justified in applying these conclusions, based, as they are, on experimental tuberculosis in one of the lower animals, to the disease as it occurs naturally in man? First, let us take the method of experimental infection—namely, subcutaneous injection with quantities of bacilli far larger than any which by any natural means could possibly enter the body. Subcutaneous infection is clearly not a close imitation of any natural means of infection, yet in one respect it is not so very unlike. I have already stated that during the first few days which follow a subcutaneous injection many bacilli wander from the seat of inoculation and reaching the blood get carried all over the body. This, except for the numbers of bacilli which reach the blood, is very much what must happen when tubercle bacilli, having entered through the lungs or intestines—it matters not for the moment—settle in some internal part, as, for example, the hip, and set up tuberculosis there.

The numbers of bacilli used in the experiments were far larger than any which by any possibility could get into the body under natural conditions. I have already mentioned that in order to produce a certainly fatal infection in the calf one had to inject 50 milligrammes of young culture. Still larger quantities had to be used to infect by feeding. The necessity for using these larger quantities was not because the bacilli of artificial cultures are attenuated, for even when emulsified lesions were used instead very large numbers of bacilli, as shown by the numbers counted in a small sample, had to be employed. Such quantities as one had to use to get a progressive infection would, then, appear to be of an altogether different scale of magnitude from any which gain entrance to the animal body under natural conditions One is tempted to agree with the opinion that infection does not occur under natural conditions unless some circumstances have for a time lowered the bodily resistance. But even if this be true it affords no reason for thinking that variations in the size of the dose do not produce corresponding differences in the severity of the resulting disease in cases of natural infection, just as they do when the far larger doses are given in experimental tuberculosis. Only in the former case, where abnormally susceptible individuals alone get infected, the variations in the dose which produce the differences in the severity of the disease lie between entirely different limits of size than they do in the latter case, where animals of normal resistance are employed.

Secondly, may we apply conclusions based on tuberculosis in the calf to that occurring in man? I think we may, for both man and the ox react very similarly to tuberculosis—the one, that is to say, to tuberculosis caused by the human type of tubercle bacillus, the other to that caused by the bovine. Both species possess very considerable powers of resistance. That man resists well we know, because so many infections, after having made some slight progress, become cured, and are only discovered in the post-mortem room. The ox resists we know, because small doses of bovine tubercle bacilli are insufficient to infect him, and even 10 milligrammes are by no means certainly fatal. In both species, too, natural tuberculosis often runs a chronic course. It is true, no doubt, that acute general tuberculosis is commoner in man than the ox. The latter, then, has probably in general a higher degree of resistance than man, yet I think that on the whole the two species are fairly comparable in this respect, and I believe that we shall not greatly err if we conclude that *in man as in the ox the severity of a tuberculous infection is largely determined by the number of bacilli which gain entrance at the start.*

This conclusion is further supported by the following consideration. I have already argued that in well-established cases of tuberculosis in man the disease is running its course in a partially immunised host. In such cases bacilli must from time to time escape into the blood stream and be carried to distant organs, yet no lesions occur in such organs as the liver, spleen, or meninges, which are commonly affected in general tuberculosis, yet the intestine and mesenteric glands frequently become affected. This immunity of one set of organs, together with the liability of the others to become affected, can hardly be due to any other cause than that the one receives only small quantities of bacilli from the blood, while the others are exposed to the enormous numbers which get swallowed from time to time.

At first sight it may not be easy to see why the dose of invading bacilli should play so important a part. It has been urged on the other side that since the bacilli multiply it cannot matter what the initial number of invaders may be, because a small number will soon come to be as many as a larger one.

The explanation of the influence of number of invaders on the resulting infection seems to me to depend partly on the

[2] For diagram illustrating this see loc. cit., vol. ii., p. 1029.
[3] Loc. cit., vol. i., opposite p. 4.

fact that the bactericidal substance in the blood of a normal person is strictly limited (it will suffice for a few bacilli, but not for a large number), and partly on the fact that the bacilli contain in their bodies a necrotising endotoxin, and the more there is of this at the start the more secure will the invaders be against the attack of the animal's defensive forces. But these explanations only serve to explain successful infection on the one hand, or total failure on the other; they do not explain, what is undoubtedly the case, that the size of the initial dose makes all the difference, even in the case of infections which progress at least for a time, and in which the bacilli undoubtedly increase in number. We are therefore thrown back upon the explanation that the powers of resistance, local or general, or both, augment from the very commencement of infection. So that when we put a small dose of bacilli into an animal the powers of defence immediately begin to augment, and have already become notably more efficient by the time the bacilli have come to equal in number the dose which would have proved fatal had it been injected at the outset.

I have so far endeavoured to show that in its tendency to induce immunity tuberculosis differs from most other bacterial diseases only in degree; that during the course of infection the powers of resistance are constantly increasing; moreover, that the severity of the disease depends, other things being equal, on the numbers of bacilli introduced at the onset. If these points are well established, it follows that as tuberculosis runs its course and the capacity of resistance increases *it will require as time goes on an increasing number of bacilli to infect any new region of the patient's body.*

Why is Pulmonary Tuberculosis more fatal than other forms of Tuberculosis confined to a Single Organ?

The answer to this question is, I submit, because there are in the lungs facilities for the spread of infection which do not exist elsewhere. In order to make this clear we must follow a little further the method of the spread of tuberculosis in the body. When a protective wall of granuloma tissue has been built around a focus of tuberculous infection the extension of the disease from that focus to distant parts is more or less completely prevented. The lesion, however, continues to increase in size. The necrotic mass grows at the expense of the surrounding granuloma tissue, while the latter continues to extend at the expense of the surrounding lung tissue. By degrees little neighbouring foci of infection run together, and thus the lesion grows locally until it either reaches a surface or the growth of the bacilli becomes arrested. Even the former occurrence is favourable to recovery, just as is the bursting of an abscess, for the mass of dead tissue which gives cover to the bacilli, together with many of the bacilli themselves, gets cast off. For this reason tuberculosis of the superficial lymph glands, when it does not rapidly lead to generalisation—that is to say, when the reparative process has once got thoroughly into action—almost always ends in recovery.

Tuberculosis of other organs also, the lungs excepted, terminates in recovery, I think, much more frequently than equally advanced tuberculosis of the lungs. This, I would suggest, is because the lungs, on account of their anatomical structure, offer far greater facilities for the infection of new areas than exist elsewhere. From a lesion in a bone or solid organ the bacilli can only get to neighbouring parts by the lymphatics or directly by the blood-stream. The former route is well defended, the latter is a very improbable one. In the lungs, however, the tuberculous focus discharges into a bronchus, usually a small one, and the infective material is by no means so safely got rid of this way as if it had been cast off on to the surface of the skin, but before it can escape from the body it has to travel by a long road with numerous turnings. The infective matter does not escape in a single expiration, but many are as a rule necessary to expel it. And since these expirations are apt to be forcible the corresponding inspirations are correspondingly forcible, and tend to suck the infective matter down neighbouring bronchi into new areas of the lung. Thus in this organ new foci of infection are frequently arising, lighted up too often by numbers of bacilli large enough, when removed from the highly resistant tissue which previously surrounded them, to constitute an overpowering dose in the existing state of the bodily powers of resistance.

When one watches the course of a fatal case of phthisis one cannot but be struck by the peculiar course run by the disease. The patient during the greater part of the time is slowly improving, but this general upward course is marked by sharp relapses which carry him each time to a lower level than ever he had reached before. Again he improves for a time, and again relapses, and is thus carried to a lower level still. And this process is repeated with comparatively long periods of improvement and short periods of relapse, until the end. These relapses, I believe, are commonly due to the infection of new areas during the attempted expulsion by coughing of material containing tubercle bacilli.

In a case I have recently followed the patient on one occasion in the early part of his illness coughed up a little pellet as large as a split pea, consisting almost entirely of tubercle bacilli. When I saw this mass of microbes, which must have weighed many milligrammes, I could not but think that it would have been an almost certainly fatal dose had it found its way into a new part of the lung at that early stage of disease when as yet but little immunity had been attained.

Now if it is, I believe, by the infection of new areas in the way described that phthisis commonly progresses (and I am not suggesting it is the only way, but rather the commonest and most dangerous way), I cannot help thinking that the first aim of treatment should be to prevent this recurrence of infection by every possible means, or at least to delay it as long as may be, in the hope that in the meantime the bodily powers of resistance should have been raised sufficiently to overcome it when it does occur. This can only be done by controlling coughing and enforcing rest in bed. In the early stages of the disease no excitement of any kind would appear justifiable. Talking should not be encouraged, and permitted only in a low voice, laughter prohibited, and exertion of any kind avoided, the general principle being that gasping inspiration following on breathlessness is the one thing to be avoided.

It may be objected that by following these instructions, especially by confining the patient in bed, the general health will be impaired. But does this matter so much as is sometimes thought? If pathology teaches one thing clearly it is that the powers to resist any given infection and the general state of health do not always go hand in hand. If it were otherwise, how could a patient recover from pneumonia when apparently at death's door, seeing that he had been unable to resist infection when in his ordinary general state of health? In tuberculosis, too, though I do not doubt that some infections such as influenza, and some conditions such as diabetes, impair the powers of resistance, yet by no means always does the state of the general health seem to run parallel to resisting capacity. In thinking over the various acquaintances of mine who have been attacked by, and in too many cases have succumbed to, tuberculosis, I have been struck by the fact that it has been as often the apparently strong as the apparently weak who have fallen victims. Some few of them, indeed, might have been selected as ideal specimens of humanity.

Resistance, then, to tuberculosis, like resistance to other infections, is a very specific matter, and does not necessarily go hand in hand with what one regards as the general bodily health. We commonly assume that the two go together, and do everything to encourage the general well-being. We prescribe the most nourishing food, recommend fresh air, and are not adverse, in what we deem suitable cases, to moderate exercise. So far good, but I think we should ever bear in mind in phthisis the menacing danger of the infection of new areas and do all we can to avoid it, or to postpone it until the patient has become more immune. And if we can do this in the early stages by absolute rest in bed, I do not think we should be deterred therefrom by the fear that the general bodily health will suffer.

Cambridge.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill announce "The Dawn of the Health Age," by Dr. Benjamin Moore, the small book being also published at Liverpool by the Liverpool Booksellers' Company, Limited. The book deals in a graphic way with the organisation of a great campaign against disease, and the effect of such a warfare upon the virility and fitness of the resulting race. The author advocates a properly organised national health service on the score of efficiency and economy. The book is written for the lay public.

THE PREPARATION "606":

THE TREATMENT OF SYPHILIS BY EHRLICH'S METHOD; INDICATIONS AND CONTRA-INDICATIONS.

Observations made in Germany.

BY DR. E. EMERY,

PHYSICIAN TO THE SPECIAL INFIRMARY OF SAINT LAZARE; LATE HEAD CLINICAL PHYSICIAN OF DERMATOLOGY AND SYPHILIS, SAINT LOUIS HOSPITAL.

(*Specially translated for* THE LANCET *by* Dr. J. G. HARE, *Bacteriological Department, King's College, London.*)

THE numerous reports which made the Ehrlich remedy known, not only to the medical world, but to the world as a whole, seemed to me, from the very beginning, to deserve seriously the attention of all physicians, especially those who made the study of syphilis and its treatment their speciality. I knew that Ehrlich had sent doses of his remedy to France and that they had been applied to a number of patients by competent and experienced men, but these researches were still in their infancy, and the field of experiments seemed to me too narrow, and in consequence my investigations were so limited that it was impossible to render an exact account of the various manifestations of syphilis and parasyphilis. In Germany, the researches undertaken on Ehrlich's remedy had been, however, pursued for several months in numerous hospitals. The patients who were treated already could be counted by the thousand, and thus the field of my own observations was widened considerably. The judgment of the various experimenting physicians, valuable as it was, found support by a number of clinical facts, which were strong enough to make it possible, there and then, to obtain from them certain principles and to lay down certain rules which do not risk immediate contradiction. In short, the multiplicity of processes as employed by each operator for the manipulation and preparation of the medicament before the injection were sufficient to supply me with valuable indications on their stability and their action, so variable in rapidity and continuance. I also have to add that Ehrlich's great renown attracted me irresistibly towards him, and it was my great desire to gain direct evidence from him of his expectations and convictions. I also wished to hear from his own lips his valuable recommendations regarding the mode of employing his remedy, its indications, and contra-indications.

None of my hopes were disappointed. Introduced to the great German doctor by a letter from Professor Alfred Fournier, who strongly advised me to undertake this journey, I can say, not without pride, that the name of my illustrious master acted like a charm upon the stranger, and that his own person and his work enjoy there the highest esteem. He assured me, even though he was already in correspondence with some of my compatriots, that I was the first French physician who had come to visit him for the purpose of inquiring into his discovery at his own laboratory.

I will not dwell here upon the conversations which I have had with the great man on various occasions, for this article is to make known the principal recommendations which he was good enough to give me; and he honoured me by entrusting me, without enforcing any restrictions regarding its employment, with a considerable quantity of his valuable preparation, which placed me in a position at once to commence the therapeutic applications which I pursued with activity.

In Professor Ehrlich's laboratory experiments are now being made upon animals. The applications of "606" to human beings are practised in clinical establishments and special hospitals of various towns under the direction and superintendence of experienced and prudent physicians who willingly allowed me to inspect their laboratories and wards. Some thanks are due to them as well for having allowed me to back up my knowledge by their own experience. I wish here to express to them my deepest gratitude. The observations which are to follow have been gathered principally from the practice and clinics of Professor Herxheimer of Frankfort, Professor Lesser of Berlin, and the physicians Wechselmann, Michaelis, Tomasczewski, and Blaschko. To the last named, who was untiring in his attention, I owe the most convincing information, especially of all the subjects which touch upon the technique of the administration of the remedy and of its clinical applications.

Professor Neisser of Breslau, whose opinion was of great importance to me, was good enough also to give me his eminent advice favourable to the method. For the accomplishment of the task before me the devoted coöperation of Dr. Sachs, the distinguished specialist of Frankfort, was very valuable. I hereby express my thanks to him.

Technique.

Every patient who is to receive the injection of "606" must have been examined previously with the greatest care both from the point of view of his state in general and of his organic integrity. The fundus oculi requires the most minute examination by the ophthalmoscope. The analysis of the urine is indispensable, and only when there is no exhibition of that waste which would preclude the use of the remedy and when the form of the disease is appropriate may an injection be made.

The patient who is to be treated (and this is one of the most important points to be conveyed to the physicians and the public) must be kept in bed during the first two or three days and after that confined to his room during a period varying from six to ten days. These precautions are, moreover, enforced by the watchful care which has to be exercised by the physician both as to the local reactions of the injection and as to the general state of the patient. One must bear in mind that the injection of "606" should not be applied to those attending as out-patients, and that it is the duty of all physicians to refrain from treatment of this nature as regards patients who do not come under this category.

I have no intention of dwelling any longer on the technique of the injection,[1] for my desire is but to furnish physicians with a guide giving the actual indications and contra-indications of "606" and a general outline of the future of the method.

Now I wish to give some of the general indications. The dioxydiamidoarsenobenzol is a yellowish powder contained in ampules in which a vacuum has been created and the manipulation of which, before the injection, requires a certain adroitness. It being always necessary to prepare the injection when about to be used and sterilisation not being possible after its preparation, it follows that the most exacting asepsis must be followed in its manipulation. The instruments, mortars, pestles, glass tubes, pipettes, shaking apparatus, &c., must be rendered aseptic by the spirit lamp flame or by the flame of a Bunsen burner. The different solutions are to be sterilised by the autoclave or by being sufficiently heated. I shall not repeat every time these directions for maintaining asepsis, which are of an equal importance for the various procedures.

1. *Herxheimer's process.*—Average dose, 0·50 gramme. The powder requires careful trituration in the mortar, and a solution of ½ cubic centimetre of 20 per cent. caustic soda has to be added; whilst continuing the trituration, 10 cubic centimetres of water are to be added in small quantities, and the injection is to take place immediately so as to prevent separation and precipitation.

2. *Blaschko's process.*—Blaschko also employs a 20 per cent. solution of caustic soda of 1·225 density, to which he adds about 0·09 gramme per decigramme of prepared powder—viz., 0·36 cubic centimetre for a dose of 0·50 centigramme of powder. The powder has to undergo a long trituration and then he adds from 4 to 6 cubic centimetres of hot boiled water.

3. *Michaelis's process.*—For a dose of 0·50 gramme of the drug from 1 to 2 cubic centimetres of ethylic alcohol is to be poured over the powder in a test-tube. 20 cubic centimetres of distilled and very hot water are to be added gradually with continued stirring. When it is well dissolved, 1 cubic centimetre of "normal" caustic soda solution (40 per 1000) per decigramme of prepared powder is to be added. To the liquid from 2 to 3 drops of phenolphthalein (1 in 200) are to be added. The colour becomes red. Some drops of a normal solution of acetic acid are added until the preparation takes the colour of yellow sulphur. At this moment add 2 or 3 drops of the alkaline solution in order to neutralise the excess of acid, and stop the operation when the upper part of the liquid shows a pink halo.

[1] I will complete these remarks and will give later in the journal La Clinique the description of Wechselmann's process and the technique of intravenous injections according to the process extolled by Professor Ehrlich.

The syringe which is used is one of 10 cubic centimetres capacity, armed with a platinum needle of large calibre of about 6 centimetres in length. Any pattern which can be sterilised will answer the purpose. In Germany the "Record" syringe is commonly used. The seat of the injection is previously washed with soap and water and cleansed with ether. In some clinics the asepsis is completed with a painting of tincture of iodine.

The spot chosen for the injection varies according to the operation: the region of the buttocks, back, inter- or infrascapular region, breast, or the infra-mammary region. The injection can be subcutaneous or intramuscular. The latter is made principally in the region of the buttocks and at spots generally chosen for the injection of insoluble mercury compounds.

I must admit that I have not seen the intravenous injection practised by any German physician. Though Professor Ehrlich recommended it in order, he said, to make use of its particularly rapid action upon syphilitic lesions, he intended it to be followed, however, at the end of two or three days by a subcutaneous or intramuscular injection, the latter being destined to prolong the curative action of the remedy by means of the accumulation of the drug becoming deep-seated in the tissues.

The injection of the substance is made at two periods of time, the same as for the insoluble mercurial injections, in one or two applications according to the quantity of liquid to be injected (viz., from 5 to 25 cubic centimetres) and to the capacity of the syringe.

The injection of "606" is accompanied by some local and general reactions, the importance of which need not be exaggerated, especially when the manipulation is made with great care. Nevertheless, they are sometimes rather violent, and therefore it is necessary to assure the patient that he is in no danger. These reactions are: 1. Pain, often easy to bear, sometimes violent, even very violent, which appears some hours after the injection. This pain shows its maximum intensity in the course of from 12 to 24 hours, and in some very few cases where it is intolerable the application of ice or the injection of morphia will be sufficient to relieve it. Sometimes it is prolonged in a diminished form for several days, and causes thereby a certain degree of functional disorder in the lower limbs with shooting pains. Even slight fibular peroneal paresis has been known to ensue. For a great number of patients the phenomenon implies more a painful embarrassment aggravated by depression than an actual pain, but sometimes it will persist for a long time. 2. The inflammatory swelling is rather similar to the local reactions which are caused by large injections of calomel. It seems to me that the subcutaneous injections, without being more painful than the intramuscular injections, rather favour the appearance of this tumefaction, which is immediate when the vehicle of the medicament varies between 15 and 25 cubic centimetres. This swelling is sometimes accompanied by redness of the skin, and at first sight it would seem as if an abscess was beginning to form, but the palpation of this tumour does not reveal any fluctuation at all. It is consistent, hard, and painful to the touch in general. If no fault in antisepsis or unskilfulness in the operation is committed no complication will ensue.

Fever occurs quite noticeably after the average dose of 50 centigrammes in one case out of four or five. The rise of temperature is most often very slight, especially when the patient has not committed any imprudence. Sometimes the rise of temperature may be altogether insignificant. Consecutive eruptions are rather frequent; generally everything confines itself, as we shall see later on, to a kind of accentuation of the specific erythemata, which are surrounded by a congestive halo, or an urticaria may ensue during the course of two or three days. These eruptions are but rarely of any importance.

Constipation generally occurs; diarrhœa sometimes ensues when a large dose is administered and is often to be found in cases where febrile reaction is violent, with dryness of the throat and other signs of arsenical intoxication. Duhot mentions this as a normal complication following on a large intravenous injection.

Researches on spirochætæ (reaction of Wassermann).—Before forming an opinion of the clinical results that were obtained I was struck with the efficacy of the treatment as attested by the laboratory control. It is indispensable that two laboratory researches are made before each reaction, the search for the spirochæte and the sero-reaction of Wassermann; this is an indispensable complement of clinical observation to ascertain the extent to which the treatment is efficacious. I have seen the spirochætæ disappear at the end of from 24 to 36 hours; but they may remain longer, without, however, being found after six or seven days. Even before its complete disappearance one can see by examination and by the ultra-microscope that its vitality is markedly attacked. The movements of the spirochætæ diminish or disappear, and the refraction, which otherwise is so characteristic of the parasite, passes away. Regarding the reaction of Wassermann, which will allow us to determine and appreciate by its course the regression of infection, it becomes negative in intervals varying from three weeks to two months. The disappearance takes place slowly and progressively, without undergoing the oscillations which I have met with in mercurial cures.

The comparative study of the disappearance of Wassermann's reactions in the mercurial treatment and in Ehrlich's method has not been pursued sufficiently to allow formal deductions to be made on the superiority of one or the other of these methods. It is right to recognise in any case that if the mercurial medication has sometimes given me complete and early negative sero-reactions, yet I have hardly ever obtained this result in a negative and durable fashion until after the strict application of prolonged intermittent mercurial treatment maintained during three or four years.

Evolution of the Syphilitic Lesions Treated by "606."

I propose to pass in review the manifestations which I have seen treated by Ehrlich's method by following the order in which they occur in the different stages of syphilis.

Chancre.—I have seen a number of patients, who were at the time under treatment for one or several genital or extra-genital chancres. The action of "606" seemed to me particularly rapid as regards a case of chancre on the lip which healed in three or four days; the submaxillary buboes were re-absorbed as by magic. I was less struck by the rapidity of the action of the drug on genital lesions. Some of them were clearing up in two or three days and were healed at the end of from five to ten days. Subjacent nodular infiltration, although greatly reduced, still remained. The inguinal buboes in most of the cases seemed to retrocede with some slowness.

The action on the original lesion by "606," taking into account only this first objective manifestation of syphilis, appeared to me, I must say, much less striking than for a number of other syphilitic lesions. This peculiarity had not at all escaped Ehrlich, who informed me of it himself, but as being exceptional. He reported a case to me where the seat of the chancrous ulceration was proof against all healing, and it only gave way after additional use of the mercurial treatment. The presence of the spirochæta persisted up to this stage. This is undoubtedly an unusual case, for generally the disappearance of the spirochæta at the stage of new syphilitic lesions is noticeable, as I have already stated, in an extraordinarily short period.

This mark of a relatively reduced efficiency of "606" upon primary lesions is explained to my mind by the vascular thrombi which to some extent appose themselves between the medicament and its contact with the spirochæte. It is not at all exceptional in ordinary practice to note the same phenomena with mercurial medication, especially when soluble preparations are employed. Soluble preparations act with an undeniably greater rapidity, even when the nodular induration often persists in an abnormal fashion. One must not conclude from these partial and exceptional failures, or from the slow action of the "606," that its efficiency is to be doubted at this stage of the malady. The syphilitic infection, it is true, has already gone beyond the limits of chancre and its bubo-satellites, yet the sero-reaction, almost always negative from three weeks to two months after the injection of "606," proves its sure curative action in an unimpeachable manner on the general infection. The only practical conclusion which can be drawn from this observation necessitates, if a rapid and complete cure of syphilis is to be attempted, a combination, as proposed by Blaschko, of the local treatment of chancre with the general treatment (destruction by the galvano-cautery, and even the local mercurial treatment). It is hardly necessary to state that in this case, when the local mercurial injection and even the general injections can be administered concurrently with

the "606," Ehrlich absolutely forbids the use of any other arsenical preparation such as atoxyl or hectine.

Secondary lesions.—Numerous are the cases of secondary syphilis for which I saw "606" employed. Now, in the first place, I will mention the extraordinarily efficacious action of this preparation on mucous plaques in all localities and of various kinds. The simple mucous patches of the tonsils and of the soft palate, the erosive syphilides or the superficial ulceration of the lips disappear as if by magic from 24 to 36 hours after the injection; not a trace can be found sometimes even 12 hours after its administration. The vulvar and penile syphilides, especially when accompanied by vegetating forms and when soaked for a long time, initiated and fostered by neighbouring suppuration, heal up more slowly, but the action of the drug is still very rapid in this instance. In the practice of Professor Lesser I have seen cases of very extreme syphilis of the vulva which were cured and healed completely in the course of from 8 to 12 days without any other local treatment than simple cleansing baths. The isolated or confluent vegetating syphilides disappear in about the same space of time. The lesions gradually begin to disappear after treatment, sometimes in 24 hours. Some of them disappear 5 or 6 days after the injection. This extraordinary efficiency and rapidity of action of "606" on lesions which are eminently contagious stands out by reason of one important part which this specific is destined to play in the prophylaxis of syphilis. The eruptive lesions of the secondary period give way also very rapidly under the drastic influence of "606." The granular syphilides react more quickly than the papular forms, and still more so than the papulo-granular forms or lichenoids. A certain amount of resistance exists to the treatment of certain skin manifestations of syphilis with "606" as may be noticed when mercury is employed.

The intensive mercurial treatment—namely, the use of calomel or of biniodide of mercury in large doses—seemed to uphold in some cases a comparison regarding intensity and rapidity of action with "606." The disappearance of the lesions in most of the cases was, however, remarkable. I have seen papulo-lenticular syphilides that were disseminated in an extensive form over the body of the patient disappear in less than three days, leaving only a light pink colouration behind.

It is as well to remark here that the injections of "606" cause a reaction on the skin of those patients suffering from secondary specific eruptions which was reported principally by Herxheimer. During the first few days following the injection it is often very noticeable to find macular spots which, when a roseola is in question, will be congested, take a very pinkish colour, augment even in volume, and will sometimes be surrounded by new eruptive macules. When papular syphilides of various kinds are in question the eruptive elements will then be encircled by a kind of areola, or rosy halo which gives the affection an appearance of a sudden aggravation. This additional eruption disappears rapidly, and with it a cure of the specific lesions is obtained. Herxheimer does not consider these frequent yet not always present manifestations as an unfavourable sign for the cure; on the contrary, they are, in his belief, the forerunner of a rapid regression of the lesions.

Now what can be said in reference to the serious secondary syphilides, those which we call early malignant syphilides, pustular, ulcerous, ecthymatous, raspberry-coloured syphilides? Above all, the treatment by "606" is a veritable triumph for these, even if the manifestation of them be single, small in number, or general. It is for affections like these that the healing power and eminent restorative action of "606" is most complete and rapid, and that all the more as the general affections and functional troubles, from which so great a number of patients suffer, become better and disappear as quickly as the cutaneous and mucous lesions are healed. Reappearance of strength, spirits, and activity, restoration of appetite, disappearance of fever and headache, improvement in colour, increase in weight, &c., —such are the phenomena which generally mark the extraordinary recovery of these patients. I have also noted identical successes, although they were slower, for infiltrated and non-ulcerated forms of tuberculous syphilides *en placard*. It seemed to me as well, though Professor Herxheimer is not of this opinion, that certain forms of very local tuberculo-ulcerous syphilides (forehead, wrists, arms, and shoulders) heal up less quickly than the general forms.

By the side of these secondary manifestations, which are nothing more than the lesions of early tertiaries, and upon which the mixed medication (iodide of potash and mercury) shows a very energetic and comparatively rapid curative action, there are other manifestations which are noted for their tenacity and prolonged resistance to all the old treatments. For instance, I may mention deep and extensive inveterate forms of palmar and plantar syphilitic keratosis. I had the opportunity of observing two cases, one in Professor Ehrlich's laboratory itself, the other in the practice of Professor Herxheimer. The first case was completely cured in a relatively short period of time, and in the second case the lesions had almost entirely disappeared in about a week after the injection.

Tertiarism.—The tertiary manifestations do not resist treatment by "606." One can even say that the action of the drug is particularly startling for all ulcero-gummatous forms in this stage of syphilitic affection. Among other examples I will only mention the case of an enormous gummatous ulcer on the leg which was seen in Professor Erhlich's laboratory, and of which more than half was dispersed in five days. It is quite remarkable that the phenomenon of periostitis, which sometimes is so painfully subjacent to the gummatous manifestations, is the first to disappear. In all cases of periostitis it is known that the pains disappear from the first night following the injection.

I must quote here a case under Professor Lesser's care, all the more remarkable as I was able to verify myself from the examination of the patient and the careful study of his chart the extraordinary preventive inefficiency of mercury administered in all its forms: inunctions and injections since the year 1900. It was a case of two enormous contiguous gummatous ulcers developed in the centre of the dorsal surface of a tongue having already undergone the commencement of a superficial sclerotic degeneration. The pain resulting from this prevented the patient taking any food except in liquid form. Now this affection, of which an excellent coloured photograph admirably reproduced the lesion that was still intact eight days before my visit, was totally and radically cured at the time I made my examination. There remained only a linear fibrous scar towards the middle line; the rest of the tongue had regained its normal suppleness; all pain and functional trouble had disappeared. In the same way in Professor Herxheimer's clinic a gumma on the roof of the mouth to which no local treatment had been applied had been completely cleansed and its edges were well on the way towards healing three days after the injection.

It does not seem necessary to follow this up by speaking of more striking cases. However, I cannot pass over in silence a very grave case of gummatous ulcerative pharyngeal and peri-laryngeal syphilis under the care of Dr. Michaelis, lesions which put the patient's life in serious danger, yet were totally cured in a few days. More striking and perhaps more significant still are the two following cases observed in Dr. Michaelis's clinic. They relate to tertiary affections of an unusual variety, of little danger in themselves, it is true, but very offensive to the patient, and on good grounds said to be incurable, or at least ameliorated with difficulty in the majority of cases. He had to deal with an ozæna from which the repulsive smell disappeared 48 hours after the injection and which was radically cured three weeks later. This fact may be compared with the extraordinary results attained by von Zeissl and Duhot in the treatment of a diffused hypertrophic "syphiloma" on the nose and upper lip. The second patient was stricken with a chronic syphilitic arthropathy which had resisted all treatment but which yielded to the really miraculous action of "606."

The treatment of visceral syphilis constitutes one of the most interesting points in this branch of therapeutics, and will, no doubt, become more so, but the relative scarcity of cases and the difficulties encountered in their diagnosis and their observation place them amongst those least studied up to the present. Mention must be made nevertheless of cases of syphilitic icterus cured in less than a week by Wechselmann, and of a case attended to by the same doctor of ulcerative syphilis of the rectum rapidly cured with a very slight stenosis supervening which did not inconvenience defæcation.

As regards lesions in visceral syphilis, such as hepatic or renal syphilis, Ehrlich's treatment may be applied to them with exceptional benefit, and I can already see a fine result

accruing in one of Dr. Bensaude's patients afflicted with a serious recurring syphilis of the stomach in spite of the mercurial treatment. But in all these cases of visceral syphilis it is indispensable that a very close clinical examination and the investigation of Wassermann's sero-reaction permit one to conclude with certainty as to organic lesions of a syphilitic nature. We shall see, in fact, further on that all visceral lesions of another nature constitute a formal contra-indication.

My attention has often been attracted and held by the application of "606" to cases of syphilis of the nerves, but before starting on this subject I will describe what I have witnessed as to lesions in ocular syphilis. The amelioration of cases of conjunctivitis, choroiditis, and iritis that I have seen under treatment was indubitable, but the treatment was of too recent a date to enable one to estimate definitely the result which was announced as excellent. Gluck, however, reports a case of iritis with synechia in which the photophobia had disappeared on the second day, and where the eye had returned to the normal after eight days. He brought about likewise the cure of a double iritis, but after a resistance lasting three weeks. The same author also mentions a parenchymatous keratitis which was cleared after two days, and visibly ameliorated, but incompletely cured when the patient left the hospital 21 days after the injection.

In spite of the formal contra-indication established by Ehrlich himself in the presence of certain nervous manifestations Dr. Wechselmann quotes at least five cases of syphilis of the central nervous system, of which two are of recent date, which underwent treatment without harm by "606." I have myself in Dr. Michaelis's practice assisted at the cure of one of these lesions in cerebral syphilis presenting nevertheless a threatening aspect, the symptoms of which were soon reduced to a few attacks of headache. A woman afflicted long since with syphilis showed, amongst other pre-ataxic lesions, a commencement of papillary atrophy. The injection of "606" as stated by the ophthalmologist who had closely inspected the state of the eye, had considerably improved the acuity of vision.

The formal interdictions of Professor Ehrlich himself and the echo of quite recent accidents following on the use of "606" as regards syphilis of the nervous system oblige me to show a great deal of reserve as to the therapeutic successes attained in these conditions. Thus Dr. Fraenkel and Dr. Grouven announced on August 25th a case of death ensuing two hours after the intravenous injection of a dose of 40 centigrammes on a young man afflicted with a cerebral gumma. One of the first questions that I put to Professor Ehrlich referred to the case of one of my young patients stricken with syphilis of the central nervous system barely eight days after syphilitic infection. The mercurial treatment having only given partial results, I inquired as to the possibility of applying an injection of "606." Professor Ehrlich, in opposition to my wish, absolutely forbade the use of his remedy. I gather that until a distinction based on experience can be made with real security between patients afflicted with the various forms and localisations of syphilis of the nerves, it is advisable to show a great deal of circumspection. It is quite different with a class of patients who appear to derive great benefit from this method when they enjoy ocular integrity. I am referring to the tabetic cases at the very beginning of the affection.

Hereditary syphilis.—The idea of applying the Ehrlich treatment to hereditary syphilis was so natural that a special study was made of it from the commencement. The substance was injected without harm in several women who were pregnant. Gluck, however, mentions a case where there was cessation of the heart beats in the fœtus shortly after the injection. I have myself seen a baby a few days old literally covered with syphilitic pemphigus, and who had received from Dr. Michaelis an injection of 10 centigrammes of "606." Commencing from that day, its weight had increased progressively to a considerable extent, and the cutaneous lesions and buccal symptoms had almost entirely disappeared.

I must call to mind here the urgent recommendation made to me by Professor Ehrlich on this point. According to him babies should not receive more than from 3 to 5 centigrammes of his preparation. Even then he considers this dose as fatal for the majority of them if one does not take the following precaution based on a very curious fact of observation. A baby had been completely cured of its apparent syphilitic lesions by taking its mother's milk, who had herself been subjected to an injection of "606." Professor Ehrlich prudently concluded from this that it was advisable to have recourse for some little time to the beneficent action of the mother's milk, who had been previously injected, before proceeding to inject the baby itself.

No opinions have yet come to my knowledge bearing on cases of tardy hereditary syphilis.

Relapses.—I have not been able to verify any case of relapse myself, but some observers have remarked on them. This phenomenon, as pointed out by Wechselmann, is explained by the fact that the spirochæta, contrary to the trypanosoma, is only a parasite of the blood in a very transient manner, and leaves it, setting up isolated lesions in different parts of the body. These are apt to become active again and to return to the virulent state after some considerable time. This is the reason, moreover, why positive sero-reactions follow on negative sero-reactions at variable intervals.

Non-success.—Does Ehrlich's method, properly speaking, show cases of complete non-success the same as mercury does apart from its use in parasyphilis, where it seems to have failed up to the present? I have not been told of any instance, but I have witnessed a case under Professor Lesser's care where a man was attacked with ulcerative syphilis on the cranium and face, and the lesions showed no modification about 10 days after administering the injection. The assistant who examined him thought, from his observation of the persistency of the tumour formed by the injection, that a kind of encystment of the substance had been formed. It is probably in order to avoid this trouble that Dr. Michaelis applies a vigorous massage to the injected part for at least 10 minutes after having given the injection. Professor Ehrlich also told me of a case where a very tardy cure seemed to him to be due to the previous administration of arsenical preparations.

To sum up, I would conclude:—

1. *That the Ehrlich method up to the present is contra-indicated* as regards elderly men; for all persons having non-syphilitic visceral lesions—renal, cardiac, hepatic, splenic, pulmonary, and vascular affections, such as advanced aneurysm of the aorta; again particularly as regards patients who have not a normal condition of the fundus oculi. Towards patients who suffer from a severe syphilitic affection of the brain, such as recent hemiplegia, acute or sub-acute meningo-encephalitis, it is necessary to observe the utmost caution, and, awaiting more ample information, to intervene only in very grave or desperate cases when mercury has ceased to be efficacious. Constitutional weakness and cachectic conditions are not always contra-indications.

2. *That the Ehrlich method is formally indicated:* (*a*) for all patients where the lesions do not yield to mercury; (*b*) when a relapse takes place following immediately on an apparent cure with mercury; (*c*) in cases of repeated relapses; (*d*) when a total mercurial idiosyncrasy contra-indicates the use of all mercurial forms of treatment; (*e*) for all patients attacked with malignant syphilis, with secondary or tertiary syphilides deeply destructive and mutilating, or most serious on account of their position and the disorders or dangers that they occasion; (*f*) again, for attacking syphilis when the chancre first appears, on condition that one adds to this the initial treatment of the spot attacked by an intermittent and prolonged mercurial course.

3. *That in every other case* one may, according to the circumstances and fitness independent even of the infection, use either Ehrlich's method or the old mercurial methods. I think, as do a number of writers on syphilis, these two methods of treatment assist and supplement each other in a certain number of cases. A long comparative study of the two kinds of treatment, of their advantages, their inconvenience, and their efficiency, will allow one to determine within narrower limits the precise indications for one or for the other.

Future of Syphilitic Persons treated by "606": Importance as regards Prophylaxis.

A definite cure, and under one treatment, is it a thing already realised or realisable? This question of the definite cure of syphilis by "606" is one of those which have thrown most confusion on the real value of Ehrlich's discovery. In debates brought to the knowledge of the public at large the influence of this therapeutic treatment on syphilitic manifestations has constantly been mixed up with its action on

the definite evolution of the malady. The incontestable superiority of this method in the treatment of a great number of conditions has just been pointed out. Let us discuss now its action on syphilitic infection itself.

One cannot help being attracted by this admirable conception of Ehrlich of the *therapia sterilisans magna*—that is to say, of this sort of knockdown blow given to the malady at the very moment of its inception. But how can one demonstrate this almost miraculous action that we so ardently desire, that we believe to be perfectly realisable, but which we have only partly seen as yet? We have at our disposal three available methods: animal experiments, the reaction of Wassermann, and the clinical evolution of the malady. Experimenting on animals is subject to some objections. One cannot help being struck with the difficulty in generalising spirochætæ in an animal, whilst in the case of man the spreading of the organism takes place with such rapidity that the excision of the part first involved, however early it may be, is always too late. Certainly we have to admit that almost all the spirochætæ are destroyed by the first injection. We know, however, that a second one is sometimes necessary to cure an immediate relapse. In these circumstances, how can one help fearing that some of these micro-organisms may escape total destruction and establish themselves in different parts of the organism in such a way that they are fortified against the therapeutic action of the drug? Truly, Wassermann's reaction will be a valuable indication for us as regards the degree of virulence in the infection, but we must bear in mind that this reaction only gives indications for a variable time and that, on the other hand, negative results have sometimes coincided with localised tertiary outbreaks.

There now remains the clinical evolution of the malady in patients treated by "606." A certain number, a minority it is true, of these patients certainly are not cured by one injection only, since several doctors have had relapses under observation, as I have already related above. The question remains as to whether we have any knowledge of syphilis definitely cured. Yes, certainly, and in an immense majority of cases. But have we not all seen how syphilis that has been ignored or misunderstood, and consequently not put under treatment, will remain quiescent during the first stages of its evolution and remain dormant during periods of 10, 20, or 30 years, and even during one generation and will come to life again in the light of that most dangerous malady of the nervous system—general paralysis? How can we establish clinically a fundamental difference between this kind of natural immunity and that which we can apparently obtain from Ehrlich's method, or those which are the habitual consequence of an intensive mercurial treatment?

No writer on syphilis has ever thought that however striking the action of mercury may have been (and cases are not rare) on the initial lesions of the malady, a definite guarantee has resulted therefrom against any early or late relapse. It is, on the contrary, to the prolonged and methodically regulated action of mercury that we owe a large number of definite cures. Why give to "606," in spite of its splendid promises, the definite credit that we have refused to mercury, and neglect henceforth the guarantees that we assume from the fundamental treatise of syphilis? The future, but a far future no doubt, will bring to us on this point the elements of appreciation which at present are wanting. But if we are now, and shall be kept long, deprived of an infallible criterion for appreciating the definite curative value of this medication, let us not despair of realising some day that this wonder may be accomplished by Ehrlich, for this task is not beyond his lively conception. In short, if nothing is more difficult than to appreciate the value of a drug this difficulty becomes even greater when applied to a malady like syphilis, of which the particularly variable advance, the frequent remissions, and spontaneous cures constitute so many causes capable of leading into errors the wisest clinical practitioners.

If it is demonstrated some day that Ehrlich's curative method can do without any help, in the meantime, at least, one is permitted to associate with this method those which have up to the present borne the brunt of the fight against syphilis so valiantly and so successfully. One cannot without injustice and imprudence forget and despise the admirable preventive services due to prolonged intermittent mercurial treatment extolled with such high and indisputable authority by Professor Alfred Fournier, and I firmly believe that the security of patients will find its best guarantee in the fruitful alliance of the two therapeutics.

I can only repeat here my statement made above. Ehrlich, who is opposed to the parallel use of other arsenical preparations, is in no way opposed to the simultaneous or consecutive administration of "606" and of mercury. From this very moment, however, the curative and preventive rules towards the individual of Ehrlich's method are not the only ones that one should consider with cheerfulness. It is equally certain that its action will preponderate in the struggle against the propagation of syphilis. We shall owe to it a certain prophylaxis due to its action, so constant, so rapid, and so durable on the mucous patches and in general on all the erosive or ulcerative lesions from which infection is disseminated. We may possibly see likewise, thanks to Wassermann's sero-reactions, the rapid cures, and this from one application, of syphilis in prostitutes under observation. The discovery of a latent syphilis necessitating an injection of "606" would assure at least for some considerable period absolute innocuousness, whilst at the present time the protective measures are unfortunately too often tardy, and therapeutic intervention of difficult application because they are too frequent.

Will Ehrlich's method give us any new data toward the problem, often a very delicate one, the question of the marriage of syphilitics? The conditions at present decreed are based on the frequency and intensity of relapses, the length of the affection, and also on duration of the treatment. As regards "606," we may venture to hope that the veto resulting from the circumstance of malignity and of relapses of the evil will no longer have a reason for being exercised. On the other hand, the question of duration will still have to be considered. This arises from the state of uncertainty we are in as to the definite curative action of this remedy, and the removal of the initial stage of the malady must for the present remain our best security. What treatment should be insisted on? Sero-reaction renewed at fixed intervals can by its negative results justify to a certain extent the absence of all treatment previous to the injection of "606," but we must not lose sight of the fact that negative results have sometimes been compatible with tertiary outbreaks, and under all conditions *it would always be better to exact the extra precautions of mercurial treatment.* For the somewhat numerous patients who are not strictly conformable to the rules of preventive mercurial treatment, but as regards whom one cannot say that marriage is forbidden because their syphilis is of old standing and has not caused lesions for a long while, it would be prudent to advise as an additional security the injection of "606" a few months before their marriage.

May one hope that the therapeutic application of "606" will soon emerge from the phase of a study in order to take its place in the domain of medical practice? This remains to be decided by the German master, and he alone will be the judge, and a good judge, of the opportune moment. Surely we may at once proclaim that "606" is a remedy of remarkable power; but the subject of contra-indications, not perhaps completely dealt with by recent experiments with the famous remedy, and therefore still a little obscure, inevitably leads to a certain number of disappointments.

How can we wonder that a remedy possessing such strong activity and curative powers should sometimes bring about troubles, and even cause some danger to accrue to certain individuals and to certain organisms? An exemption to the contrary would be at least singular, and there is all the less reason for blaming it for the contra-indications levelled against it by the author himself since mercurial preparations themselves are not proof against this reproach, although people have in a peculiar way, I might almost say ridiculously, exaggerated their maleficence. It is true that inexperience and want of caution have often been solely to blame in such cases, but it is but wise to foresee their repetition when dealing with "606," and the best warranty one can have against these compromising elements is to make no use of the valuable remedy until the indications and contra-indications have been thoroughly and definitely demonstrated. It is as well to foresee the pessimistic interpretations of this method that

failures or accidents might occasion. But my absolute conviction is that it will overcome all resistance, coming from whence it may, in the same way as its illustrious predecessors, radio-therapeutics and sero-therapeutics themselves paid their experimental tribute.

Whatever may be the fortunate future of Ehrlich's discovery, one cannot withhold an unreserved admiration from this sympathetic *savant* whose whole scientific career is a model and an example of ingeniousness, of logic, and of perseverance. No link is wanting in the unbroken chain of his experiments all directed towards one end. From the very beginning of his studies Ehrlich set himself the task of determining the elective affinities of certain chemical substances towards the various organic tissues. After having shown us the affinity of the granulations in blood corpuscles towards certain colouring matter, after having proved the existence of chemical substances which are fixed by the living micro-organisms in the human body, he discovered this elective action shown by certain arsenical compounds towards spirilla. We can state therefore that the discovery of "606" is not due to mere chance, but, on the contrary, is the ultimate result of a whole series of researches conducted with scrupulous care and admirable certainty of deduction. It is better than the spontaneous creation of a purely intuitive genius: it is the crowning point of a splendid scientific career and the work of a lifetime.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON PSORIASIS FROM A BACTERIOLOGICAL POINT OF VIEW.

BY A. D. SERRELL COOKE, M.B., CH.B. EDIN.

THE causation of psoriasis has for some considerable time been a source of dispute among dermatologists, as, while some claim that the disease is neuropathic in origin, others maintain that the disease is parasitic in nature. It was from the latter point of view that a research was undertaken in the laboratory at St. John's Hospital, Leicester-square, by the writer in conjunction with the bacteriologist of that hospital. On histological grounds it seemed reasonable to suppose that if a micro-organism were to be constantly found it would have to be searched for in the rete and papillary layer of the skin in active psoriatic lesions; and at the outset it may be stated that in all the cases of psoriasis coming under observation, to the number of 20, a bacillus was found to be constantly present. This is the more interesting, as, so far as can be ascertained, no bacillus has been before described in association with psoriasis.

Lang[1] believed he had found a fungus, and this or an apparently similar one was found by others, including Wolff,[2] Eklund,[3] and Beissel.[4] Ries,[5] however, showed that the alleged fungus was an artificial product consisting of eleidin. Micrococci were observed by Angelucci[6] and De Matei, while Unna described morococci. Crocker[7] found minute circular bodies with central dark spots, loosely clustered and in dense masses.

Cases of alleged communication have been recorded.[8] The disease has been known to occur after vaccination on the vaccinated areas,[9] while Lassar,[10] Campana,[11] Tommasoli, and others are stated to have communicated the disease to animals by rubbing in the scales, blood and lymph of an infected human. Destot[12] succeeded also in successfully inoculating himself from a case occurring after vaccination.

In the present research, almost invariably in all the 20 cases which came under observation, the following organisms were to be found—viz.: (1) short stumpy bacilli; (2) very large cocci, tending in culture to take the arrangement of staphylococci, and also to occur in groups of four; (3) somewhat large cocci, tending in culture to take the arrangement of staphylococci, and also to occur in pairs; and (4) cocci, of the type of staphylococcus aureus and albus. Frequently also were to be seen cells resembling yeast cells or the so-called bottle bacillus of Unna; on one occasion was seen a structure which appeared to be a fungus with spores; on another were seen bodies resembling those described by Crocker; and on yet another occasion a short, somewhat slow growing spore bacillus was seen and grown in culture. Without commenting on the findings in all these 20 cases of psoriasis, it would be as well to point out that they would appear not only to correspond with the collected findings of others in psoriatic lesions, but also, in addition, to show the constant presence of a short stumpy bacillus. This short stumpy bacillus, which was invariably present, has the following morphological characters. It is a short, thick, stumpy rod, measuring $1 \cdot 75\,\mu$ in length, with some tendency to arrangement in pairs; it is non-motile, stains readily with aniline dyes, and is Gram-positive. It is an aerobe and a facultative anaerobe, growing well at 37° C.; on agar a white glistening growth occurs after 18 hours; on broth the organism grows very slowly, producing some general turbidity; on Fleming's oleic acid glycerine agar medium a growth is obtained similar to that on ordinary agar; on neutral-red glucose agar a thick, somewhat creamy growth is obtained after 18 hours. On Sabouraud's medium no growth was seen, either aerobically or anaerobically, after a period of incubation at 37° C. lasting two weeks. On other culture media the following results were obtained—viz.: (1) peptone water, slight general turbidity; (2) glucose peptone water, acid, no gas; (3) lactose peptone water, *nil;* (4) mannite, *nil;* (5) dulcite, *nil;* and (6) litmus milk, slightly acid with some curdling.

In conclusion, it may be stated that the question of the communicability of psoriasis and the effects of vaccine treatment are now being investigated. When these and other points have been gone into, and observations have been completed, a full and detailed account of the research will be published.

Kennington Park-road, S.E.

[1] Lang: Archiv, 1878, p. 443.
[2] Wolff: Ibid., 1884, p. 337.
[3] Eklund: Annales, 1883, p. 197.
[4] Beissel: Monatshefte, vol. xv., 1886, p. 385.
[5] Ries: Archiv, vol. xv., 1888, p. 871.
[6] Angelucci: At International Congress, 1881.
[7] Crocker: Diseases of the Skin, vol. i., p. 326.
[8] Cantrell: Medical Record, vol. xlix., 1896, p. 627; Hammer: Mittheilungen aus der Medicinischen Klinik zu Würzburg, vol. ii., 1886, pp. 404, 405.
[9] Rohé: Journal of Cutaneous Diseases, 1883, p. 11 (two cases).
[10] Lassar (on animals): Berliner Klinische Wochenschrift, 1885, p. 771.
[11] Clin. Dermosif., p. 1, 1906; British Journal of Dermatology, 1906, vol. xviii., p. 337.
[12] Destot: Journal of Cutaneous and Venereal Diseases, vol. i. (1883), p. 203.

NOTE ON A CASE OF HYSTERICAL DYSPRAXIA.

BY TOM A. WILLIAMS, M.B., C.M. EDIN.,
FOREIGN CORRESPONDING MEMBER OF THE NEUROLOGICAL AND PSYCHOLOGICAL SOCIETIES OF PARIS; NEUROLOGIST TO THE EPIPHANY DISPENSARY, WASHINGTON, D.C.

A NEGRO male, aged 30 years, was seen by me with Dr. Randolph at the Garfield Hospital, Washington, two days after admission for acute intoxication with alcohol. For 24 hours he was severely delirious, refusing to stay in bed and yelling violently. He refused nourishment and medicine, and had to be restrained with a sheet. Even when he was calmer he could give no coherent account of himself, but admitted drinking heavily. He described terrifying hallucinations, and would gaze fearfully into one corner of the ward, where he saw fierce animals. He also felt creatures as if crawling up his arms under the skin.

The day before I saw him, while he was talking with Dr. Randolph in a disconnected fashion, his right arm slowly was raised from the bed. It went tremulously, as if with great difficulty, as it were resisting a strong restraint (dyspraxia). After about half a minute the arm dropped passively. The patient appeared quite unconscious of this movement, neither facial expression nor words indicating that he was aware of it. On being asked to raise the right arm the performance was repeated while he watched it in a detached manner. When told that the left arm could not be moved he repeated the performance with it (negative suggestibility). In both cases the arm was fully extended, and he appeared unable to bend it. But on being told that

there was nothing the matter with the arm he bent it quite promptly and naturally (suggestibility). When asked to protrude his tongue he did so promptly, but could not retract it, although he appeared to make an effort (dyspraxia). Even when sharply ordered to do so he only succeeded in violently contorting the face with a tremulous spasm, the tongue remaining protruded. But on being quietly told that there was nothing wrong with his face, and that he could draw in his tongue quite easily, he immediately did so, and placidity returned to his countenance. Other similar observations were made, but were not noted.

The next day when I first saw him the phenomenon did not persist; and he was no longer violent, and was rational, although the hallucinations had not quite disappeared. He was discharged well the next day.

It is unfortunate that more complete tests of the patient's praxis were not made; but the two incidents related are clearly dyspraxiæ of a most ordinary kind. Neuronic intoxication is the most likely genesis of the disability. But it is evident that organic disability was only partial; and required only a stimulus of the right quality to excite the mechanism of eupraxis.

In this case the stimulus needed was suggestion, as the history clearly shows. The minimising of the apparent difficulty of bending the arm and withdrawing the tongue was a pure suggestion, conveyed by the matter-of-fact attitude of the physician and his quiet tone. In this respect, the symptoms conform to the second postulate of Babinski's definition of hysteria—viz., "Removeable by suggestion-persuasion." The first postulate of Babinski's definition—viz., "Producible by suggestion"—was not ascertained; as when I first saw the patient the symptoms had disappeared, although his suggestibility was still perceptible, as is so frequently the case in the period of post-alcoholic intoxication.

In view of the psychological mechanism governing the suggestibility of post-alcoholic intoxicative states, it would not be surprising to find that hysterical dyspraxia of this type will be quite commonly found when such patients are explored.

Washington, D.C.

NOTE ON A CASE OF APICAL PNEUMONIA WITH MENINGEAL SYMPTOMS.

BY G. H. PRIDHAM, L.R.C.P. LOND., M.R.C.S. ENG.

LOBAR pneumonia in children having an onset which markedly simulates meningitis is, I suppose, not very uncommon. It seems to me from the following case that this occurrence might be explained on a purely anatomical basis, involving the conception of an actual attack of the membranes by the specific organism.

The patient, a previously healthy male, aged 3 years, had a sudden onset of vomiting in the night, accompanied with severe earache on the left side. When I saw him at 11 A.M. the face was flushed but there was no rash. The temperature was 103° F., and the pulse proportionately rapid. The breathing seemed natural and the alæ nasi inactive. There was a little tenderness over the tip of the mastoid bone on the left side, but earache was not then complained of. No previous discharge had been noticed from either ear. Examination of the lungs revealed no adventitious signs. On looking at the throat the pharynx was reddened, the blush extending on to the tonsils. I thought the case to be one of tonsillitis and treated it accordingly. On the next day the boy had a fit, which was followed by head retraction, drowsiness, and twitching of the extremities. The earache was again complained of, and he constantly put his hand up to the left ear. The temperature remained high. Suspecting acute otitis media, I sent him into hospital in case surgical procedures should be required. On examining the drum, however, no bulging was seen. The breathing becoming more rapid, soon afterwards, on auscultation in the right axilla, a patch of consolidated lung became apparent on the third day of the illness. The crisis occurred two days later.

That the middle ear on the left side was inflamed, though not ending in suppuration, I think to be undoubted from the symptoms present. The mucous membrane lining the middle ear is in direct continuity with the naso-pharynx by way of the Eustachian tube. The trachea and bronchi provide an easy path for direct extension to the lung of infection in the naso-pharynx. In this way a continuous tract extends from the middle ear to the lung. Post-mortem examinations on those dying from pneumonia show the bronchial mucous membrane to be red and inflamed. There are several ways for direct extension of the inflammation in the ear to the membranes of the brain. These include lymphatics and the sheaths of the facial and auditory nerves. Lastly, the petro-squamosal suture is unclosed in quite young subjects (Box and Eccles's "Clinical Applied Anatomy").

Grantham.

NOTE ON AN UNUSUAL CASE OF LIPOMA.

BY J. BARRÉ DE W. MOLONY, M.B., CH.B. EDIN.,
LATE HOUSE SURGEON, VICTORIA HOSPITAL FOR CHILDREN, CHELSEA.

I AM indebted to the courtesy of Mr. Joseph Cunning for permission to publish these notes.

A male child, aged 4½ years, was admitted to Victoria Hospital, under the care of Mr. Cunning, with the following history. Two months before admission a swelling of about the size of a hazel nut had appeared under the left nipple. The swelling had gradually increased in size without causing pain, until it had attained the size of a walnut.

Examination showed a rounded tumour of the size of a walnut just below, and external to, the left nipple. The skin over it was normal in appearance and freely mobile. The surface of the tumour was smooth and its consistence elastic; it was fixed, and there was an impulse on coughing. The child was not in very good condition and there were signs of early tuberculosis at the left apex. A provisional diagnosis of cold abscess was made.

Operation.—A transverse incision was made over the tumour. On dividing the deep fascia a smooth, rounded portion of a lipoma was found projecting between the ribs like the head of a stud through a button-hole. The central portion of the "head" had completely separated the fibres of the external intercostal muscle and had come to lie directly under the deep fascia. The neck of the tumour forced the ribs apart to a distance of 3 centimetres. The base of the tumour, which lay behind the ribs, formed three-fifths of its whole bulk, and was lobulated. One lobule extended outwards between the intercostals for a distance of half an inch. The surface of the tumour nearest the pericardium was rounded. The tumour was easily shelled out.

The tumour had evidently arisen between the intercostal muscles. As it increased in size the anterior portion had been slowly pushed through the external intercostal. Possibly in time the posterior portion, aided by intrathoracic pressure, would have made its way between the separated ribs, and the whole tumour have come to lie in front of the external intercostal muscle.

St. George's Hospital.

THE RADIUM WATERS IN THE JOACHIMSTHAL.—The Austrian Government has published a report upon the official observations made on the radio-active waters in the Joachimsthal bath establishment. 209 cases were treated, the water being used both for bathing and for drinking. Of these, 169 cases are reported as having been improved and 40 as having undergone no improvement. In the first category are cases of rheumatism, uric acid arthritis, neuritis, neuralgia, and of lymph deposits of various kinds, but none of the cases of carcinoma or new formations or of essential disease of the spinal cord or auditory apparatus or of general wasting appeared to have been benefited. In cases belonging to the former category the radium water treatment compares favourably with that by electricity, hot baths, mud baths, massage, &c. Probably the dosage is of importance, though further observations are needed to show how far treatment is to be carried in order to stimulate the vitality of the cells without overstepping the mark and running the risk of paralysing or destroying them. In order to allow of a much more extended use of these waters orders have been given for the erection of a Kurhaus with 60 separate baths, all of which will be supplied with radio-active water by means of a system of pipes. A medical director will also be appointed.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

MEDICAL SECTION.

Use of Belladonna in Dyspepsia.

A MEETING of this section was held on Nov. 22nd, Dr. J. MITCHELL BRUCE, the President, being in the chair.

Dr. F. CRAVEN MOORE and Dr. L. KILROE communicated a paper on the Use of Belladonna in Dyspepsia, in the course of which they declared that clinical experience having established to their satisfaction that the administration of belladonna led to a definite amelioration of the subjective manifestations of certain types of dyspepsia, it was decided to conduct a systematic investigation into the action of this drug on the functional activity of the stomach in a series of consecutive cases, both with and without manifestations of gastric disorder. The results of this investigation confirmed and amplified the earlier observations of Riegel, in showing that belladonna exerted a definite inhibitory effect on the secretory activity of the stomach. The administration of this drug along with, or some short time previous to, a test meal was associated with a well-marked diminution of the acid and peptic values of the stomach contents; this effect was generally greater in such pathological conditions as were associated with hypersecretion, but still obtained in conditions of hyposecretion. The effect of the administration of belladonna on the volume of the stomach contents was but slight, and that variable; but whilst by this method it would appear that the drug influenced but little the emptying of the stomach, more recent radiographic observations led to the belief that it exerted an influence in inhibiting and relieving spasmodic contractions.

Dr. W. H. SWAFFIELD suggested that the different amount of absorption of belladonna in different individuals might account for some of the variations in the results.

Dr. A. F. HERTZ said that the paper confirmed his clinical experience of the value of atropine in the treatment of the conditions under discussion.

Dr. NATHAN RAW agreed that belladonna was of the greatest value in some forms of dyspepsia.

Dr. H. FRENCH pointed out that in the treatment of bullous dermatoses, when other remedies failed, small doses of belladonna were beneficial, and raised the question whether belladonna modified the secretion of the alimentary canal and influenced some toxic origin of the condition.

Sir JOHN BROADBENT observed that in cases of spasm there was also dilatation of the stomach in the vast majority of cases of duodenal ulcer.

Dr. KILROE said that in certain cases of spasm associated with hyperacidity definite clinical results were obtained, and even in a few cases of carcinoma great relief was obtained by the administration of belladonna.

The PRESIDENT asked if the patients were permanently benefited by belladonna or were more or less dependent on its continuous use.

Dr. MOORE, in replying, said that the absence of lasting effect was obvious, but that occurred with other drugs. It was by keeping the local conditions well within the normal limits that they were enabled to overcome the vicious circle and in that way belladonna was a drug of great value.

PATHOLOGICAL SECTION.

Dried Mouse Cancer.—Acute Ulcer of Stomach.—Atypical Chloroma.—Bacillus Typhosus.—Method of Mounting Mosquitoes.

A MEETING of this section was held on Nov. 15th, Dr. W. S. LAZARUS-BARLOW being in the chair.

Mr. S. G. SHATTOCK and Mr. L. S. DUDGEON, in describing experiments with Air-dried Mouse Cancer (which were carried out at the Imperial Cancer Research) observed, in confirmation of Jensen's original statement, that the simple drying of cancer pulp in the air at the body temperature was lethal to the cancer cells. No growths could be raised from such material after it was remade into pulp with salt solution and inserted subcutaneously into other mice. That was one factor in preventing the transference of carcinoma from one person to a second by means of carcinomatous débris. In one of their experiments a minute portion of the material remained half dried, and when the whole was remade into a pulp and inserted beneath the skin of 12 mice growths appeared in three. There was extremely little evidence that carcinoma was ever an air-borne disease as were certain of those due to bacterial infection. The authors had sprayed cancer cells suspended in salt-solution into the mouths of mice, the process being repeated more than once, but so far with a negative result. Osler's statement that primary carcinoma of the lung was particularly common amongst the Schneeberg cobalt miners was worth bearing in mind; there the pneumonokoniosis doubtless prepared the way for the other disease. The remarkable vitality of the cancer cell in the undried condition, however, showed that the possible infectiousness and contagiousness of cancer could not be safely ignored. Extending their observations, the authors found that the subcutaneous insertion of air-dried carcinoma produced no prophylactic immunisation to the growth of a subsequent graft, even if that insertion was repeated. That accorded with the results obtained invariably at the Imperial Cancer Research, which showed that dead cancer tissue, whether killed by radium or other means, was powerless as a prophylactic. Neither did the insertion of air-dried carcinoma produce any curative immunisation towards the growth of a graft previously made. The use of a centrifugalised extract (the material being first ground with glass) was similarly inert. By the method of rapid centrifugalisation the whole of the débris was got rid of from an extract in a very rapid manner, a method quite as effective as the use of filter and press. If that extract was used prophylactically the growth of the subsequent grafts, instead of being retarded, in fact was accelerated—a hypersensitiveness was induced. The same result had been obtained by Dr. Haaland from the use of pressed extract.

Dr. CHARLES BOLTON read a paper on the Influence of Diet upon the Formation and Healing of Acute Ulcer of the Stomach. He considered that the theory with regard to the part played by the gastric juice in the production of gastric ulcer received further confirmation, because ulceration was the more rapidly produced in proportion as the gastric juice was allowed a longer period of contact with the wall of the stomach. The epithelium grew over the base of an ulcer more rapidly when the animal was given a milk diet than when it was given a meat diet. In the case of a milk diet the base of a moderately sized ulcer was usually completely covered by the twentieth day, whilst in the case of a meat diet the same sized ulcer would in most cases be uncovered in the centre at that time. Frequently in the case of meat-fed animals the ulcer was completely uncovered on the twentieth day, the granulation tissue of the base of the ulcer having become necrotic. Such an ulcer might be only one-fifth of the size of the original ulcer owing to the contraction of the fibrous tissue in the base although healing had only commenced at the edge. In the treatment of a case of ulcer of the stomach the following principles should be observed: during the early stages of the healing of acute ulcer the patient should be given a food which did not stay long in the stomach and which does not excite a copious flow of gastric juice. The period of treatment in bed should be at least three weeks. The starvation diet of the older physicians was not necessary, because the general nutrition suffered too much and because ulcers healed well on some diet such as the above. In the case of acute ulcers which were extending or chronic ulcers, healing could not be expected to occur in three weeks, because the ulcer must first be got into a suitable condition for healing, and then, owing to its size and thickness, the healing must take some weeks longer to be completed. So that the treatment in bed was to be conducted like that of simple acute ulcer, but extended over a period at least twice as long. Since in many cases of gastric ulcer there was hyperacidity of the gastric juice, and when the gastric juice was acting destructively hyperacidity increased that destructive tendency, that high degree of acidity should be controlled by the administration of alkalis. That was not so necessary in acute ulcer as in the more chronic forms, because the few estimations that had been made of the gastric secretion in acute ulcer showed that it was not hyperacid, and he had found experimentally that the effect of acute ulcer was to

diminish the secretion in the early stages, and that the latter became normal as the ulcer healed.

Mr. A. C. D. FIRTH and Dr. J. C. G. LEDINGHAM communicated a paper on Atypical Chloroma. The authors observed that during the last few years the occurrence of certain forms of chloromatous growth differing widely from the typical picture of chloroma had led to considerable modification of their views regarding the position of that disease as an independent entity, and there appeared to be an increasing tendency to bring it into line with the primary diseases of the hæmopoietic system, and especially with the acute leukæmias. In its typical form chloroma was a disease occurring mostly in young subjects and characterised by the presence of green tumour-like infiltrates connected principally with the periosteum of the bones of the skull, sternum, ribs, and vertebræ. The blood changes described in various cases varied considerably, but the differential blood picture had been found to resemble that of the acute leukæmias which might or might not be associated with any very marked increase in the total leucocyte count.

Dr. C. H. BURTON BRADLEY (Sydney) communicated a paper on the Biological Characteristics of Bacillus Typhosus, with especial reference to the Fermentation of Dulcitol and Arabinose. He concluded that the fermentation reactions of bacillus typhosus were identical up to the fourth day. Bacillus typhosus ferments glucose, mannitol, galactose, and sorbitol with the formation of acid within 24 hours. Dulcitol and arabinose were fermented more slowly, acid being produced usually during the second or third week. Lactose, saccharose, dextrin, inulin, amygdalin, salicin, raffinose, and erythritol were not fermented. Gas was never produced by bacillus typhosus. Litmus milk was turned faintly acid generally within 24 hours and remained thus permanently. The time taken to ferment dulcitol or arabinose varied widely even in the same culture tested repeatedly and also amongst daughter colonies from a single plated culture. The time taken by a given strain of bacillus typhosus to ferment dulcitol or arabinose was very markedly quickened for that strain by a sojourn in media containing dulcitol or arabinose respectively. Within certain limits the increase in (dulcitol) fermenting powers varied with the length of sojourn in a (dulcitol) containing medium. The increased activity as regards fermentation of dulcitol persisted through several generations of agar cultures but eventually tended to die out. It also persisted on stored agar cultures for over a month if that culture be subcultivated and tested. No other modifications either as regards agglutination, fermentation reactions, or cultural characteristics were seen in the agar cultures after passage through dulcitol (or arabinose) containing media other than the increased activity towards the corresponding "sugar." The cultures after passage through dulcitol become "dulcitol active," and after passage through arabinose "arabinose active." The "dulcitol active" cultures did not show any increased activity towards arabinose nor did the "arabinose" active cultures show any increased activity towards dulcitol. Mere passage through peptone water or through other sugars—e.g., mannitol, lactose, or saccharose—did not increase the fermentative activity towards dulcitol or arabinose. It was not found possible to make bacillus typhosus ferment lactose or saccharose. By means of passage through appropriate sugars it was found possible to develop two modifications of a coliform organism, each active toward a new sugar not easily affected by the original strain. The fermentation activity of bacillus typhosus, while one of remarkable constancy in quality, could be increased in quantity and suggested that certain work of classification amongst colon organisms required reconsideration.

Professor S. ARTHUR POWELL of Grant Medical College, Bombay, communicated a paper on the Bentley-Taylor Method of Mounting Mosquitoes. The process was as follows. Prepare (1) a solution of 1 per cent. celloidin in absolute alcohol; and (2) a solution of celloidin in absolute alcohol of the consistence known as "thick" in ordinary histological work. He believed that used for those insects was 5 per cent. It was essential that no ether be employed in the solution as it made the scales transparent. Catch the mosquito, chloroform it, and when dead or narcotised place a drop of solution 1—thin celloidin—on a cover-glass. Place the insect back downwards on the cover-glass. In the majority of cases wings and legs spread themselves out in the orthodox exhibition position. If they did not do so the solution remained fluid sufficiently long enough in Bombay at a temperature of 85° to 90° F., for from three to five minutes, to permit them to be adjusted with a needle. When the thin solution had become "tacky," to use the language of the motorist—i.e., in about eight or ten minutes from the commencement of operations—place a drop of the thick solution, No. 2, over the insect. Invert the cover-glass over a hollowed slide, to which it may be fixed by a ring of balsam. The specimen was then complete, and in that condition both ventral and dorsal surfaces could be examined under the microscope.

OTOLOGICAL SECTION.

Exhibition of Cases and Specimens.

A MEETING of this section was held on Nov. 18th, Mr. ARTHUR H. CHEATLE, the President, being in the chair.

The PRESIDENT showed: 1. A case of Congenital Malformation of the Auricle and Meatus. An X ray photograph had shown the presence of mastoid cells. An exploratory operation had been performed, but no meatus was found. There was no evidence of the tympanic plate. 2. A case of Healed Fracture of the Right Temporal Bone in which the line of fracture in the meatus could be seen. The patient was a man, aged 30 years, with a fracture of the base of the skull, involving the right temporal bone, at the age of 10 years. Middle-ear deafness had resulted. The President also recorded a note of a case of Nerve Deafness in a syphilitic of 30 years' standing. The patient, a man, aged 51 years, had had syphilis at the age of 21. For seven or eight years he had noticed the gradual onset of deafness, with ringing tinnitus in both ears. The Wassermann test was positive.

Dr. H. J. DAVIS showed: 1. A specimen of Temporal Bone from a case of thrombosis of the cavernous sinus; proptosis and suppurative phlebitis of both orbits following right mastoid disease of 20 years' duration; extra-dural abscess; the lateral sinus and jugular vein were unaffected. The patient was a woman aged 36 years. 2. A case of Extra-dural Abscess tracking through the Jugular Foramen into the Neck; sloughing of the middle-third of the internal jugular vein; operation; recovery. The patient was a girl, aged 19 years, whose illness began with sickness and shivering fits. She had been treated as a doubtful case of enteric fever for five weeks before operation. Widal's reaction was negative.

Mr. SYDNEY R. SCOTT recorded two cases: (1) A case of Lateral Sinus Thrombosis (Streptococcal) with Early Pulmonary Metastasis; recovery. (2) A case of Retro-cerebellar Abscess; Necropsy. This was a case of latent mastoid disease in which an extra-dural parasinous abscess had formed and was followed by retro-cerebellar intra-dural abscess. The path of infection along the great horizontal fissure of the cerebellum could be traced.

Dr. DAN MCKENZIE showed a case of Infiltration of both Auricles (? Chronic Lymphangitis), in a woman, aged 32 years. A vaccine had been prepared from the moisture in the depths of the meatus and injected subcutaneously, with the peculiar result that certain fleeting attacks of local cutaneous inflammation had ceased to appear. Lymph-angioplasty had had no very decided effect.

Mr. C. E. WEST showed two patients: (1) A case of Chronic Dermatitis of the Pinna due to Infection by Staphylococcus Aureus, which, under treatment by vaccine, showed signs of improvement. (2) A case of Chronic Infective Labyrinthitis. The patient, a female, aged 23 years, had had right facial paralysis for about a week: total right deafness and loss of thermal excetibility before the radical mastoid operation. The facial nerve was found to be absolutely isolated by granulations which sprouted from the labyrinth.

Dr. W. H. KELSON showed the Brain of a Patient who died from Cerebellar Abscess. Operation for nasal polypi; acute otitis media; radical mastoid operation. Cerebellar abscess opened, followed after 26 days by death. A necropsy was performed. The infection was streptococcal. The brain showed the site of the abscess surrounded by œdema and a small secondary focus of infection on the upper surface of the adjacent cerebellar hemisphere.

Mr. H. J. MARRIAGE showed a large Tuberculous Polyp removed from the Middle-ear of an Infant aged 7 months. A microscopical examination had been made. Radical

mastoid operation was performed. Twelve days after operation an injection of tuberculin was given. Three months later tuberculous dactylitis developed. Six months later tuberculous glands were removed from the neck. The child had grown into a fine sturdy boy.

Mr. G. SECCOMBE HETT showed a case of Malformed Auricle (Congenital) in a child.

MEDICAL SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Nov. 14th, Mr. CHARTERS J. SYMONDS, the President, being in the chair.

Dr. CECIL WALL showed two cases of Myasthenia Gravis. In the first case the patient was a coachman, aged 30 years. The condition had lasted for 15 months. The patient dated the commencement of the illness from a nervous shock received whilst driving a pair of horses in a thunderstorm. Subsequently general weakness became noticeable, affecting all parts of the body. In the second case the patient was a female, aged 21 years. The condition started five years ago, commencing with diplopia and drooping of the eyelids, and general weakness followed.

Dr. A. F. VOELCKER showed a case of Myasthenia Gravis. The patient was a brass-worker, aged 14 years, whose illness commenced five months ago, when he noticed that towards the end of the day he was unable to talk clearly.

Mr. H. A. T. FAIRBANK showed a case of Bilateral Congenital Dislocation of the Patella after Operation. The patient was a girl, aged 6 years, who went to the Hospital for Sick Children, Great Ormond-street, in November, 1909, complaining that the knees gave way. Examination showed outward dislocation of the patella on flexion of the knees. The right knee-joint was exposed by raising a skin flap; a fusiform piece of capsule and synovial membrane was excised from the inner side of the joint. A vertical incision was made through the capsule on the outer side of the patella, the capsule was raised to the outer side of this, and the synovial membrane was incised vertically well to the outer side of the capsular incision. Incision of the capsule and synovial membrane in different places allowed the patella to be drawn inwards without leaving much of a gap on its outer side. The incisions on each side of the patella were then carried down beside the ligamentum patellæ and through the periosteum on each side of, and to a lower level than, the tubercle of the tibia. The insertion of the ligamentum with the periosteum below were then raised and swung inwards and fixed in their position with a screw. The periosteum was left undivided below, so that the insertion of the quadriceps into the tibia was never really divided. The edges of the gap on the inner side of the joint were brought together with catgut; the skin flap was brought across the front of the joint and the wound was closed. The left knee-joint was treated in an almost similar manner. Both patellæ were now in their normal positions and apparently were not inclined to relapse. The child walked stiffly, and flexion of the knees was limited on both sides owing to deficient length of the quadriceps muscles, which had never been developed to the normal length.

Mr. P. MAYNARD HEATH showed the case of a boy with a Supracondylar Process of the Humerus. The patient's mother noticed a lump on the inner side of the right arm a month ago. It had given rise to no symptoms. The X ray plate showed a typical supracondylar process of the humerus.

Mr. DUNCAN C. L. FITZWILLIAMS showed two cases of Dislocation of the Inner End of the Clavicle.

Mr. W. C. G. ASHDOWNE showed a case of Multiple Cartilaginous Exostoses. The patient was a male, aged 21 years, with exostoses of the long bones of the extremities. One growth was removed in 1907 from the inner surface of the left tibia as it was coming through the skin, and at the same time both bones of the leg were divided to correct genu varum.

Mr. A. E. BARKER showed five cases. The first was one of Recovery after Acute Pancreatitis.[1] The second was a case of Removal of Carcinoma of the Splenic Flexure done six years ago. The patient was still apparently free from recurrence. Only a little mucus escaped occasionally from the stump of the ileum. The third was a case of Removal of Carcinoma of the Transverse Colon involving the Umbilicus and Abdominal Wall. The fourth was a case of Removal of Transverse Colon adherent to Tumour in the Umbilicus. The patient, aged 35 years, was admitted for a discharging lump of the size of a large egg in the umbilicus. This was excised with the transverse colon, to which it was adherent. The lump was apparently one of those rare tumours of the umbilicus derived from fœtal remnants left in the umbilicus somewhat of the nature of a dermoid. The patient made an excellent recovery. The fifth case was one of Appendical Abscess in a female, aged 38 years, who was operated on in Brighton two and a half years ago for appendical abscess. This was followed by fæcal fistula and great emaciation. For this she was sent to Mr. Barker two years ago. There was then discharge of fæces in the right iliac region, and underneath this a large hard mass. On opening the abdomen extensive tuberculous infection in and around the cæcum was found. The ileum two feet above the valve was first planted into the transverse colon end to side. Then the hepatic flexure of the colon was cut across and closed above the junction. The ascending colon, cæcum, and last two feet of ileum were then completely removed.

Dr. HERBERT S. FRENCH showed two cases of Locomotor Ataxy with absence of knee-jerk on the right side and well-marked knee-jerk upon the left.

Dr. J. W. CARR showed a case of Choreiform Movements in a man, aged 30 years, who had involuntary jerky movements of all the muscles of the body, most marked when attention was directed to them. They diminished when he kept perfectly quiet, and ceased during sleep. Voluntary muscular movements tended to diminish the involuntary ones and the man could get about fairly well, but there was considerable general muscular weakness. There was no evidence of organic disease. The treatment adopted had been rest, isolation, spinal douches, faradism to the back, and nerve sedatives, but there had been very little improvement.

Mr. V. WARREN LOW showed a case of Benign Growth in the Tibia of a boy, and a case of Marked Congenital Syphilis of Bone in a man 38 years of age.

Dr. CHARLES W. CHAPMAN showed a case of Generalised Atheroma without apparent valvular disease, whose symptoms of palpitation and forcible action of the heart followed by a duration of complete stoppage, also of substernal pain at times severe in character, cleared up under iodide of sodium.

[1] THE LANCET, Oct. 29th, 1910, p. 1264.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

Yellow Fever.

A MEETING of this society was held on Nov. 18th, Professor RONALD ROSS being in the chair.

Sir RUBERT W. BOYCE read a paper on Yellow Fever in West Africa. He said that his paper was the result of investigations made during June, July, and August, 1910, at the request of the Colonial Office. For the purposes of this investigation he visited Southern Nigeria, the Gold Coast and Sierra Leone, and the Sierra Leone Protectorate. The present inquiry formed the fourth upon which he had been engaged. The first question he put to himself was: What was the prevalence of the stegomyia calopus in West Africa? He soon satisfied himself that it was by far the most common mosquito of a very large number of towns. In yellow fever, as in the case of the sister disease, malaria, the continuous or endemic source of infection was the comparatively dense native population of the West Coast. The historical record of outbreaks and sporadic cases, mistaken diagnosis, and the absence of any destruction of infected stegomyia in the past was evidence in favour of the disease being endemic on the coast and of its having been repeatedly mistaken for other diseases or entirely overlooked. Reluctance to diagnose yellow fever had been universal and existed at the present day. There appeared, as it were, to have been a universal conspiracy to deny the presence of yellow fever. Some said that the fever was of no account, only attacking the new arrival; others wished to have nothing said, as quarantine authorities were insisting on rigid regulations; others thought that as the name

caused such a panic amongst the public, the better and more business-like policy was to say nothing about the disease, or to deny its existence or return it as some other disease, or make light of it. There was no doubt that the young medical officer had experienced great difficulty in deciding what is and what is not yellow fever. Until the dreaded black vomit appeared physicians had hesitated to diagnose it, and in the meantime the harm had been done and the disease had spread. Carroll had stated that experiments showed that genuine yellow fever might be so mild in character that no man, no matter how extensive his experience might have been, would dare to diagnose it as such, unless he knew the disease to be prevailing at the time. Yellow fever had masqueraded under many euphonisms as "inflammatory fever," bilious remittent fever, and intermittent fever. Continuing, Sir Rubert Boyce said that it seemed strange that there should be obstacles in the way of the diagnosis and notification of yellow fever; but such was the case. In all the outbreaks which he had had to investigate, he had encountered them, and writers upon yellow fever had, time and time again, drawn attention to that point. Sir Rubert Boyce concluded by stating that yellow fever was endemic and common in West Africa, and occurred there in all its various forms. There was but one remedy, and that was stegomyia destruction; and there was but one result to expect—namely, a most marked increase in the health and prosperity of West Africa.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

Marriage, Insanity, and Degeneration.

THE quarterly meeting of this association was held at the rooms of the Medical Society of London, Chandos-street, W., on Nov. 15th, Dr. JOHN MACPHERSON, the President, being in the chair.

A resolution of congratulation to the President on his restoration to health after a severe illness was cordially approved.

Dr. G. H. SAVAGE read a contribution on Insanity and Marriage, in which he said that the subject of marriage in relation to insanity was at present beyond practical legislation in this country, but it was of immense importance for the social stability and for individual welfare. Though physicians could not legislate, they had to advise, and that advice was sometimes taken. A dogmatic statement that the insane should never be allowed to marry was unscientific and unpractical, for it assumed that all insanity was alike and was to be treated as of equal value. Adolescent cases with melancholic symptoms or maniacal excitement recovered completely. He had also encountered cases of women who had had attacks of insanity before the menopause who had married when that period had passed and remained well, but few would recommend such unions. Unions after acute delusional insanity, of probable toxic origin, had also turned out well, but he would hesitate to advise such. The question of family neurosis would influence the advice given, while dread of recurrence might act in some subjects as an auto-suggestion. Marriage should be hindered or prevented in cases with a history of recurrences, and in youths showing alternating periods of depression and buoyancy, and the suppression of such material facts should be a ground of nullity. It was impossible to prevent the marriage of all who were related to the insane, and it would not be good as he had seen successful families reared by neurotics. He would never allow marriage where there were fully organised delusions or hallucinations, nor in epilepsy accompanied by mental symptoms. Moral perversions should also be a bar, and marriage with the idea of reformation should be discouraged. Marriage was no relief for neurasthenia or hypochondriasis, and after sexual disorder it was dangerous. Dr. Savage concluded his paper by propounding the following questions: Should anyone who has been certified as of unsound mind be allowed to marry? If so, which cases, or which forms of insanity, may be considered as not barring healthy unions and healthy offspring? Should not the recurrence of any form of insanity be a bar? Should evidence of syphilitic affection of the central nervous system bar marriage? Should marriage ever be recommended in cases of mental disorder? Should insanity be a plea for divorce?

Dr. C. T. EWART, in a paper entitled "Eugenics and Degeneracy," said that his object was to consider whether it was advisable to discourage parenthood of the unfit, and to encourage large families by the fit, with a view to national efficiency. Nations which became luxurious and idle decayed. In the elementary schools of the country 35,000 children were mentally defective. 2521 women mentally defective added 1000 illegitimate children to the population yearly. He advocated a higher estimate of woman, whose strength should be husbanded for the future welfare of the race. The giving birth to a new citizen involved a duty to the community in respect of his health, mental and physical, and a claim by the parents on the State that the State should make the conditions of life favourable to that child's efficient growth. There was plenty of good stock in this kingdom, and its reproduction should be encouraged, while checking the continuance of the evil strains. Public opinion looked to the medical profession for guidance towards the welfare of the race.

Mr. MONTAGUE CRACKENTHORPE, K.C., expressed himself dissatisfied at the meagre and often misleading published summaries of evidence tendered to the Divorce Commission. What students of eugenics were in search of was information as to what extent insanity was heritable. Recurrent insanity was much more dangerous to society than permanent mental breakdown, because subjects of the former were let out from control, and thus were able to reproduce, and it seemed a truism that the degenerates were more prolific than the sound. He thought the time had come when marriage should not be permitted in the absence of inquiry as to the history of the members of the families of the contracting parties. He hoped there would be given to the world a pronouncement as to what was and what was not transmissible disease. The aim of those interested in the matter was the elimination of the unfit and the propagation of the fit, with the consequent raising of the level of humanity.

Dr. T. B. HYSLOP said the general public was becoming alive to the fact that there were conditions which brought about degeneracy, and that those must be dealt with first by education, and, if that did not suffice, by legislation. He believed the present Divorce Commission would result in a reform of the conditions under which marriages were entered into. Two classes of people came to the physician for advice as to marriage. The first were afraid the advice would be contrary to their wishes to get married, and so took no notice of it. Others came as a sort of forlorn hope that the physician would forbid the banns, raking up all sorts of eccentricities to support their wish. He believed that in the future medical fitness would be inquired for before the celebration of a marriage.

Dr. H. B. DONKIN believed the time was not yet when anyone could say certain qualities were, and certain qualities were not, inherited, though gross bodily defect could be more definitely pronounced upon. Only in regard to the feeble-minded, in mental matters, could one be dogmatic.

Dr. C. A. MERCIER contended that the profession did not yet know sufficient to be able to say what qualities were hereditable and what were not. Certainly the time had not arrived when the legislature could be advised what would tend to the most successful marriages. Those who spoke of restriction of procreation did not realise that such restriction had always prevailed, even among savage races.

Miss DENDY spoke of the difficulty of getting reliable family histories in the case of the applicants for admission to her home. Much had been said about the danger of weak-minded girls being on the streets, but too little attention had been paid to the question of the same class of boys. In her institution the inmates were treated as children, and they were quite happy in their surroundings.

Dr. FLETCHER BEACH reminded the members that progress could only take place by increasing the fit and decreasing the unfit, and the latter should be permanently kept in institutions. He had long contended that cases of moral imbecility should be kept in institutions where they could be profitably employed and cease to be defects at large. Feeble-minded girls continually became mothers, and steps should be taken to prevent that. We were travelling towards a fall, and the only way to arrest that fall was for the State to interfere.

Mr. H. F. HAYES NEWINGTON agreed with Dr. Mercier that enough was not yet known by the medical profession on the

subject to give any legislative lead. Moreover, he did not think the Divorce Commission had the impression from alienists which the collective membership of the association would give. In such a matter humanity was subject to tremendous laws, far above human laws, and to interfere without adequate knowledge would be wrong.

Dr. JOHN CARSWELL said there was a mental defect which showed itself only in very limited degree in infancy and childhood. The child was equal to passing the ordinary examinations at school up to the third or fourth standard, but later could not adjust himself or herself to the simplest environment. Such people became aggressive, and not only asocial, but anti-social. There was a form of feeble-mindedness which became manifest after puberty, and was not to be confounded with dementia præcox. The remedies suggested in the present discussion did not appeal to him, and he endorsed the remarks made by Dr. Mercier. Nothing had been said as to the influence of alcohol in producing unfitness, and that was significant. Evidence was not clear enough to enable one to be dogmatic on the question of inheritance.

Mr. J. F. BRISCOE objected to the use of the term "divorce" when speaking of insanity or other disability as a cause of annulment of marriage. He suggested that a committee of the association should make a collective investigation of facts bearing upon the subject.

Dr. J. BEVERIDGE SPENCE expressed his agreement with the remarks of Dr. Mercier and Mr. Newington as to the insufficiency of the data available to enable the profession to give a guide on the matter. He thought a beginning should be made to isolate defective children to prevent them propagating their species.

Dr. M. EDEN PAUL said he thought it was the duty of the medical profession to use the influence it had in the direction of a sane extension of eugenic conceptions. It would not be right for physicians to fold their hands and say they had no knowledge. On the question of epilepsy and feeble-minded, knowledge was sufficiently definite to be most useful for the general good.

Dr. T. D. GREENLEES deprecated the assumption of ignorance on the part of the association on such an important matter, and reminded members that it was to the association the legislature would look if it wanted information to guide it. He thought the matter could be referred to a Parliamentary committee of the association for collective investigation.

The PRESIDENT agreed as to the paucity of real definite knowledge on the transmissibility of qualities, and declared that no really fundamental advance in biology had been made since the days of Darwin, if one excepted the branch of embryology. The time has not yet come for giving the definite pronouncement which Dr. Ewart desired.

Dr. EWART, in summarising the debate, restated his position.

THE UNITED SERVICES MEDICAL SOCIETY.

Malingering.—Guinea Worm.

A MEETING of this society was held on Nov. 9th, Colonel Sir DAVID BRUCE being in the chair.

Major C. E. POLLOCK R.A.M.C., read a paper on Malingering. After discussing the various motives for malingering—viz., to avoid an unpleasant duty or the consequences of misconduct, home-sickness, desire to get out of the service, and hope of obtaining compensation for supposed injuries—he went on to describe the more usual methods of "malingerers" in the British Service; of these feigned mental disease was the most important. It was a curious fact that as many as 80 per cent. of those invalided for insanity from India recovered on the voyage home. Major Pollock advocated the establishment of a central institution in India for the careful observation of cases of mental disability. It was important that men should not be allowed to evade their obligations by shamming madness, but at the same time it was very necessary to be extremely cautious about coming to the conclusion that a mental case was one of malingering; for if one discharged the man and he went and did something really foolish, such as discharging a rifle in a barrack-room, one was put in an awkward position, since it would be very difficult to decide whether the foolish act was that of a madman or only the supreme effort of a malingerer to obtain his end. The speaker then described various other forms of malingering—assumed fits, pretended defects of hearing, vision, speech, voluntary starvation, spurious pyrexia, hæmoptysis, &c.; he discussed the methods by which the various deceptions could be detected. Lastly, he dealt with the numerous methods of mutilation which were attempted in countries where conscription was in vogue by people who wished to evade their military service. The retired Russian *feldsher* is a past-master in the arts necessary to a "conscript's friend"; he included in his practice the production of artificial hernia, spurious tumours by the injection of paraffin, hammer-toe by fixing the toes in a plaster bandage for some months, and numerous other devices of that kind to deceive the examining medical officer, and to secure exemption from military duty.—Brigade-Surgeon J. F. BEATTIE said that when he was serving he saw no malingering; he believed that when malingering did occur to any extent it was evidence that the men were not being properly managed.—Surgeon-General W. L. GUBBINS endorsed Major Pollock's opinion that one should be specially careful in coming to the conclusion that a man was malingering; he cited instances in support of this. In the case of mental disease, it had to be remembered that soldiers were armed, and it was better to make a mistake and to allow a malingerer to pass than to have a tragedy. The proposal to establish one place for observation of mental cases in India was not practicable on account of the distances to travel; there should be four or five. He thought that at home all mental cases should be transferred to "D" block at Netley for observation.—Major W. S. HARRISON R.A.M.C., said that with regard to spurious palpitation, it was known that this had been produced by chewing cordite, which caused similar symptoms to those caused by the ingestion of nitrites. He referred to the case of a Royal Army Medical Corps recruit who came under his care complaining of pain in the loin radiating down into the testicle and who stated that his urine was bloody after the attack. When he was admitted there was no blood in the urine, but on the following day there was a copious deposit of what appeared to be pus. Microscopic examination, however, showed that the supposed pus consisted of starch granules, and it had evidently been simulated by the addition of dusting powder to the urine.

Major S. L. CUMMINS, R.A.M.C., read a paper on Guinea-worm, which parasite, he stated, had caused great loss of efficiency to garrisons of native troops serving in endemic areas, and pointed out that, if it were ever necessary for British troops to serve in tropical Africa, the conditions of water-supply in many places would make this disease a serious menace to health. The strategical importance of the disease, however, was diminished by the fact that it took nearly a year to develop, so that it could not complicate military operations lasting less than 12 months. Referring to the position of emergence of the female in the human host, the preference of the parasite for the lower extremity—the position most suitable for the discharge of the embryo into water—was shown by the tabulated results. In one series all the worms emerged in the lower extremity; in another and larger series this occurred in over 80 per cent. of the cases. The tendency to abscess-formation in cases where the embryos were set free in the tissues by rupture of the worm was mentioned. This danger was shown to be common in cases treated by injections of perchloride of mercury solution also, but was attributed in the latter case to stimulation of the fluid bringing about a discharge of embryos in the tissues, just as happens when fluid is applied to the projecting worm. The danger of these abscesses, when the worm was situated in the vicinity of joints, was illustrated by quoting a case where the knee-joint was infected in this manner, necessitating opening and drainage of the joint. Major Cummins expressed the opinion that, where the worm was in a safe situation, careful traction by winding on a quill or match was the most expeditious method of treatment, but advocated the slower and safer method by daily douching with cold water when the worm was in the vicinity of a joint. The prophylaxis, though simple in theory, and consisting in clarifying infected water before use on the one hand and protecting water from infection by cases on the other, was shown to be difficult in practice owing to the conditions prevailing in endemic areas. A hope was expressed that further study of the habits and history of the cyclops, on the lines initiated by Graham, might lead to a scientific prophylaxis aimed at getting rid of the intermediate host.—Lieutenant-Colonel Sir W. B. LEISHMAN, R.A.M.C., inquired

as to the habits of Egyptian soldiers in the matter of wading in water. He was very sceptical about the intelligence of filariæ leading them to go to parts where transmission to other hosts was facilitated. He asked if Major Cummins had had any experience of the treatment by injecting perchloride of mercury directly into the prolapsed uterine opening of the worm.—Major CUMMINS replied that at home in Egypt the men lived a great deal in the water, but in the Soudan they wore boots and were not so constantly in the water, but the Soudanese, who were the main source of infection, were constantly paddling in the water up to their knees.

EDINBURGH OBSTETRICAL SOCIETY.

Presidential Address.—Election of Officers.

A MEETING of this society was held on Nov. 9th, Dr. F. W. N. HAULTAIN, the President, being in the chair.

Dr. HAULTAIN, in his Presidential address, referred to the important part Edinburgh had played in the development of gynæcology, mentioning the names of Sir James Y. Simpson, Lister, Keith, and Tait. He traced the development of ovariotomy, which might be looked upon as the *doyen* of abdominal surgery. The pedicle was first secured extra-abdominally by clamps, then it was clamped, seared, and dropped into the abdominal cavity; later to this was added by Angus Macdonald the ligation of the vessels by silver wire and suture. The cautery was then discarded, and the pedicle secured by silk, catgut, or linen tied *en bloc* by a variety of knots, such as Staffordshire and Bantock, and then dropped into the peritoneal cavity. From this we had advanced to ligation in parts and careful inversion of the raw stump, with subsequent covering by peritoneum. The abdominal wound had been closed by pins, silver wire, silk and silkworm gut *en masse;* now the preponderance of opinion was more sentimental, and tended towards the use of catgut in layers, with a final subcutaneous continuous suture. The after-treatment had undergone much change; at first the patient was kept rigidly on her back, and for the first 48 hours not a drop of water was allowed to be swallowed, while the bowels were locked for eight days. Now free movement was permitted to the patients, fluids were given freely whenever they could be retained, and the bowels were freely moved on the second or third day. During the "eighties" and early "nineties" drainage by the abdomen or vagina was advised in even simple cases; now it was practically universally discarded. Following upon the pursuit of ovariotomy other conditions were recognised and treated by removal when required, diseases of the appendages, extra-uterine gestation, and uterine fibromyomata. Compared with the advances in gynæcology, midwifery had not shown the same degree of development. Since the late "seventies" the management of pregnancy, labour, and the puerperium had shown advancement. Antiseptics had made a great revolution in their methods; the addition of axis-traction rods to the forceps, the use of hot water in post-partum hæmorrhage, and the application of surgical procedure by abdominal and other methods were all important developments. One would naturally expect some reflection of these improvements in the Registrar-General's tables, but when these were consulted one was staggered at the figures. The mortality from puerperal causes in Scotland was as high as it was 50 years ago—viz., about 5 per 1000, or 1 in 200. Before 1878 the puerperal death-rate in Scotland was 4·8 per 1000, and 4·9 since 1878; while from puerperal fever it was 1·7 per 1000 before 1878, and 2·0 since. Those of Edinburgh were very similar, being from all causes 5·6 per 1000 before 1878, and 4·9 since; from puerperal fever 2·1 before 1878, and 1·9 since. It might be suggested that registration was now more strict, and the grouping of diseases more accurate. So far as puerperal fever was concerned, the death-rate in England and Wales was very similar—viz., in 1855 1·6 per 1000, in 1908 1·4, and it must be remembered that the great bulk of the cases were attended by midwives. The statistics from other countries showed a variable result, but in every instance cited there was a marked diminution, till in Sweden, Holland and Italy it was under 1 per 1000. Facts such as these seemed to prove that in the United Kingdom the fever death-rate in spite of antiseptics still remained the same. The effects of antiseptics had undoubtedly been proved to be of the greatest benefit in hospital treatment of maternity cases, but in private practice so far as statistics showed there was little evidence of their being of value. The results fell far below the legitimate expectations. There was no reasonable doubt that labours in general in the light of modern knowledge of infection were now more carefully and cleanly treated than formerly; here it was impossible that direct heterogeneous infection could be so common. Further, the cure of many infected cases by antiseptics must be accepted. In the face of this they could only account for the maintenance of the death-rate at the same percentage by an increase of germs in their surroundings, the result of centralisation in cities and overcrowding. This was only in keeping with the marked increase of appendicitis, septic pneumonias, and similar affections. By antiseptics it seemed they had been able to keep the death-rate where it was; without them the results would have been worse. This was aptly illustrated by the statistics from puerperal septicæmia in England and Wales. Till 1900 there was an increasing death-rate from sepsis; since then it had decidedly dropped; this might fairly be attributed to the adoption of the Midwives Act. In 1902 the deaths from puerperal sepsis were 118 per million women; in 1907 they fell to 81. This meant the saving of hundreds of maternal lives. The President then referred to the enormous increase of deaths from eclampsia in Scotland. In the years 1906 to 1909 the incidence of cases and mortality were much the same in the Rotunda and Queen Charlotte's Hospitals—viz., 0·5 per cent. of eclamptic cases, of which 14 per cent. were fatal. In St. Mary's Hospital, Manchester, 0·24 per cent. were eclampsia cases and the mortality of these was 63·6 per cent., while in Edinburgh there were 3 per cent., or six times greater than in Dublin or London, and the death-rate in these cases was 35 per cent., or two and a half times more fatal. The methods of treatment were similar to those of other institutions. It was feasible that the marked increase in Scotland was due to the great difference in the diet of the populace, who a generation ago subsisted more on a cereal diet instead of the highly nitrogenous diet they now adopted, and the colder climate had apparently some effect on the development of eclampsia. The President looked into the future and expected the development of a new specialty as represented by the "abdominal surgeon." It was, on the one hand, essential that the gynæcologist must be a thoroughly trained surgeon, while on the other the surgeon must be a thoroughly trained obstetrician to deal with the diagnosis and development of conditions of pelvic origin. The expert gynæcologist must be an expert obstetrician. In conclusion, he referred to the practical obstetrical training of students.

The following office-bearers were elected for the ensuing session:—President: Dr. F. W. N. Haultain. Vice-Presidents: Dr. J. Lamond Lackie and Dr. N. T. Brewis. Treasurer: Dr. G. F. Barbour Simpson. Secretaries: Dr. Angus Macdonald and Dr. B. P. Watson. Librarian: Dr. Lamond Lackie. Editor of Transactions: Dr. H. Oliphant Nicholson. Members of Council: Professor W. Stephenson (Aberdeen), Dr. Frederick Porter, Dr. F. D. Simpson, Dr. J. Haig Ferguson, Dr. W. Craig, Dr. E. H. Lawrence Oliphant (Glasgow), Professor J. A. C. Kynoch (Dundee), and Dr. Kenmure D. Melville.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 16th, Mr. W. Morley Willis, the President, being in the chair.—Dr. P. Boobbyer, medical officer of health of Nottingham, opened a discussion on Infantile Diarrhœa, and said that not only was epidemic diarrhœa very largely the cause of the high infant mortality, but an excess of epidemic diarrhœa was followed by an excess of the infant mortality rate. It was a disease chiefly of the urban districts, and was greatly exaggerated by overcrowding, lack of ventilation and sunlight, defective scavenging, and a high temperature accompanied by drought. In prophylactic treatment the conditions existing in rural districts should be followed in cottage homes. The figures of Leicester were most encouraging. In 1873 the diarrhœa infant mortality rate was 223 per 100,000. At that time the local conditions and scavenging were similar to those of Nottingham. Leicester had, however, now converted its system of dry scavenging to the water system with the result that the death-rate from epidemic diarrhœa had fallen to

31 per 100,000; that of Nottingham, where the tub system still existed, varied from 69 to 97 per 100,000.—Dr. W. Tibbles, while agreeing as to the infective nature of diarrhœa, laid great stress upon the part played by improper feeding in its causation. Breast-fed children seldom suffered from diarrhœa; it occurred chiefly in bottle-fed children or those recently weaned. He classified the causes as (*a*) *autogenetic*—gastro-enteric catarrh, intestinal fermentation, toxæmia; and (*b*) *heterogenetic*—improper feeding, mechanical irritation, nervous influences, bacteria. Excess of casein caused diarrhœa by mechanical irritation or putrefactive decomposition; excess of carbohydrates by the nature of the sugar—e.g., maltose or malted foods; or by mechanical irritation—e.g., bread, cereal foods, fruit, vegetables. Excess of fat, especially from cow's milk or centrifugal cream, might cause diarrhœa. Fat was exceedingly important, but many infants were unable to digest food containing more than 1 per cent. fat from cow's milk or cream. Summer diarrhœa was not due to heat alone but to bacteria. In the autogenetic form the normal bacteria of the intestines became pathogenic and caused a severe gastro-enteric catarrh with toxæmia. The heterogenetic form was due to bacteria, usually introduced with the food, the toxins of which profoundly affected the heart and nerve centres. There were several clinical types which, however, depended less on the kind of bacteria than other conditions. In the treatment vomiting was to be allayed by lime-water, milk of magnesia, washing out the stomach, and rest from food. Astringents were of little value in the acute phase; the bacteria should be eliminated by purgatives, colon lavage, antiseptic drugs, and abstinence from ordinary foods. After the cessation of vomiting, moderation of purging, and reduction of temperature, bismuth, aromatic powder of chalk, or tannigen might be of service. The depression must be fought by stimulants; if they were vomited, strychnine and ether or normal saline solution should be injected subcutaneously. Dietetic treatment was prophylactic and remedial. Breast-feeding should be encouraged; weaning of children during the summer months should be avoided. Bottle-fed children must have pure milk made into mixtures of proper composition and suited to their age. Improper foods, especially excess of casein and malted foods, must be avoided. During the diarrhœa children should be kept from the breast until the cessation of vomiting, when they might be allowed to suck for two or three minutes at a time and be fed every two hours with albumin-water or whey. Bottle-fed children should only be given water or barley-water until vomiting ceased; when this was retained they should be cautiously fed with egg albumin and water, whey, white wine whey, buttermilk, chicken or veal broth, one drachm every 15 minutes, or a meat juice. As the acute stage passed off dextrinised foods might be given with barley-water or whey. Egg mixtures were now valuable; those foods in which milk casein had been modified, such as whey, whey and cream, buttermilk, peptonised milk, and koumiss, were applicable until convalescence was established; the return to normal food must be as gradual as the return to health.—Dr. C. H. Cattle said that summer diarrhœa was a zymotic infective disease, but was not actually due to a single specific bacillus. The treatment might be summed up in elimination of the toxins—e.g., washing out of the stomach, lavage of the bowel, and purgatives. It was important to eliminate the milk from the diet, because the curd of the milk was irritating to the bowel. He recommended water in large amount and saline injections subcutaneously.—Dr. A. C. Reid discussed the serum treatment of the disease and said that Morgan had isolated a definite bacillus called "Morgan's bacillus"; and from injection of this into horses he had obtained an antitoxic serum. Dr. Reid had employed the serum in 13 severe cases. He injected 9 to 10 c.c. of the serum into the scapular region and had eight recoveries. In the five fatal cases there was definite improvement at first in three, the diarrhœa diminishing to a very large extent, but after three to five days these three cases suddenly collapsed. The two remaining fatal cases showed no reaction whatever. All these 13 cases were of a very severe type. The results of the treatment were encouraging, and he would certainly extend his trial of the method.—Mr. A. Fulton, after deploring the unsuitability of the name of epidemic diarrhœa, said that hand-feeding was a constant factor in its causation. For that reason he discouraged weaning at the beginning of the summer months, especially as the disease was almost always confined to children under 12 months of age.—Mr. R. M. Rendall said that the collapse should be treated by a hot mustard bath with strychnine and brandy. He gave tepid water *ad lib.* by the mouth and ordered castor oil with small doses of opium.—Dr. J. A. Waring thought the commonest cause was a chemical toxin produced in the stomach and that this stimulated a vomiting centre in the brain. He regarded flies as carriers in this disease and had noticed that epidemics coincided with huge swarms of flies.—Dr. F. H. Jacob laid great stress on giving large quantities of water per rectum.—Dr. W. T. Rowe noticed that children under three months were not so susceptible to the disease; this was due to the fact that they were almost all breast-fed up to that time. He regarded breast-feeding as a better prophylactic treatment even then improved scavenging. He thought it a mistake to try to stop the diarrhœa too soon as that prevented the elimination of the toxins. He recommended 1-50th grain of morphia subcutaneously.—Dr. J. Mackenzie (East Kirkby) gave figures of three neighbouring villages showing the effect of the subsoil on the disease.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at Sheffield on Nov. 18th, Dr. W. K. Walls (Manchester), the President, being in the chair.—Mr. R. Favell (Sheffield) reported a case of Hysterectomy for Complete Rupture of the Uterus. The patient was a secundipara aged 24 years. The first labour was a natural one. On the present occasion, after being in labour 16 hours, her medical attendant applied forceps, when the os was nearly fully dilated, and with considerable difficulty extracted a living child. As the placenta could not be expressed he introduced his hand and found the placenta amongst the intestines. There was no marked shock nor hæmorrhage at the time. On admission to hospital an hour and a half later she was very collapsed and pale, the pulse being 140 and the temperature 98° F. She did not complain of any pain. The abdomen was somewhat distended but not tender. The fundus uteri was in the middle line. There was only slight vaginal bleeding. Vaginal examination, under anæsthesia, revealed an extensive rent in the posterior wall of the supravaginal cervix. Through this several large blood clots were removed from the pouch of Douglas. The abdomen was at once opened. There was a large quantity of free blood in the cavity. The rupture was seen to involve the posterior two-thirds of the supravaginal cervix. The main vessels were clamped and the broad ligaments and utero-vesical fold of peritoneum divided. The uterus was removed by cutting through the remaining third of the supravaginal cervix. The clamps were replaced by ligatures and the peritoneal flaps completely sutured. The patient made a good recovery.—Dr. J. B. Hellier (Leeds) reported a case in which a Hair-pin embedded in the Uterine Wall was revealed by skiagraphy. The patient stated that she had sat down on a chair into the seat of which a child had fixed a hair-pin with the sharp points upwards. She found that the hair-pin had passed into the vagina and that it held her fast so that she could not rise until she had broken part of it off. A little bleeding followed but no pain. Digital examination failed to find the pin. A skiagram showed one limb of it, lying above the pubes in a more or less vertical direction. The lowest point of the shadow was ¾ inch and the highest 2 inches above the pubes. The patient, who was very thin, was then thoroughly examined under anæsthesia. The uterus was found to be retroverted. Recto-abdominal and vagino-abdominal bimanual examination, passing the uterine sound, and examining the bladder by sound and cystoscope failed to discover the pin. Finally, the anterior fornix was opened and the bladder separated from the cervix. The end of the wire was then found, projecting from the anterior wall of the uterus just above the anterior lip of the cervix. To draw it out required considerable force, in order to straighten out the bend. It must have been entirely embedded in the uterine wall. It was found to measure 2·4 inches. To demonstrate the result of skiagraphing the pelvis with a body of known dimensions in a known position, a second skiagram was made with the patient lying horizontally upon her back as before, after a piece of stout silver wire (3·18 inches in length), with a ring at one end, had been inserted into the

retroverted uterus. The ring lay just outside the os externum. The skiagram showed a shadow ½ inch longer than the wire. The ring lay behind the middle of the symphysis and the wire reached to a point 2·5 inches above the pubes. It must be remembered that the sacral promontory lies 3·75 inches above the pubes, and that in proportion as a foreign body approaches that it will cast a shadow higher than the pubes. A third skiagram was made after introducing into the same patient a Hodge's pessary, made of block tin and measuring 3¼ by 2⅛ inches. The shadow of the upper bar of the Hodge was 1½ inches above the pubes.—Dr. A. W. W. Lea (Manchester) read a paper on the Transverse Supra-symphysary Incision as a method of abdominal section. After relating the history and describing the technique of the method, he pointed out the following advantages which are claimed for it: (1) almost invisible scar; (2 absence of cicatricial contraction or keloid and only a slight tendency to stretching of the cicatrix; (3) hernia practically impossible; (4) the intestines are hardly seen and may be undisturbed during the operation. During the past two and a half years he had used the incision in 65 instances, restricted to cases of relatively small tumours, to inflammatory conditions of the appendages, to operations for ventrofixation of the uterus, and resection of the ovaries and tubes, combined or not with removal of the vermiform appendix. Only one case ended fatally, and that could in no way be attributed to the mode of incision. In all except two the wound healed by primary union. In the two secondary infection occurred along the suture tracks. It speedily resolved. Many of the cases had been seen at varying intervals since. The scar was usually marked only by a thin white line. No case of hernia had occurred nor had any tenderness of the scar been complained of. The following conclusions were presented: 1. The incision may be adopted with advantage in all cases of operation for displacement of the uterus, for inflammatory diseases of the appendages, in the absence of evidence of suppuration, for the smaller ovarian tumours and myomata, for conservative procedures on the appendages, and for tubal gestation. 2. If the patient is placed in the elevated pelvic position excellent access is afforded to the pelvic organs with little disturbance of the intestines. 3. The operation is not suitable if drainage by the abdomen is likely to be needed, but as vaginal drainage is usually employed this is not a valid objection to the operation. Dr. Lea had had no experience of the incision in cases of cancer of the uterus or in large tumours. There was no doubt, however, that by a wide incision sufficient space might be afforded for the necessary operations to be carried out in a satisfactory manner, and experience had conclusively shown that a wide division of the fascia was not attended by any danger of necrosis.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 11th, Dr. A. Christy Wilson, the President, being in the chair.—Dr. J. Stewart read a paper on Some Recent Cases of Cerebral Surgery in which he had operated. In one case there was dislocation of the parietal bone with fracture of the anterior fossa at the base of the skull. The symptoms closely simulated a quite different surgical lesion of the brain. Trephining was performed, with reduction of the dislocation, and recovery ensued. In another case of slight and obscure injury to the brain late hemiplegia supervened. Decompressing trephining was done, with recovery. A third case was that of chronic abscess of the temporo-sphenoidal lobe, symptoms of which suggested tumour. In a fourth case there was an hour-glass subdural and temporo-sphenoidal abscess.—Dr. T. Churton showed a Brain with Hæmorrhage into the Pons and Fourth Ventricle. A man, aged 46 years, became suddenly comatose on Nov. 5th. On admission to hospital half an hour later (5 P.M.) he was convulsed. At 7.30 P.M. he was breathing in short gasps at irregular intervals; the face was dusky; the pulse was full, regular, 80; and the temperature was only 96·5° F. There was no plantar reflex; patellar reflexes were very brisk and extensive, R > L; pupils not contracted; no light-reflex. The eyes were parallel or very slightly divergent. Diagnosis: hæmorrhage into the fourth ventricle. Death occurrred at 10 P.M.; there was no rise of temperature. A diffused bilateral hæmorrhage, apparently originating on the right side, infiltrated the pons. Through a rent in the floor of the fourth ventricle blood had escaped into its cavity. The hæmorrhage did not extend into the substance of the crura. Each lateral ventricle contained one or two ounces of clear fluid.—Dr. C. Oldfield showed the following specimens: 1. Tuberculous Pyosalpinx (one-sided) found attached to the omentum in umbilical hernia. The patient, who was lactating, had regular and profuse menstruation since her confinement nine months previously; the uterus was bulky (4½ inches), but not otherwise abnormal. 2. Hæmatosalpinx (one-sided), due to strangulation of uterine and ovarian vessels from peculiar method of enlargement of hydrosalpinx. The cause of the tubal disease was probably the appendix, which was diseased and attached to the sealed fimbriated extremity of the tube. 3. Stone from the vesical portion of the ureter, of the size of a filbert, which was removed transvesically by vaginal cystotomy.—Dr. E. F. Trevelyan showed a girl, aged 3 years, with Partial Paralysis of the Right Shoulder Muscles, including the serratus magnus, of some four months' duration. A similar paralysis, but not so marked, had recently developed on the other side. Between the onsets of the paralysis in the two arms a slight but definite prominence had been noticed in the lower cervical and upper dorsal regions of the spine.—Mr. H. Collinson exhibited a specimen of Acute Intussusception of the ileo-ileo-colic variety. A child, aged 2 years, was admitted into hospital with a history of obstruction for three days. The intussusception was irreducible and was resected, Paul's tubes being fixed into the ileum and ascending colon. Eight days later the openings were closed and a lateral anastomosis was performed between the ileum and the transverse colon. The child recovered.—Dr. A. G. Barrs showed a case of Cerebral Tumour in which a decompressing operation had been done.—Mr. H. Littlewood exhibited an Appendix with Multiple Diverticula.——Dr. A. L. Whitehead showed two cases of Interstitial Keratitis. The first case was that of a male, aged 15 years, with bilateral interstitial opacity of both corneæ, without iritis, of two months' duration. For six weeks the knee-joints had been swollen without causing pain or interfering with locomotion. No other evidence of congenital syphilis was present. The second case was that of a female, aged 10 years, with right interstitial opacity of the cornea, without iritis, of three weeks' duration. On examination both knee-joints were found to contain fluid. The duration of this was uncertain, since it had caused no discomfort and was unknown to the patient. With the exception of a slight scar at one angle of the mouth there was no other sign of congenital syphilis.—Dr. G. W. Watson showed a specimen of Acute Pulmonary Tuberculosis arising from ulceration of a tuberculous bronchial gland into the bronchus.—Cases and specimens were also exhibited by Mr. J. F. Dobson, Dr. T. Wardrop Griffith, Dr. J. B. Hellier, Dr. R. A. Veale, and Mr. Michael A. Teale.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY.—A meeting of this society was held at the Great Northern Central Hospital on Nov. 10th, Dr. T. J. Horder, the President, being in the chair.—Dr. Alexander Morison showed a case of Lymphatic Leukæmia in a woman, associated with rheumatoid arthritis. The axillary and inguinal glands on both sides were much enlarged, and a blood count showed a great preponderance of white cells, of which about 94 per cent. were lymphocytes. There was no enlargement of either liver or spleen, and there was no albumin in the urine. The interesting feature of the case was the association of leukæmia with a rheumatoid enlargement of the joints, a combination which Dr. Morison had not before seen.—Dr. C. M. Hinds Howell suggested the use of naphthalene tetrachloride, under which drug he had seen a case of the sort recover.—Mr. G. B. Mower White thought the glands were possibly tuberculous, and advocated the removal of some of them for the purpose of investigation.—The President considered that this was not necessary. The condition of the blood was sufficient evidence of the nature of the case. He had used naphthalene tetrachloride both in this disease and in pernicious anæmia with success. In the latter condition it was particularly valuable in doses of 5, 10, or 15 grains thrice daily.—Mr. Mower White showed two cases of Fracture of both Patellæ occurring at intervals of 10 and 13 years respectively. On all four occasions he had himself wired the patellæ, and in both cases the first operation, as shown by X rays, had been followed by bony union. This, he considered, was unusual, the wire alone generally holding the fragments together.—Dr. Hinds Howell showed a woman, aged 32 years, who for two weeks had complained of pain in the

neck and down the right arm, and increasing weakness in the arm. There was slight paresis, most marked in the extensors of the fingers. There was tactile anæsthesia in the root areas of the third cervical to the fourth dorsal, and analgesia in those of the seventh cervical to the fourth dorsal roots. In the joints up to the shoulder there was loss of sense of position. The deep reflexes were brisk. The left plantar reflex was normal, the right doubtful. The pupils were equal and reacted well. There was no definite history of syphilis, but there had been three miscarriages. There had been no injury. The case was probably one of root neuritis, possibly of specific origin, or due to the pressure of a diffuse growth involving the posterior roots. The definite distribution of the areas of sensory disturbance precluded the idea of hysteria.—The President showed a man, aged 48 years, who gave a history of repeated attacks of Hæmatemesis and Melæna extending over eight years, the last attack having occurred at the end of October. On admission the temperature was increased, but had since fallen to normal. There had been no pain or vomiting since admission, though there had been some slight melæna. There were no signs whatever in the abdomen and neither liver nor spleen was enlarged. The patient was extremely pale, the blood examination showing the presence of a profound secondary anæmia. The absence of pain and physical signs and the long history seemed to point to the presence of a chronic gastric ulcer in the lesser curvature, and this, though not malignant at first, was now probably becoming so.—Mr. Mower White advised exploration, and thought that the ulcer was in the region of the pylorus.—Dr. Morison was of the same opinion, and the President, in replying, said that he would advise operation, though gastro-enterostomy was not always a cure in these cases.—Mr. H. E. Whitehead showed a case of Bilharziasis in which ova had been found in the urine after two years' hæmaturia. Two ova were exhibited by Mr. E. H. Shaw under the microscope.

CLINICAL SOCIETY OF MANCHESTER.—This society held its monthly meeting on Nov. 15th, Mr. J. Howson Ray, the President, being in the chair.—A discussion on Bronchitis was opened by Dr. P. R. Cooper, dealing with adults, and Dr. C. Christopher Heywood, dealing with children.—Dr. Cooper, in introducing the discussion, remarked that probably in nearly every instance bronchitis was caused by micro-organisms. A large number of these had been described, having been obtained from the secretions during life or from the bronchi shortly after death. Impure over-heated air, fogs, and noxious fumes probably acted by lowering the local and general resistance and favouring the growth of these organisms. In chronic bronchitis, especially when accompanied by bronchiectasis, the chest was a breeding ground of micro-organisms, and on the slightest provocation infections occurred, producing attacks of acute bronchitis and peribronchitis, &c. In diagnosis the causal organism must be determined, as well as the fact of its location in the bronchi, and here the services of a skilled bacteriologist were necessary. In treatment in the future it was probable that vaccine therapy might prove of great assistance, especially in the more chronic cases. The experiences of Dr. A. Latham and Dr. H. A. Des Vœux as recounted in the discussion on vaccine-therapy at the Royal Society of Medicine were quoted in support of this view. The more orthodox methods of treating bronchitis, especially in the acute stage, were briefly referred to.—Dr. Heywood briefly described the anatomical peculiarities of the chest of young children. In considering the predisposing causes of bronchitis he laid especial stress on the want of fresh air and sudden changes of temperature—e.g., from a stuffy nursery to a cold bedroom. He also urged that there should be no delay in removing adenoids if present, even during the bronchitic attack if necessary, and stated that he had seen striking relief afforded by this procedure. He then discussed the treatment by drugs, and urged the avoidance as far as possible of the usual expectorant mixtures and the substitution of emul. ol. ricini or emul. ol. morrhuæ, according to age and circumstances.—The following took part in the discussion: Dr. J. Price Williams, Dr. A. T. Wilkinson, Dr. W. A. Helm, Dr. A. A. Mumford, Mr. A. H. Norris, Dr. J. Rust, and Mr. Arnold Gregory.—The President referred to a case of Dr. Heywood in which he had removed adenoids during the bronchitic attack with most excellent results.

BATH CLINICAL SOCIETY.—A meeting of this society was held on Nov. 4th, Mr. F. Lace, the President, being in the chair.—Cases and specimens were shown by Mr. Forbes Fraser, Dr. Norman W. Steinberg, Dr. A. J. Bruce Leckie, and Dr. Rupert Waterhouse, the latter of whom showed the two adrenals, into which hæmorrhage had occurred, of a well-nourished unvaccinated child, aged 8 months, who died after an illness of about 12 hours, characterised by drowsiness, vomiting, râles in the chest, and a blotchy hæmorrhagic eruption on the trunk, arms, and thighs.—Dr. G. E. Bowker read a paper on the Roentgen Rays in Relation to Diagnosis, dwelling more particularly upon their use in the early recognition of pulmonary tuberculosis and in the detection by their aid of renal calculi, at the same time showing an interesting group of skiagrams which he had taken illustrative of the subject matter.—Dr. Waterhouse read a paper, under the title "Anterior Crural Neuritis," on five cases in which symptoms occurred in the area of distribution of the lumbar plexus with an absence of evidence of pressure thereon. All the patients were men between the ages of 52 and 76 years. Etiological factors appeared to be gout, glycosuria, and exposure to cold and wet. Pain, the only sensory symptom, subjective or objective, was chiefly felt over the dorsum ilii, the front of the thigh, at a point a little above the middle of the shin, and on the inner side of the dorsum of the foot. There was weakness of the muscles which flex and adduct the hip and extend the knee, with resulting difficulty in mounting stairs, in rising from the sitting position, and in crossing one leg over the other, together with on walking a sense of insecurity about the knee-joint which was apt to unexpectedly flex. The objective symptoms consisted of coldness of the surface of the affected thigh, wasting of the muscles of the front and inner side, loss of the knee-jerk, and, in some instances, of the cremasteric reflex on the affected side. In two patients, who continued to walk about, symptoms referable to the knee-joint arose which were explained as the result of internal traumatism in consequence of the weakened quadriceps failing to keep the capsule of the joint taut during movement, so that the synovial membrane was apt to be pinched between the femur and tibia. The outlook in this form of neuritis, even in diabetic cases, was good.

Reviews and Notices of Books.

The Prevention of Malaria. By RONALD ROSS, C.B., LL.D. Aberd., F.R.S., F.R.C.S. Eng., D.Sc. Dub. and Leeds, D.P.H., Major, I.M.S. (retired), Nobel Laureate. With Contributions by Various Authorities. London: John Murray. 1910. Pp. 669. Price 21*s.* net.

THE student of malaria in all aspects will find in this work the most complete exposition of the subject in medical literature. Major Ronald Ross has written an admirable summary of the whole matter up to date, telling of the discovery of the parasite of malaria, summarising the facts regarding it and its mode of infection, and repeating the fundamental observations and experiments showing the part played by the parasite, the parasitic invasion in man. Finally, he gives a *résumé* of the possible preventive measures, and has called to his aid experts in the matter from divers regions of the world.

Major Ross first deals with the history of malaria. We here find the discoveries of A. Laveran, C. Gerhardt, and C. Golgi detailed. Then he proceeds to an account of the researches regarding the mode of infection, in which he has played so notable a part. In 1894 Sir Patrick Manson informed him of his new mosquito hypothesis whilst on leave in England, and on return to duty Ross at once determined to work out the whole subject thoroughly. Only those who have laboured at scientific work in India can form any just idea of the magnitude of the task. For a long time Ross worked with the wrong kind of mosquito and had many other fundamental troubles, but at length he

discovered the really culpable anopheline, and once for all determined the truth of the hypothesis.

A valuable summary of facts regarding malaria is presented to us, including facts about mosquitoes, personal prevention and public prevention, after which the evidence that the parasites are really the cause of the disease is given. This consists in such facts as the following: The parasites are not found in those who have not suffered from malarial disease; they can always be found in a large proportion of malaria cases; the patient's fever begins at the moment when the spores of the parasites are liberated—an important fact discovered by Golgi; the different types of malarial fever are caused by different species of parasites; both parasites and fever may be reproduced in healthy persons by the inoculation of infected blood; both may be reproduced in healthy persons by the bite of an infected mosquito; the severity of the illness depends roughly on the number of parasites present; certain secondary symptoms are caused by the accumulation of the parasites in certain organs; whilst, finally, quinine reduces both the parasites and the fever, and both tend to disappear in a locality if the carrying anophelines are greatly reduced in number. Major Ross then relates the result of experimental blood inoculation, and gives numerous illustrations showing the onset of malarial fever in human subjects after inoculation with the blood of patients suffering from the disease, whilst the proof of the theory is clinched by the illustrations given to show the result of experimental mosquito inoculation. One of the most striking illustrations of this occurred at the Tropical School in London, in which the late Dr. P. Thorburn Manson was bitten by a mosquito fed on a case of double benign tertian in Rome, which after biting Dr. Manson gave him fever with benign tertian parasites in his blood. He had previously not been out of England.

The author next considers the parasitic invasion of man, and calculates that to produce the first illness there must be at least 1 parasite to 100,000 hæmatids, or 50 in each 1 c.mm. of blood. With respect to the period of incubation, in the case of P. vivax, it is probable that the illness would begin on the twelfth day after inoculation. Many other points are considered in this relation, such as those concerning the further progress of the invasion after the commencement of the fever, the decline of the invasion, the appearance of sexual forms, and the facts concerning rallies and relapses. The consideration of the average duration of untreated cases and the effects of quinine make valuable reading here.

A very important section of the subject is that treating of the mortality and cost of malaria. That this is of great importance is at once evident if we take the experience of Mauritius for an example. Here there are about 39,000 adult male coolies on the sugar estates, of whom 15 per cent. are incapacitated by malaria for three months in the year—that is to say, more than 500,000 days' work are lost annually. The day's work is worth 1/4 rupee to the coolies and 5/4 to the planters; thus the coolies lose about 125,000 rupees and the planters about 625,000 rupees per annum, or 750,000 rupees together. There are besides the losses of the female coolies working on the estates and those of the Indian coolies outside the estates. With hospital and other expenditure Dr. Bolton, the medical officer of the immigration department of Mauritius, estimates that malaria costs Mauritius, with its population of 383,000, about 1,000,000 rupees a year. Using similar arguments L. O. Howard estimates that malaria costs the United States Government $100,000,000 a year.

The last chapter, contributed by Major Ross, is on prevention. In this he considers the list of possible preventive measures. In the protection against the bites of mosquitoes the necessary points to be observed as regards mosquito nets are minutely given; portable mosquito-proof rooms, fixed mosquito-proof rooms, mosquito-proofing of windows and doors and verandahs, protection for the hands and feet, medicinal protectives of the skin, and other remedies are commented on. The inquirer is also told how to effect mosquito reduction by the hand net, by fumigation, by the introduction of the natural enemies to the mosquito, and by the destruction of larvæ. Next are detailed the methods for rendering localities or houses less suitable for mosquitoes or their breeding. Succeeding these measures comes that of prevention by treatment; with respect to that by quinine Major Ross teaches that daily dosage is better than intermittent dosage. This chapter concludes with the complex subject of public malaria protection, and the medical reader is advised to make himself familiar with a difficult and contentious subject.

The special contributions of the various colleagues whom Major Ross has summoned to his aid now follow. The articles are written by experts, such as Professor L. O. Howard for the United States, Colonel W. C. Gorgas for Panama, Sir R. Boyce for the West Indies, Professor A. Celli for Italy, Mr. H. C. Ross for Egypt, Professor T. Takaki for Formosa, Colonel C. H. Melville, R.A.M.C., and Major C. E. P. Fowler, R.A.M.C., for the troops in war and peace. We make no futile attempt to note even the more important points brought out in their excellent and lucid expositions. The work concludes with certain addenda, such as a suggested terminology for the phenomena of cytogenesis, notes on the malaria-bearing anophelines, and on certain microscopic techniques. A comprehensive list of works connected with the subject completes the volume.

This is a thoroughly sound and comprehensive treatise; Major Ross and his colleagues have turned out work worthy of their high reputations.

Die Direkte Laryngoskopie, Bronchoskopie, und Oesophagoskopie. Ein Handbuch für die Technik der Direkten Okulären Methoden. (*Direct Laryngoscopy, Bronchoscopy, and Œsophagoscopy. A Handbook of the Technique of Direct Ocular Methods.*) Von Dr. med. et phil. W. BRÜNINGS, Privatdozent an der Universität Freiburg i. Br. With 37 illustrations in the text and 35 figures on 19 plates. Wiesbaden: J. F. Bergmann. 1910. Pp. 405. Price M.14 (or 14*s.*).

A LARGE circulation may be confidently anticipated for this work, seeing that it embodies the most recent developments in the technique and armamentarium of the new endoscopy of the air-passages and gullet. The product of the pen of Dr. Brünings, one of Professor Killian's most distinguished disciples, its teaching will be accepted as authoritative to an unusual degree, based, as it is, upon experience second to none in the world.

The book is divided into two main sections, the first of which, highly technical in character—perhaps too highly technical—deals with the optics and mechanics of the instruments, while the second section contains a description of the various methods of investigation and of the discoveries, anatomical and physiological, which have accrued. Although the evolution of bronchoscopic method occupies so recent a period that to write its history seems for the moment superfluous, we nevertheless welcome Dr. Brünings's account chiefly because it is through his own and Professor Killian's inventive powers that the method has come so near to perfection in so short a time. Indeed, to single out any particular stage in the progress of events for remark as showing the influence of the Freiburg workers would be impossible, for the imprint of their hand is everywhere.

Coming to the second and larger part of the book we would refer with satisfaction to the useful summing-up of the best methods of producing anæsthesia, the importance of which

with regard to successful endoscopy it is impossible to overestimate. In this connexion the reader will be interested to note the high value Dr. Brünings places upon the hypodermic injection of adrenalin in cocaine poisoning (pp. 154 and 173). Having disposed of these introductory matters the author proceeds to deal systematically with direct laryngoscopy, upper and lower bronchoscopy, and œsophagoscopy, in the course of which he finds room for a valuable chapter upon the special difficulties which arise in examining children. To the most delicate of all these endoscopic manœuvres, that of bronchoscopy, many pages are dedicated, and if at the end we have not read ourselves into perfection the fault does not lie with the author, whose directions for overcoming incidental as well as inevitable difficulties are minute and careful in the extreme. A chapter on œsophagoscopy completes a volume which for tastefulness of appearance no less than for method and thoroughness reflects the greatest credit upon the author and publisher alike.

We hope that a translation will soon be forthcoming, as the book is one of immediate interest to all medical men, and in spite of the practical character of the subject English readers will find its study in the original by no means a light and easy task.

Œdema: A Study of the Physiology and the Pathology of Water Absorption by the Living Organism. (The 1909 Nathan Lewis Hatfield Prize Essay of the College of Physicians of Philadelphia.) By MARTIN H. FISCHER, Professor of Pathology in the Oakland School of Medicine, California. Republished from the Transactions of the College. With 51 figures, including full-page plates. London: Chapman and Hall, Limited. New York: John Wiley and Sons. 1910. Pp. 209. Price 8*s.* 6*d.*

THE problem of œdema—the problem of the presence of abnormally large amount of water in tissues and tissue spaces—is part of the greater problem why protoplasm holds any water at all and why its amount is so nearly constant in normal circumstances. The author's fundamental proposition is that the cause of œdema resides in the tissues—a proposition he holds to be proved by his experiments on the absorption of water by the legs of frogs in the absence or suppression of the circulation, so that "all conceptions of œdema which regard the pressure, *per se*, of circulating fluid, as one of the causes, or the chief cause, in the development of this condition, are robbed of their most fundamental support." The author then proceeds to observations on colloid with records of experiments of the swelling of fibrin and gelatin—emulsion colloids—in various solutions somewhat on the lines of Ostwald's scheme. To show the analogy between the swelling of certain colloids—e.g., fibrin—and the swelling of protoplasm the author cites a number of similar experiments on muscle, and he comes to the conclusion that his experiments justify the view that the absorption of water by muscle is determined in the main by the state of the colloids contained in the muscle itself. Similar experiments made on the excised eyes of sheep and oxen—the latter he calls "a beef eye"—lead him to the same conclusion.

He then proceeds to discuss the biological significance of his results, and at once dismisses all vitalistic theories as to the absorption of water, and, of course, in the light of his earlier cited experiments, discards the pressure theory. To the plant physiologists he ascribes the honour of giving the earliest and best contribution towards a physico-chemical analysis of the forces active in the absorption and secretion of water by living tissues.

The author next gives a full account of cell membranes—permeable, semi-permeable, and lipoid. He seems to find little reason for accepting the osmotic theory as of paramount or even great importance in the explanation of the ways and means by which tissues absorb or secrete water. After pointing out the importance of acids and alkalies in this connexion, he comes to his main contention that every condition that makes for a state of lack of oxygen in the œdematous parts, be this through disturbances in the affected parts themselves, or in some distant organ, as the heart, makes for an increase in the severity of the œdema. He then proceeds to explain on this supposition the œdema of glaucoma, adding a statement as to the relief in this disease obtained by the subconjunctival injection of sodium citrate. Œdemas of the kidney, liver, and lungs are next dealt with. There is an interesting chapter on turgor, plasmolysis, hæmolysis, and allied phenomena, and one on the secretion of urine.

The essay altogether abounds in ingenious suggestions and we commend it to the clinicians and pathologists, but above all to the experimental physiologists and pathologists. There are several illustrations of œdematous frogs, and many curves in the text, but there is no index.

The Fats. By J. B. LEATHES, M.A., M.B. Oxon., F.R.C.S. Eng., Professor of Pathological Chemistry in the University of Toronto. (Monographs on Bio-chemistry.) London: Longmans, Green, and Co. 1910. Pp. 138. Price 4*s.* net.

THE latest of the excellent series of Monographs on Biochemistry is that on "Fats," which will prove useful alike to the chemist and physiologist. The fats form a group by themselves which does not overlap that of the carbohydrates or of the proteins, and can hardly be said to be of less physiological importance than either of these. The author deals first on the usual lines with fatty acids saturated and unsaturated, with glycerol and glycerides, other alcohols, and their fatty esters. To compounds consisting of fatty acids and containing phosphorus and nitrogen he gives the name of *Phospholipines*, which group contains some of the substances obtained from the brain by Thudichum and called by him "phosphatides." The lecithines are fully described. *Galactolipines*—e.g., cerebrone—are compounds of fatty acids that contain nitrogen and galactose, while the lipines contain nitrogen but no phosphorus or carbohydrate group. Chapter II. deals with extraction and estimation of fats in animal tissues. A few diagrams of apparatus might help the reader. The last chapter, on the Physiology of Fats, is the one most interesting both to the biologist and bio-chemist as it deals with the synthesis of fats and their higher fatty acids, the physiological oxidation of fats, and the rôle of fats in vital phenomena. There is an excellent and full list of original papers.

We can cordially commend the perusal of this monograph to the bio-chemist and to the physiologist.

LIBRARY TABLE.

The Histogenesis of the Blood Platelets. By JAMES HOMER WRIGHT. (Publications of the Massachusetts General Hospital.) Reprinted from the *Journal of Morphology*, Vol. XXI., No. 2, July, 1910. With two coloured plates. Pp. 16.—Among all the constituents of blood, the blood platelets have probably been the subjects of more divergent theories than any others. Some of the suggestions as to their origin put forward in the past may well be dismissed at the present time as is indicated by Dr. Wright in the paper before us. For instance, he gives good reasons why the theory which attributes the origin of the blood platelets to the extruded nucleoli of the red corpuscles is not correct. There are in this case other reasons not mentioned by Dr. Wright which are still more conclusive, for there is considerable evidence to show that the nuclei of the red corpuscles are never extruded *en masse* under normal conditions.

Dr. Wright in the present paper traces the origin of the blood platelets to detached portions of the cytoplasm of certain giant cells found in the blood-forming organs which he calls "megakaryocytes" after W. H. Howell. One of the weak points in his argument is that the only way in which the granules in the blood platelets and the "megakaryocytes" can be demonstrated is by using a particular method of fixation and staining. There are points about the technique which would probably not meet with the approval of those who have devoted themselves to the study of cells. Moreover, though it is quite probable that there may be constituents of cells which can only be demonstrated by one special method of fixation and staining, the experience of cytologists in recent years has shown that many cases in which a particular method was accepted as necessary to demonstrate a particular cell constituent were due to some mistake. For instance, the various parts of trypanosomes were supposed to be hardly stainable by any other method than Romanowsky. It has since been shown that if the films are not dried differential staining of trypanosomes by almost any of the regressive methods is quite easy.

The Microscopical Diagnosis of Diseases of the Blood and of Pathological Tissues. By O. C. GRUNER, M.D. Lond. London: George Pulman and Sons, Limited. 1910. Price 2*s.* 6*d.*—This is the fifth volume of the Phonographic Medical Library which is being issued by the Society of Medical Phonographers, and is intended both for the practitioner and student who reads phonography. The first section of the little book deals with the diagnosis of diseases of the blood and draws special attention to the blood-count and to the identification of the pathological appearances of blood cells. A useful glossary of terms used in hæmatology closes a clear though brief account of an interesting subject. The second half is devoted to the diagnosis of morbid tissues and the preparation of specimens for the microscope, and contains an appendix giving some useful fixing and staining formula. Two plates, beautifully reproduced in colour, show the microscopic appearances referred to in the text. On account of the desire of the author to make this volume uniform with those that have already been issued in the series, his treatment of the subject has been somewhat limited, but in his preface he states that he has in view the publication of a "longhand" version which may be a little fuller. We have often pointed out the value of a knowledge of shorthand to both practitioner and student, and the work under notice, while useful as a reading book, will at the same time add to the knowledge of the medical phonographer.

The Inherent Law of Life. By FRANZ KLEINSCHRODD, M.D. Translated and edited by LOUISE C. APPEL, M.B.Lond. London: George Bell and Sons, Limited. 1910. Pp. 214. Price 3*s.* 6*d.* net.—The author and translator of this book state that the former is acquainted only with "modern" or "Western" science, while the latter has the advantage of being a Theosophist and of having studied "ancient" or "Eastern" science." We have found no "science" in the English version, and may fairly infer that the quest for it in the original German would be equally vain.

Woman and Marriage: a Handbook. By MARGARET STEPHENS. With a Preface by Dr. MARY SCHARLIEB, and an Introduction by Mrs. S. A. BARNETT. London: T. Fisher Unwin. 1910. Pp. 280. Price 3*s.* 6*d.* net.—This book adds one more to the large number of works already in circulation on the subjects named in the title, and it is a good example of its class. Mrs. Stephens treats the difficult subject of the initiation of children into the mysteries of sex with delicacy and good sense. She inclines to the opinion that it is a mother's duty to tell her children what is necessary. Many hold that it is better left to a wise and discreet schoolmistress, as a subject, perhaps, to be included in lessons, but there is room for both opinions. Any way, the information is probably best imparted in stages beginning at an early age, and if this were the case there would not be so many wedding night tragedies, nor would the interview between mother and daughter so painfully, and yet amusingly, described in "Autour de Mariage," be necessary. Mrs. Stephens's remarks upon the hygiene of early womanhood, marriage, pregnancy, and labour deal with the matter both from the mental and physical view and are trustworthy. Although we quite endorse the statement that tight clothing is injurious during pregnancy, we cannot agree with the remark: "The very meaning of the word at present so much used (*enceinte*) is 'ungirdled.'" As a matter of fact, it is exactly the opposite. Neither do we think that the statement on p. 71 that the chick finds its nourishment almost entirely in the white of the egg during incubation is correct. Except for these slips the book should prove of use to those for whose instruction it has been written.

The Faith of an Evolutionist. By THEOBALD A. PALM, M.D. Edin. London: H. R. Allenson, Limited. 1910. Pp. 159. Price 2*s.* 6*d.* net.—The book is an undoubtedly sincere attempt to show how the author harmonises his own conceptions of evolution and religion. But his conception of evolution is very vague; and he uses this term in any sense which seems to help him in maintaining his view that a belief in evolution is an assistance towards the acceptance of religious mysteries. The following instances will suffice to show that the book is in no sense scientific. In one place he calls in "the evolutionist's axiom," that all life proceeds from a previous living being, to strengthen the belief in a Divine Creator. In another place he quotes the Atonement as presenting to the evolutionist "the supreme instance of the struggle for the life of others." The world's hero, he says, is one who wins in the struggle at the expense of others; the Christian hero is he who lays down his life in the struggle. Illustrations of this kind abound in this little book, the author of which is clearly gifted with sincere faith as well as with some degree of poetical imagination.

JOURNALS AND MAGAZINES.

Jahreskurse für Ärztliche Fortbildung. (*An Annual Post-graduate Course.*) A monthly journal. Munich: Lehmann. Price M. 16 per annum.—The September number is devoted to orthopædic surgery and affections of the locomotive organs. Professor Lange writes on spinal deformities and infantile paralysis. The details of the treatment of tuberculous spondylitis by the moulding of a plaster bed and the different forms of plaster jackets and corsets are carefully described. A novel and ingenious operation for preventing a spinal deformity due to tubercle from becoming worse is mentioned. It consists of the incorporation of two steel bars, 10 to 14 cm. long and of the diameter of a pencil, into the vertebral column. These act as internal splints and are left permanently in place, one case which is figured having had the operation two years previously. For the treatment of tuberculous abscesses, aspiration with injection of iodoform is recommended in preference to the use of the knife, but it is admitted that this must usually be repeated and Beck's bismuth injections are advised if a fistula results. In dealing with the subject of laminectomy for tuberculous paraplegia, it is mentioned that Chipault in 103 cases only obtained success in 25. Infantile paralysis and the treatment of its resulting deformities take up a large section of this number. In the acute stage of the disease a plaster mould to keep the spine at absolute rest is advised. The following methods of treatment are then carefully detailed with a judicious selection of the points of cardinal importance: the use of apparatus for the prevention of deformity, forcible

correction of established deformities, nerve-grafting, arthrodesis, tendon transplantation, and some recent improvements in the construction of artificial limbs. The author states that he has not yet seen any satisfactory result from nerve-grafting. It is advised that arthrodesis in the knee should not be undertaken until after 20. Professor Ludloff, in dealing with the affections of the locomotive organs, confines himself almost entirely to a consideration of the hip-joint. He first gives the differentiating signs of the various injuries and diseases of this joint, and then discusses the best methods of its systematic examination. A great number of very clear diagrams illustrate his points, and the whole article will be of the utmost value both to students and practitioners.—The October number deals with the subject of infectious diseases. Professor von Jaksch gives a short reference to the most important of the 500 papers referring to this subject that have appeared during the year. This heroic attempt results in his article being so condensed as to consist of little more than a reference list of current literature. There is held to be sufficient evidence for regarding Bordet's bacillus as the specific cause of whooping-cough. In scarlet fever the white blood cells show certain alterations, consisting of an increase in the number of polynuclear cells, a diminution in the lymphocytes, and an increase in the eosinophile cells. There also occurs a well-marked chlorine retention, which is held to have an important relation to the occurrence of nephritis. When treating of enteric fever the existence of typhoid carriers is regarded as having the greatest importance in the propagation of the disease. Amongst tropical diseases the following are reviewed at the greatest length: kala-azar, beri-beri, sleeping sickness, and malaria. In relation to tuberculosis an account is given of the value of antiformin in the examination of sputum and fæces. Its use is to render the detection of small numbers of the bacilli easy by segregating them out of a large bulk of fluid. Citation of 140 recent papers makes this article a most valuable work of reference. Professor Fraenkel occupies 17 closely filled pages with an explanation of the nature and phenomena of anaphylaxis or the hyper-excitability of immunised animals to further doses of the immunising agent. "Anaphylaxis is thus a form of auto-intoxication, brought about in this manner, that the anti-albumin bound to the cells in the circulating blood and other tissues combines with freshly introduced albumin and thus sets up the phenomena we have been considering. Anaphylaxis must therefore be regarded as a peculiar form of albumin-anti-albumin reaction which may occur in the living body as well as in the test-tube." He next deals with typhoid fever. It is pointed out that the modern view of this disease is more and more that of a blood infection rather than one primarily of the digestive tract. Therefore, great importance is given to the recent methods by which the bacilli can be detected in the blood. As a preliminary to these, a comparatively large quantity of blood must be taken direct from a vein and mixed with ox-gall. Then by the use of recent methods of staining and culture, which are given in some detail, the bacilli are detected. A short reference is made to paratyphoid fever and its possible relations to meat, and especially to sausages. A long list of references is appended.

The Quarterly Journal of Microscopical Science. Edited by Sir RAY LANKESTER, K.C.B., F.R.S., with the coöperation of ADAM SEDGWICK, M.A., F.R.S., SYDNEY J. HICKSON, M.A., F.R.S., E. A. MINCHIN, M.A., and GILBERT C. BOURNE, M.A., D.Sc., F.R.S. With lithographic plates and figures in the text. New series, No. 220 (Vol. LV., Part 4). November, 1910. London: J. and A. Churchill. Price 10*s.* net.—This part contains: 1. The Division of the Collar-cells of Clathrina Coriacea (Montagu): A Contribution to the Theory of the Centrosome and Blepharoplast, by Muriel Robertson, M.A., and E. A. Minchin, M.A., with plates 25 and 26. In this article the authors discuss at some length the significance of the blepharoplast and the centrosome, which they consider to be bodies of essentially the same nature. They define a trypanosome as a binucleate organism, possessing a trophic nucleus, a kinetic nucleus, and a blepharoplast, or basic granule. With the view of throwing light on various disputed points they have studied the division of the collar-cells of a calcareous sponge. 2. Studies of Avian Hæmoprotozoa: (1) On Certain Parasites of the Chaffinch (Fringilla cœlebs) and the Redpoll (Linota rufescens), by H. M. Woodcock, D.Sc. Lond., assistant to the University, Professor of Protozoology, with plates 27–31. This is an attempt to obtain some enlightenment on the important question of the life-cycle of the avian hæmoprotozoa. The article is a very long one. The author finds the medium best adapted for preserving the parasites in life, and to enable them to propagate, is the blood-agar medium, the blood being derived from the rabbit or from the ox. The principal habitat of the trypanosomes is in the marrow of bones. Very full details of the parasites are given, illustrated by numerous figures. 3. Studies on Ceylon Hæmatozoa; No. II., Notes on the Life-cycle of Hæmogregarina Nicoriæ, Castellani and Willey, by Muriel Robertson, M.A., with plates 32–41 and one text figure. These observations by Miss Robertson give, she observes, somewhat fuller accounts than those given by Dr. Castellani and Dr. Willey published in the *Quarterly Journal of Microscopical Science.* 4. On the Origin and Migration of the Stinging Cells in Craspedote Medusæ, by Charles L. Boulenger, M.A. Camb., lecturer on Zoology in the University of Birmingham, with plates 42 and 43 and 5 text figures. This part contains also the table of contents and index to Vol. LV.

CHARING CROSS HOSPITAL.—We have received from Lady Juliet Duff an appeal for £100,000 in order to free Charing Cross Hospital from debt and enable the wards at present closed to be reopened. There are five wards, containing 87 beds, which are closed for lack of funds, and apart from the 1500 sick persons which it is estimated are thus debarred from treatment, a large number of casualties that ought to be treated at the hospital frequently have to be sent to other institutions. Lady Wantage has promised £1000 towards the appeal fund and Messrs. N. M. Rothschild and Sons have given £300. Donations, which may be sent either to Charing Cross Hospital or to 51, Portland-place, London, W., will be gratefully acknowledged by Lady Duff, who is president of the appeal committee.

WANDSWORTH SCHOOL CLINIC.—A meeting to discuss points affecting the treatment of school children at the Wandsworth School Clinic will be held at the Town-hall, Wandsworth, on Dec. 2nd, at 8 P.M., in order that by the coöperation of all interested the clinic may prove successful. Invitations to attend are being issued not only to all registered medical practitioners in the district, but also to all members of the school care committees and the heads of school departments. The clinic will be opened on Jan. 1st, 1911, in Garrett-lane, Wandsworth, and will be under the control of the Wandsworth division of the British Medical Association. It has received the approval of the London County Council and the Board of Education. There will be a staff of seven local medical practitioners, who will hold office for one year only and who will be succeeded by others in rotation, the selection being made by the London County Council. The clinic will be open only to children attending the Council elementary schools whose parents are unable to pay the fees of local medical men and who have been found defective after medical inspection as to the ears, nose, throat, or eyes. A nurse appointed by the London County Council will be in daily attendance. Ringworm will be treated at the surgeries of local medical practioners.

New Inventions.

A VULSELLUM CATCH-FORCEPS FOR THE MORE EFFICIENT REMOVAL OF IMBEDDED TONSILS.

THE accompanying illustration depicts the forceps which Messrs. Mayer and Meltzer, 71, Great Portland-street, W., have made to my design for assisting in the removal of large tonsils which do not project beyond the level of the faucial pillars. Under such circumstances, and even when pressure is applied from without, the "guillotine" will only succeed in removing slices of the tonsils and will not get rid of the most important part of the gland—viz., its upper portion, which is intimately associated with the supra-tonsillar fossa, a region in which many of the acute, and most of the chronic, inflammations of the tonsil take their origin. By means of these forceps the enlarged gland can be securely seized and drawn inwards and forwards, while with scalpel or scissors the faucial pillars may be freed from the gland substance, its capsule entered, and the tonsil more or less turned out of its bed. When thoroughly freed from surrounding structures the ordinary guillotine or tonsil snare may be slipped over the forceps and the tonsil completely enucleated.

The advantages of the instrument are twofold: 1. It is slightly curved towards the claws, so that the surgeon's view is not obstructed, as is the case with a straight instrument. 2. Once the tonsil is securely grasped it is not released until the operation is completed—a great advantage over the old vulsellum forceps with scissor handles.

Harley-street, W. HERBERT TILLEY, F.R.C.S. Eng.

"WIGMORE" NASAL DOUCHE.

Messrs. Allen and Hanburys are making for me a simple rubber contrivance for irrigating the nasal passages which they have registered as the "Wigmore" nasal douche. I have made use of the douche for some months in my practice and find it answers admirably. It has the following advantages:—1. Children use it easily and without making

a mess; its simple appearance does not cause them alarm. 2. The lotion passes at inspiration through the nasal passages without discomfort or shock. 3. A good quantity of lotion can be employed, as is often necessary, without danger to the Eustachian tubes. 4. There is nothing to break, and the douche can be easily cleaned or sterilised.

I have found the douche very useful in treating common nasal catarrh, the lotion employed being a weak solution of common salt and carbonate of soda. Those who suffer from attacks of "cold in the head" will find a daily irrigation with some such simple lotion an excellent preventive measure.

Croydon. A. PERCY ALLAN, M.D. Lond.

NATIONAL DENTAL HOSPITAL.—On Nov. 18th, under the presidency of Mr. Butlin, President of the Royal College of Surgeons of England, the staff and past and present students of the National Dental Hospital spent a very pleasant evening at the Trocadero Restaurant, at Piccadilly-circus, London, W., the occasion being the annual dinner and the presentation of prizes and certificates to the successful students by the chairman. In addition to the chairman, the guests present included Mr. W. B. Bacon, Dr. Dudley Buxton, Mr. C. A. Clark, Mr. P. P. Cole, Mr. J. F. Colyer, Mr. W. H. Dolamore, Mr. F. S. Eve, Mr. Clinton T. Dent, Mr. C. W. Glassington, Mr. W. A. Maggs, Sir Henry Morris, Mr. S. H. Olver, Mr. P. H. Parsons, Mr. W. B. Paterson, Mr. C. F. Rilot, Mr. William Rushton, Dr. H. Campbell Thomson, and Professor A. S. Underwood. The toast of the evening, which followed that of "The King," was proposed by Mr. Butlin, who, in an interesting speech interspersed with personal experiences and amusing anecdotes, set forth the wonderful advance which the dental profession had made in the past 50 years. The quack, he said, was always able to make the public believe that he knew more than the professional man, and to illustrate the gullibility of the public the speaker recalled the written statement of a quack trading under the name of Cosmos, whose firm stopped teeth "which were set with diamond pivots and fitted with emeralds, the work being done with steam, which is well known to be the most efficacious method." In order to show the progress of the past half-century he pointed out that Cartwright in an address in 1857 had said that the standard of education for dentists was calculated to form merely a successful artisan. Dentistry was frequently practised by chemists and druggists, and even a brass-turner and a blacksmith combined with their trades the extraction of teeth, while the general opinion of the public was that anyone could take out a tooth. At the present time the work of the dental profession was closely related to medicine and surgery, it had a large scientific literature, and it was recognised that the proper care of the teeth had a vast bearing on national health. Who, Mr. Butlin concluded, would have ventured in 1861, when the National Hospital was founded, to say that at the present day some of the staff of the hospital would be acting as examiners, or that a dentist would be not the least interesting Hunterian Professor at the Royal College of Surgeons. Mr. Sidney Spokes, Dean of the hospital, who responded to the toast, spoke of the need for reconstructing the hospital. The matter had been brought before the notice of King Edward's Hospital Fund and had, he understood, received the approval of that body. Dr. Campbell Thomson, the Dean of Middlesex Hospital, who proposed the toast of the "Past and Present Students," said that many of the dental students of London received part of their training at the Middlesex Hospital, and he congratulated the students on the excellence of their work. Mr. C. L. Donne and Mr. A. Barritt responded. The toast of "The Visitors" was proposed by Mr. F. R. Smyth and responded to by Sir Henry Morris, who, as a representative of the General Medical Council, said that the interest of the dental profession always received the best consideration. The following is the prize list (in addition to a certificate those marked (1) received a medal):—Dental Anatomy and Physiology: B. Mendleson (1), A. Barritt (2), P. P. Davies (3). Dental Surgery and Pathology: B. Mendleson (1), A. Barritt (2). Dental Mechanics: G. T. Davies (1), E. R. Dermer (1), G. J. S. Rose (1); W. Sampson (2), G. L. Venning (3). Dental Metallurgy: A. Barritt (1), A. D. E. Shefford (1); G. T. Davies (2), G. J. S. Rose (2); G. L. Venning (3). Dental Materia Medica: A. Barritt (1), B. Mendleson (2), P. P. Davies (3). Dental Histology: B. Mendleson (1), A. Barritt (2). Operative Dental Surgery: A. A. Hume (1), B. H. Jones (2). Ash Prize: B. Mendleson. Rymer Medal: B. Mendleson.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 26, 1910.

The Hereditary Factor in Pauperism.

AMONGST the many services which medicine has rendered and is rendering to the modern State, one of the least recognised but by no means the least important is the change of method which it is introducing into the study of social problems. It has brought to the investigation of these questions that inductive spirit which, necessary in every field of scientific inquiry, is doubly necessary when dealing with phenomena in which a real diversity of nature is very easily disguised under a superficial appearance of uniformity, and in the study of which there is therefore a corresponding liability to the fallacies that lurk in generalisation. From errors of this sort the medical observer is, or ought to be, protected, not only by the general habit of mind which he owes to the discipline of his science, but also by the fact that he naturally approaches the consideration of these social problems through the study of individual instances, and for that reason is under no temptation to overlook the heterogeneity of the phenomena which each of these problems embraces. In the result this means that the influence of medical science on sociological inquiry is to make it primarily biological, and this not merely in the sense of allowing in the general view for the operation of biological forces, but also in the sense that it bases the investigation of social phenomena on the study of the living individualities which make up the social group. In short, the inductive spirit forces us to recognise that from the varying characteristics of these individuals and from their varying response to and reaction upon environmental agencies the social phenomena result, and not, as is the assumption of *a priori* sociology, from the play of economic forces on a collection of passive and equivalent units.

A striking illustration of the change in our ideas that must follow from this way of looking at social questions is furnished by the very remarkable study of the hereditary factor in pauperism which appears in the number of the *Eugenics Review* for the current month. This journal is the organ of the Eugenics Education Society, a society founded under the distinguished presidency of Sir FRANCIS GALTON, with the object, as its name implies, of educating public opinion in matters relating to the improvement of the race. Early in the present year the society appointed a small committee to consider the eugenic aspects of Poor-law relief, and as it was held that the Majority and Minority Reports of the recent Royal Commission gave practically no information on this side of the question, the committee undertook an independent inquiry, directed more particularly to determining whether pauperism is in any measure due to inherent lack of civic aptitudes, and whether therefore the tendency to become paupers is hereditarily transmitted through succeeding generations. The most important section of the report now published embodies the first instalment of the results obtained in this inquiry, and consists of an extensive pedigree of intermarried pauper families, comprising four generations and 183 individuals. This pedigree and a number of smaller pedigrees, given in a separate and very valuable paper by Mr. LIDBETTER, an experienced Poor-law official who assisted in the investigation, are the most important, and indeed almost the only, data that have yet been published with reference to this question. We may add that the inquiry appears to have been carried out with commendable thoroughness, and that the critical examination of the evidence seems to have been of a sufficiently searching character to ensure a just estimate of the relative values of the biological and economic influences in each case. It is only on the basis of a minute and detailed investigation of this sort that we can found the scientific study of any bio-social fact.

Considering now this instructive pedigree, we find that it shows very definitely certain facts which throw a good deal of light on the true inwardness of pauperism, or at all events of some forms of pauperism. First among these is the fact that pauperism tends to recur in successive generations of the same family. In one family, for instance, the youngest generation is represented by three children, two of whom (one being illegitimate) are of the hooligan type and are in an industrial school, and the third is in a workhouse school. The mother of these children was illegitimate and is a pauper, the maternal grandmother was likewise illegitimate and was a pauper, and the maternal grandfather was also a pauper, while on the paternal side the father and both grandparents were paupers. Such a history—and it is typical of a large number of the families shown in the pedigree—suggests very strongly that the pauperism which we are dealing with here may be the expression of an inherent and transmissible defect of character, and cannot be explained simply as a result of adverse economic conditions. And in support of this view we find that the committee as a result of their personal examination of these hereditary paupers describe them as presenting "obvious defects in physique and character," as "below the average in their powers of intelligence, continuity of work, and endurance," and, further, as showing these deficiencies from youth. Another trait of this class, and one which is possibly to be connected with the characteristic of moral feebleness to which we have just referred, is the frequency of illegitimacy and its apparent tendency to run in families. We may note this in the case quoted above, and in another instance in the pedigree illegitimate descent runs through four generations. It is interesting to observe that both in their free unions and in their marriages the members of the pauper family appear to have a decided preference for allying themselves with other pauper families, to such an extent indeed that the genealogical tree in its general aspect suggests a care for purity of blood hardly to be excelled by a rigidly exclusive race of the *haute noblesse*. In explaining the occurrence of this in-breeding in the pauper stock—a fact in itself by no means regrettable—

we must, no doubt, take account of the influence of association in workhouse life, but even when we have made full allowance for this factor, the tendency must be admitted to imply a want of resistance to a degrading environment which is in itself indicative of weakness of character. Another fact of interest brought out by these records has been already remarked by other observers—namely, that the degenerate tendencies do not manifest in transmission a single set of characteristics, but take on a great multiplicity of forms, so that a single family stock may produce paupers, imbeciles, feeble-minded inebriates and prostitutes, and certain types of criminals.

In the interpretation of the facts which we have briefly outlined in the foregoing remarks we have, of course, to take account of the difficulty of distinguishing between what is due to inherent disposition and what to the influence of environment. The mere fact of paupers occurring in several successive generations of the same stock, striking and suggestive as it is, is not sufficient proof of the inheritance of a specific tendency to pauperism. It may be explicable, wholly or in part, as the result of inheritance in a different sense, the inheritance of opportunity which passes on the same mode of life from one generation to another, which has been known to make writers of verse *invitâ Minervâ*, and which may lead the son of the scholar to follow in his father's footsteps, not because he has inherited his brains, but because he has inherited his library. In the present instance this fallacy appears to have been avoided by the examination of the individuals whose characteristics were in question and who were found, as we have already remarked, to show evidences of innate inferiority; but in view of the importance of the point it is perhaps to be regretted that the writers in the *Eugenics Review* have not dealt with it in more detail. In any case, however, it is likely on psychological grounds that the influence of the social *milieu* is less potent and the influence of inherent disposition more potent in conduct phenomena of the passive sort, such as pauperism, and possibly prostitution, than in more active manifestations, where an inherited environment may do much to impart a definite direction to plastic aptitudes, as is probably the case, for instance, of skilled crime or of the learned professions. These considerations will incline us therefore to adopt the view which the eugenic investigators urge on our acceptance and to conclude that the pauper class is in a large measure perpetuated by the free breeding of definite pauper stocks, the offspring of which are characterised by a native incapacity to live in any other way than as social parasites. However interpreted, the facts are obviously of very great practical importance, and in reporting them the Eugenics Education Society has done a real service to sociology.

Intermittent Limping.

A CONDITION of intermittent lameness sometimes referred to as "spring-halt" has long been known to occur in horses, and has been found to be due to aneurysmal conditions of the iliac arteries resulting from the presence of parasitic worms. The explanation usually given of the symptoms is that the condition of the vascular supply to the lower limbs is such that, while it is sufficient for the needs of those structures at rest, it is incapable of affording the extra supply required by the muscular exertion of progression. A similar condition has often been described in man under various names, such as intermittent claudication, crural angina, intermittent limping or lameness, and dysbasia angiosclerotica. CHARCOT in 1856 described a case in man associated with the presence of an aneurysm of one of the iliac arteries. It is, however, to Professor W. ERB of Heidelberg, whose researches upon many of the disorders of the neuro-muscular mechanisms are so well known, that we owe the most exhaustive and critical study of the clinical and pathological features of the disease. His original paper was published in 1898, and in it he attributed the condition to arterio-sclerotic changes in the main arteries of the lower limbs. Again, in 1904 he published a further study of the disease based upon 45 cases. Recently he has contributed an interesting analysis of 38 fresh cases, and reviewed the main features of the condition.[1] Several other papers have also appeared upon the same subject during the last few months by GOLDFLAM,[2] HANS CURSCHMANN,[3] and LEOPOLD FISCHER.[4] Both Professor ERB and Dr. CURSCHMANN maintain that it is by no means uncommon, and that in spite of its characteristic symptoms it is often overlooked or wrongly diagnosed. In many English text-books it is dismissed with but brief reference, and in view of this fact and of the gaps which still exist in our knowledge of its causation and pathology it is of some interest to review the chief features which it presents.

The main symptom of this condition is the lameness or difficulty in walking to which it gives rise. After a longer or shorter period, varying from 5 to 30 minutes, sensations of fatigue, stiffness, and cramp supervene, causing the patient to limp and eventually to come to a standstill. After a short rest he may be able to start off again, but is soon again limping and brought to rest by a return of the symptoms. With these motor symptoms there are also associated certain sensory and vaso-motor phenomena, including paræsthesia and pain in the feet and legs, stiffness and painful cramps in the calves, anæmia and coldness of the skin, or sometimes cyanosis, but rarely heat—all these phenomena developing on walking and disappearing with rest. A most important feature in these cases is that the pulse in the dorsalis pedis and posterior tibial arteries is more or less completely suppressed. In some cases only one pulse may be wanting, while in others, two, three, or all four may be weak or absent. In some cases they may vary with the condition of the feet, whether warm or cold, or with the condition of the patient. Professor ERB lays stress upon the importance of investigating these pulses in cases of neuro-muscular disease of the lower extremities, although he admits that it requires time and patience to do so. The vaso-motor phenomena are of considerable interest, the more so in view of the fact that Professor OPPENHEIM describes a functional or angiospastic form of intermittent limping depending upon vaso-constrictor excitability. This view is approved by Dr. CURSCHMANN, but Professor ERB and Dr. GOLDFLAM both express doubts as to its existence, and Professor ERB believes that such cases are really examples of intermittent limping in which the

[1] Münchener Medizinische Wochenschrift, No. 21, p. 1105, and No. 22 p. 1181.
[2] Ibid., No. 33, p. 1747. [3] Ibid., No. 31, p. 1630. [4] Ibid., No. 39, p. 2041.

arterio-sclerotic changes are not at first sufficiently marked to be recognisable. He maintains that the vaso-motor phenomena are sequels or concomitant symptoms of the condition and denies that they stand in a causal relationship. In the case recorded by Dr. FISCHER, soon after the pain in the calf and foot came on, the leg and foot became pale and corpse-like in appearance owing to a marked ischæmia, which was soon followed by an intense hyperæmia. On walking again this soon gave place to ischæmia, to be again followed by hyperæmia. This case was also of interest in that the condition was unilateral and that the vaso-motor phenomena did not develop until the condition had existed for years, thus supporting Professor ERB'S contention.

In regard to the etiology of the condition, it is remarkable that it is rare among the poorer classes, the great majority of Professor ERB'S cases having occurred in his private practice, the reasons for this being as yet obscure. It is also comparatively infrequent in women, the proportion varying from 1 woman to 16 or 18 men in certain collected groups of cases. Some statistics also suggest a preponderance of the cases among the Jews, but this is as yet uncertain. The disease usually manifests itself after the fortieth year, but cases occur earlier. Both syphilis and alcoholism appear to play a subordinate part in the production of intermittent limping, but in regard to tobacco there is a general agreement that it is an important causal factor. More than 50 per cent. of Professor ERB'S present series of cases confessed to excessive use of tobacco, and he suggests that tobacco may lead to a localisation of arterio-sclerotic changes in the limb vessels, thus confirming the statements of GOLDFLAM, STRÜMPELL, VON SCHROTTER, and others, that misuse of tobacco is an important cause of arterio-sclerosis. Exposure to cold seems also to exert an actual influence upon the causation of the disease, a history of living in cold rooms, of lying on wet ground, or of military exercise in snow, occurring in about half of the cases. Diabetes was a coexisting disease in a few of the cases. The influence of bodily and mental overstrain, of neurasthenia and other nervous diseases is as yet obscure, and Professor ERB suggests that particular attention should be paid to these conditions in recording cases. No doubt in most cases various causes combine to produce the changes in the vessels leading to intermittent limping, but among them it seems probable that misuse of tobacco plays a predominant part.

The diagnosis of the condition is a matter of considerable urgency, since it is sometimes a precursor of arterio-sclerotic gangrene, and by appropriate treatment this untoward sequel may be prevented. Among the conditions for which it appears to have been mistaken, according to Professor ERB, are various affections of the spinal cord, neuritis, myositis, venous thrombosis, myasthenia, Raynaud's disease, acro-paræsthesia, erythromelalgia, and hysterical and neurasthenic dysbasias. Dr. CURSCHMANN describes certain atypical cases in which at first the difficulty in walking became less after further effort. In opposition to ERB and GOLDFLAM, he believes in functional or angiospastic forms of the condition, and describes a case in which symptoms of intermittent limping coexisted with osteomalacia. Treatment directed to the latter condition gave complete relief to the lameness. Professor ERB also describes two cases of acute arteritis of sudden onset and of idiopathic nature occurring in previously healthy young men—in one case after exposure to cold, in the other without obvious cause. The condition was unilateral in both cases and gave rise to symptoms similar to those of intermittent limping, with absence of the pulse in the arteries of the foot on the affected side. Professor ERB has not been able to find any similar cases in the literature of the subject. The pathology in all cases seems to be an affection, usually arterio-sclerotic, of the vessels of the lower limbs.

The treatment of intermittent limping consists in endeavouring to remove the causal factor, such as the excessive use of tobacco or the exposure to cold and damp, and in applying measures directed to combat the progress of the arterio-sclerotic changes in the vessels of the limb. Various iodide preparations are recommended in medium doses, such as sodium and potassium iodides, iodipin, and sajodin, and the use of iothion locally. The diet should be carefully restricted, as in cases of general arterio-sclerosis. Galvanic footbaths are also recommended, and rest is an important factor. The use of vaso-dilator drugs has been recommended, but Professor ERB says their value has not yet been established. Dr. FISCHER, in the case to which we have already referred, found amyl nitrite a valuable palliative agent. The original explanation of the symptoms of intermittent limping is that which we have already quoted—viz., that the sclerosed blood-vessels of the lower limbs are unable to supply the increased quantity of blood required for muscular activity, but an alternative theory of vaso-constrictor spasm has been suggested to account for some of the cases. The condition of intermittent lameness is of great interest also, from the light it throws upon other obscure vascular conditions. As Professor W. OSLER has pointed out, ALLAN BURNS, as long ago as 1809, suggested an analogous explanation of angina pectoris, which under the name of the intermittent claudication theory is still widely held. In like manner some of the fleeting paralyses, paræsthesiæ, amnesias, and other conditions occurring in arterio-sclerosis have been attributed to a similar condition affecting the cerebral vessels.

The Scientific Evidence in the Crippen Case.

IN our issue of Oct. 29th, p. 1299, we published a brief account of the trial of HAWLEY HARVEY CRIPPEN for the murder and mutilation of his wife, giving, save in one direction, but the barest outline of the story, no more being necessary from us having regard to the prominence which the case, in all its gruesome details, had received in the daily press during the three investigations held respectively before the coroner, the magistrate, and the LORD CHIEF JUSTICE of England. But with the medical evidence we dealt at some length because it played an important part in the conviction of the murderer, and proved once again, as in similar revolting tragedies, what a weapon in the hands of justice the right application of scientific principles may be. Now that the convict has met his fate we think it right to make a

few observations on that evidence. CRIPPEN was found guilty of his crime on perfectly common-sense grounds—grounds which could be appreciated by those without a trace of scientific knowledge. He had the opportunity to murder his victim, an opportunity which no one else possessed; he had a powerful motive for wishing to do so; he was the last person who saw her alive; he fled from justice when suspicion was aroused; he was arrested with what must be regarded as evidence of a confession in his possession; the remains of a woman, the sex being indicated by portions of hair and raiment, were found in a house which he had occupied since 1905, enveloped in a fragment of his own attire which must have been purchased at a date subsequent to the beginning of his tenancy. These things might have been sufficient to condemn CRIPPEN, but the Crown called scientific evidence which removed from all men's minds that last shadow of doubt which might have been the prisoner's benefit. CRIPPEN, having the opportunity of purchasing hyoscine, did so, and evidence was found in the remains of the presence of more than a poisonous dose of hyoscine. The victim was known to have undergone an abdominal operation, and evidence was found in the remains that an abdominal operation had been performed. There is no case here of a verdict having gone against a man solely, or mainly, on abstruse scientific points. Every episode in the revolting story pointed directly towards CRIPPEN as the murderer, which the jury pronounced him to be, the scientific evidence falling into its place in support of other testimony. The Court of Criminal Appeal upheld the verdict uncompromisingly.

A point was made in behalf of CRIPPEN which it was inevitable that the counsel for the defence should make and which it was right should receive all possible stress—namely, that the discovery of hyoscine in the remains was largely discounted in importance by the fact that, owing to a paragraph in a newspaper, it was widely known that CRIPPEN had purchased hyoscine not long before the presumed date of the tragedy. The suggestion of course was that it was possible for the scientific witnesses to be so influenced or biassed by this knowledge as to find wrongfully in the remains traces of that which they expected to find. We were glad to see that the LORD CHIEF JUSTICE, in his impartial but deadly review of the evidence, dismissed the suggestion as of no significance. Indeed, no one who has any knowledge of the procedure followed in such a scientific investigation as was demanded of the expert witnesses for the Crown could for a moment think that the chemist, every step in whose procedure would be controlled by another investigator, could be influenced in this way. It may be pointed out that in the majority of cases of suspected poisoning the investigator possesses from the beginning a clue to what he is looking for. Sometimes the dejecta of the victim give it. Sometimes the last symptoms of the dying person indicate clearly a poison or a group of poisons. Sometimes a receptacle in the bedroom contains a poison. Sometimes a poison is found in the possession of a suspect. Lastly, and generally, the purchase of a poison is traced by the police to someone concerned in the tragedy, a thing which we must presume would have occurred in this case. Blandly unsuspecting as the authorities were in the earliest stages of the investigation, we may be perfectly certain that when they saw the nature of the crime with which they were confronted they would have made inquiries at all the druggists' shops where CRIPPEN dealt, and consequently would have come across evidence of the purchase by CRIPPEN of the hyoscine. Hyoscine, as it happens, gives very distinct reactions and, without any clue to what they were looking for, the investigators would have certainly found it; all that happened in this particular case was that they received information of the sort that is generally received, and this information in no way influenced the analytical procedure.

The excitement which a singularly sordid story caused is not pleasant to look back upon. The circumstances which conspired to arouse in so marked a degree the attention of the public were adventitious and not essential to the drama, and it showed want of public intelligence not to perceive this. The ocean race, which culminated in the arrest of CRIPPEN, described in such stirring terms in so many columns of our newspapers, was not necessary to the arrest, for CRIPPEN would have been detained at the first Canadian port on the information of the captain of the *Montrose*. Wireless telegraphy, though enlisted in the cause of justice, performed nothing that could not have been dispensed with; if there had been no Marconi installation on board the *Montrose* the arrest would have been made as certainly. Divested of its sensational trappings we have a revolting tale of lust and greed. From the forensic point of view the evidence of identification was interesting, while the employment of hyoscine as the deadly agent was a novelty.

Annotations.

"Ne quid nimis."

THE EPIZOOTIC OF PLAGUE IN EAST SUFFOLK.

THE Local Government Board has issued an official statement as to the steps that are being taken in regard to the occurrence of rat plague which has been observed in certain districts in East Suffolk. The statement confirms in detail what we were able to convey to our readers last week—namely, the activity of the department in face of an anxious situation. For several weeks past Dr. H. T. Bulstrode, one of the medical inspectors of the Board, has been making local inquiries with a view of ascertaining the extent of the disease and of securing concerted action on the part of the various authorities. With him are associated Dr. W. W. E. Fletcher and Dr. R. J. Reece, also medical inspectors of the Board, and the three inspectors are making investigations over a wide area, including West Suffolk and Essex. An expert staff under the direct supervision of Dr. C. J. Martin, director of the Lister Institute, and a practical and scientific authority on plague in its various pathological and epidemic relations, has also been engaged for some time in investigating on a larger scale the local prevalence of disease among rodents, the kind of rats predominating in the districts, and the flea parasites of these rodents. Other inspectors of the Local Government Board have also been instructed to make inquiries in various parts of England. Up to the present plague-infected rats have only been found in five districts. The inspectors of the Local Government Board report that the various sanitary

authorities are actively coöperating in taking the necessary measures, while the official statement singles out for special notice, as we are very glad to see, the energetic and valuable services of Mr. H. L. Heath, assistant medical officer of health of Ipswich, who has been specially appointed by the county council of East Suffolk to deal with the matter. The county is not a rich one, and this temporary appointment carries no proper remuneration with it. On Thursday, Nov. 17th, the President of the Local Government Board received a deputation from the East Suffolk county council, when various questions of procedure were discussed at length. Mr. Burns emphasised the need for continuous and persistent efforts on the part of local authorities as well as of individuals, who it was hoped would all coöperate in the taking of measures for the destruction of rats and the prevention of their entry into houses. The official statement of the Board concludes with the intimation that although cases of plague in man are unlikely to arise, arrangements are being made by the various sanitary authorities for the early recognition and isolation of such cases should they occur. We are glad to see that the condition in Suffolk is being treated with this reasonable gravity. There never was any cause for panic, as we pointed out several weeks ago, but it is idle not to see that a peril exists which has to be guarded against.

MEDICAL STUDENTS AND THE LAHORE MEDICAL COLLEGE.

WE learn from articles in the *Lahore Tribune* that discontent prevails at the Lahore Medical College, the principal having declined to give certificates of attendance at courses of lectures to certain students who had failed to pass their examinations, except on payment of Rs.35 for each course, amounting to Rs.350 in all. It appears to have been the case that some students who had failed to pass at Lahore had subsequently come to Europe, and, armed with certificates of attendance at the necessary courses of instruction, had succeeded in obtaining European qualifications. We say "European" because we are not aware whether they were English, Scottish, or Irish. It would appear unlikely at first sight that such diplomas should be more easily obtainable by natives of India than diplomas granted in that country by examiners more intimately acquainted with the intellectual and other idiosyncrasies of the students offering themselves for examination. Probably the explanation of the situation is that the student, far away from his friends and relations, does not care how long he takes in the course of qualification, or how many times he is rejected. The Lahore University authorities seem to have come to the conclusion that the practice of men coming to Europe to obtain a qualification, after having failed to do so in their own country, was not one to be encouraged; and therefore interposed some difficulty by raising the fees for attendance certificates. Not being acquainted with all the circumstances of the case, and judging only by the presentation of the matter in the *Tribune*, we are unable to come to a decided opinion, but we are inclined to think that the syndicate of the Punjab University are in the right. The cost of medical education in India is very low. As to the wisdom of this policy of providing cheap professional education there may be two opinions; but such being actually the case, the university authorities are justified in insisting that the students, who are provided with these educational advantages, should so employ their time and abilities as to pass the examinations at their own university. The fees said to be charged for furnishing attendance certificates, apparently Rs.350, or about £23, may seem to be rather high, but the expense of the educational course itself is extremely low, and we imagine the University authorities have strong reasons for discouraging Indian students who have failed to qualify in India from coming to Europe to obtain a medical diploma. With every desire to be fair to such students, we cannot see that they have any real grievance, unless they are able to show that the examinations at Lahore were not fairly conducted, and of this there is no hint in the papers before us. If able and willing to incur the expense of a journey to, and sojourn in, Europe for the purpose of obtaining a diploma they ought not to feel aggrieved at being charged some £23 for the necessary certificates of attendance at their own university.

PRISON REFORM.

THE treatment of persons convicted of crimes and sentenced to imprisonment for two years or less, or to be "imprisoned and kept in penal servitude" for three years or longer, is receiving a great deal of attention from a Home Secretary whose leader, Mr. Asquith, when he held the same office, was responsible for the appointment of the Departmental Committee of 1895 and for the various innovations and reforms which followed its recommendations. The subject is one of considerable difficulty, involving as it does the question of combining the punitive and deterrent elements of incarceration with treatment which will, if possible, leave the prisoner at the end of his term less likely to relapse into crime than when he was convicted. From this point of view, apart from the possibility of educating him as an artisan or otherwise fitting him to earn his living honestly and of instilling into his mind a desire to do so, the care of his bodily and mental health is of extreme importance and has received, and is receiving, increased attention. To the medical man without any prejudices that can be ascribed to sentimental humanitarianism it must be repugnant that a human being, even after the committal of a heinous or brutal offence, should remain in the care of the State for a period of months or years, and should return to his fellows physically weaker than when he went in, so that he is unfit for a worker's existence until he has recovered lost vigour, or that one whose disordered mental condition has escaped recognition at his trial should undergo the rigorous and necessary discipline of prison life without any distinction being made between him and his saner fellows. Probably in the recognition and treatment of degenerate and mentally unsound prisoners there is greater room for improvement of our system than in any other of its features, and apparently the subject is one which is not escaping the notice of Mr. Winston Churchill. With regard to the maintenance of the health of prisoners by a sufficient if spare diet, by attention to sanitation and by the maintenance of suitable temperatures in extreme weathers, indeed so far as the general question of humane treatment is concerned, the improvement brought about during the nineteenth century, and particularly towards its close, has been very great, but no greater, perhaps, than we might expect from the natural growth of humane sympathy in a people whose general standard of living and of education has been considerably raised during the period. At the same time, the comparative easiness of the task of improving the lot of such limited and specially situated classes as prisoners or inmates of workhouses must be admitted. The difference between their fate to-day and that of their predecessors of 100 years ago is more marked than is the case with the humbler ranks of poor but honest workers. The Annual Register for 1810, for example, records the death in December of that year of Mr. John Russell, late keeper of the prison at Gloucester, "a man who was remarkable for his kindness and humanity to those unfortunate persons who were committed to his care." The notice continues: "It is a fact not generally

known that no adequate provision is made for the support of these persons, who, were it not for the contributions of the charitable and humane, must often experience the most severe privations. To the credit of Mr. Russell, it ought to be known that he appropriated more than half his salary to this benevolent purpose, and to the humanity of the keeper and liberal contributions of a benevolent lady these poor creatures were often indebted for a comfortable meal." Of course, contemporary evidence of the horrors of imprisonmen, at a more recent period than that mentioned are plentiful, but this naive statement of the complete lack of recognition by the State of obvious duties, and the confessed absence of any system at all where now the rigidity of the system is a source of complaint, are enough to prove that if we have not achieved perfection—a difficult task—we cannot be charged with lack of progress. But much remains to be done in which the medical profession can play a part. The scientific observation of prisoners according to their mental defects and requirements cannot be carried out without medical intervention, and treatment on such intelligent lines should pave the way to a more scientific appreciation of the original causes of crime and criminality than is now possible in this country. There are no doubt many laymen who take a sympathetic interest in the subject, but the majority of those most intimately connected with meting out the punishment of crime—judges, magistrates, and counsel, or solicitors practising in criminal courts—as well as the general public, have regarded the matter with an amount of indifference which may seem no less strange to our descendants a century hence than the methods of Gloucester Gaol in 1810 do to us at the present day.

THE SEX OF A STATUE.

IN the *Burlington Magazine* for November Mrs. Strong, whose qualifications for writing authoritatively upon such matters are undeniable, has an extremely interesting paper upon the celebrated statue known as the Fanciulla d'Anzio, which was recovered from the sea some 30 years ago and purchased recently by the Italian Government, since when it has been housed in the Museo delle Terme in Rome. The purpose of Mrs. Strong's article is to set forth her reasons for believing that this statue, which has stood in so many eyes for a typically lovely female, is really a youth, and an athletic one moreover. The statue, when its early Hellenistic date was settled, was held to be that of an extremely beautiful draped girl, but at the beginning of this year Mrs. Strong herself, Signor A. Simonetti, and Dr. P. Hartwig all stated their belief that the statue was male, and Mrs. Strong summarises the evidence for what at first sight appears to be rather a perverse view. She makes out an extremely good case, though having read very carefully her arguments, in which the possible value of medical opinion is allowed, we have come reluctantly to the conclusion that it is not possible to settle the discussion one way or the other. Unless some outside proof should turn up, some actual identification of the statue as somebody's presentation of someone, we think that the sex of the Fanciulla will always remain in dispute. Offhand, no one would doubt that the figure was that of a girl, but it is hard for anyone not an experienced archæologist to dissociate such drapery as we have here, gathered in below the breasts and again at the waist, hanging low on the neck and flowing over pronounced hips, from the idea of a female figure. With regard to this drapery Mrs. Strong states that the double girding is a motive unknown in female statues, while the higher girding is peculiarly characteristic of the robed Apollos of the fourth and third century art. If this be so, the drapery tells to the archæologist exactly the opposite story that it tells to the uninitiated observer. But does everyone agree with Mrs. Strong about the peculiarity of the robing? Dr. Hartwig is quoted as having discovered a vase picture giving the desired clue to the sex of the statue, yet this picture has been recognised by another observer as a boy tricked up in female garments. It would seem that too much stress cannot be laid upon the robes. We come now to what we can see of the actual form—namely, hair, face, neck, right shoulder, and collar-bone, top of sternum, upper edge of right breast, left arm, and feet. The hair could be that of a boy or a girl. There are statues of Apollo with more definitely feminine arrangement of locks. The neck is strong and round, but it seems to us extreme to credit it with any particularly masculine muscularity. The deltoid and biceps muscles on the left side are well developed and smoothly rounded. Dr. Hartwig seems to find this limb masculine (Mrs. Strong's words are not quite clear here), but we think it might belong to girl or boy. On the right side is a well-developed shoulder and a border of the great pectoral muscle, above which is the edge of a distinct but small globular swelling. Is this the immature breast of a maiden, or the well-developed pectoral swelling of an athletic youth? Probably it is the latter. The right arm is lost just below the deltoid curve, but when complete it was certainly thrown across the chest towards the platter on which the eyes are turned, it being balanced on the left forearm. A right arm drawn tightly across the mammary region would accentuate the muscle, and this, we believe, is what has happened. But it must be repeated that in our opinion dogmatism is impossible.

THE DEMONSTRATION OF BILE PIGMENT IN BLOOD SERUM AND IN SEROUS EXUDATES.

AN interesting paper by Professor Friedrich Obermayer and Dr. Hugo Popper appears in the *Wiener Medizinische Wochenschrift* of Oct. 29th dealing with the demonstration of bile pigment and its clinical significance in disease. In a previous paper[1] they have shown that bile pigment occurs normally in human urine, and that in a series of abnormal conditions this pigment may be increased without leading to definite jaundice. Such a pathological increase occurs in heart lesions with chronic congestion of the viscera, in cirrhosis of the liver, and in some infectious febrile diseases, such as pneumonia, also in some pleurisies and in acute rheumatism. In tuberculosis, on the other hand, no increase occurs. In the present paper they record the results of an investigation of blood serum and of various serous fluids for bile pigments with certain delicate tests. The first of these is carried out by means of a reagent made up of 625 cubic centimetres of water, 125 cubic centimetres of 95 per cent. alcohol, 75 grains of sodium chloride, 12 grammes of potassium iodide, and 3·5 cubic centimetres of a 10 per cent. tincture of iodine. This reagent is allowed to flow from a pipette to the bottom of a test tube in which are about 5 cubic centimetres of the serum to be tested. In virtue of its specific gravity it collects below the serum and a sharp line of separation is visible. After a few seconds a green ring forms, the intensity of which affords a measure of the amount of bile pigment present. Another method is carried out as follows. The serum is precipitated by means of twice its volume of 95 per cent. alcohol and filtered. The filtrate is then tested by means of an alcoholic solution of iodine or of ferric chloride. The former is made by mixing together 500 cubic centimetres of 95 per cent. alcohol with the same quantity of dilute hydrochloric acid and adding 1·6 cubic centimetres of 10 per cent. tincture of iodine. The ferric chloride solution is made by adding 30 drops of a 50

[1] Wiener Klinische Wochenschrift, No. 25, 1908.

per cent. watery solution of ferric chloride to 150 cubic centimetres of 95 per cent. alcohol and the same quantity of dilute hydrochloric acid. The test consists in the appearance of a ring varying from green to blue or blue-violet at the line of junction of either reagent with the filtrate from the serum. A third method employed was that of Hedenius. This consists in adding twice its volume of 95 per cent. alcohol to about 5 cubic centimetres of the serum to be tested, and then heating to boiling after the addition of five drops of 20 per cent. hydrochloric acid. If bile pigment be present the yellow colour changes to green or bluish green. Normal human serums were tested by these three delicate methods, and they showed the presence of bile pigments. Professor Obermayer and Dr. Popper believe that the yellow colour of normal serum is in great part due to bilirubin. Horse serum is well known to be rich in bile pigment, and the same substance was demonstrable in the serum of the dog, the ox, the rabbit, and the fowl in greater or less quantity. On investigating the serum from cases of disease it was found that the pigment was increased in those conditions already mentioned in which increased bile pigment occurs in the urine. The serum of patients with nephritis, on the other hand, showed a diminution in the amount of bile pigment present amounting in some cases to almost complete absence. In some cases of chronic interstitial nephritis, however, especially in those with cardiac failure, bilirubin was present in normal amounts or even in slightly increased quantities. The method which is most available for quantitative estimation of bilirubin in serum is the test with alcoholic iodine or ferric chloride solution. Various dilutions with alcohol of the alcoholic filtrate from the serums are tested to determine the point at which a blue ring is no longer obtainable. In testing the serum from infective diseases, such as pneumonia, a bluish-red or violet colour often replaces the green or blue-green obtained in other conditions. This is in all probability due to the presence of urobilin or urobilinogen, which give a red colouration with iodine or on heating with hydrochloric acid and alcohol. The tests suggested by Schlesinger and Ehrlich for urobilin and urobilinogen were applied, and showed that normal serum contained only minute traces of these substances, whereas they were present in definite amounts in the serum of some cases with increased bile pigment, especially in pneumonia. Various serous fluids were tested for bile pigments, and without exception they were found to be present. A yellow colouration of the cerebro-spinal fluid is rare. It occurs after hæmorrhages and after inflammatory processes of long duration in the meninges. Bilirubin can also be demonstrated in the sputum of patients with pneumonia. Professor Obermayer and Dr. Popper suggest that the factor which all the conditions presenting increased bile pigment in the blood possess in common is the participation of the liver in the morbid process, whether by cirrhosis, congestion, or by acute degenerative processes, as in the acute infectious conditions.

THE MEDICAL LIBRARY ASSOCIATION.

A CONTRIBUTION to the pages of the *Library Association Record* by Mr. H. M. Barlow, assistant librarian, Royal College of Physicians of London, draws attention to the formation in England of an Association of Medical Librarians. The actual use to which many of our libraries are put convinces him that their resources are not universally known, and it is with the laudable intention of increasing the utility and number of medical libraries in this country and making known to the medical profession the resources which are available in medical literature that the Medical Library Association has been formed. In America, from small beginnings, without encouraging sympathy, and in spite of opposition and apathy, the Association of Medical Librarians is now firmly established and its future success assured, and there is reason to hope that similar success and usefulness will attend such an association in Great Britain, where, in proportion to population, there are more medical libraries than in the United States, or perhaps any country in the world. As long ago as 1836 THE LANCET drew attention to the regulations which then restricted the usefulness of the many valuable books contained in our medical libraries. It was in reviewing the "Manual of Select Medical Bibliography" by J. Forbes, M.D., F.R.S., and in glancing over the long list of valuable works registered by Dr. Forbes that we were impelled to lament the exclusion of the medical profession from the advantages of resort to their pages, and to regret the neglect of medical bibliography in England. We have the authority of Mr. Barlow for stating that many of our observations made in 1836 in regard to medical bibliography are applicable at the present time. Our object is to draw attention to the sorry state of medical bibliography in this country and the endeavours which are being made to remedy it. Therefore, we heartily commend the suggestions of Mr. Barlow—namely, that in the first place printed catalogues of the principal medical libraries of London are necessary in order that one library may know what another contains; and secondly, that each library should possess a catalogue of its own deficiencies in relation to the collective resources of the rest. A system of coöperation is needed whereby facilities for reference may be increased by the exchange of duplicates and the loan of books by one library to another. The work of preparing such a catalogue and organising coöperation might well fall within the scope of the Medical Library Association; and younger libraries, say those in course of formation in our colonies, would benefit by systematic stocktaking in this country, for to them all the surplus could be offered on generous terms.

THE SOCIETY OF APOTHECARIES.

THE Master (Mr. A. T. Norton) and Wardens (Mr. Arthur Long and Mr. Bramley Taylor) of the Worshipful Society of Apothecaries entertained a large company at dinner in the hall of the society on Nov. 22nd, the chief guests of the evening being the new Lord Mayor and Sheriffs. Amongst those supporting the chair were Sir Thomas Barlow, Sir Henry Morris, Sir David McVail, Sir F. H. Champneys, Sir Thomas Fraser, and Dr. Norman Moore. After the loyal toasts had been given and responded to, the Worshipful Master, in proposing that of "The Lord Mayor, Sheriffs, and Corporation of the City of London," pleaded for a State university, and said he thought that the present standard of the London University in regard to medical qualifications was too high. The Lord Mayor, in responding to this toast, referred to the advantages of the apprenticeship system, and thought it was doubtful whether funds would ever be available which would be sufficient to establish a State university. He disagreed with the Worshipful Master as to the standard of the London University being too high. In the matter of medicine he thought it was most important to make the qualifications worthy of the great profession. Sir Thomas Barlow, in responding to the toast of "The Royal Colleges of Physicians and Surgeons," proposed by the Senior Warden, refuted the view that the College of Physicians was a *passé* institution or an oligarchy, and pointed out the important work which the College did in the interests of its members and of the community. Their relations with the Society of Apothecaries were cordial, and he hoped to see the society more closely associated with the Colleges. Sir Henry Morris followed in a

similar vein, remarking that the Colleges, amongst other good work, endowed and financed research. The Lord Mayor, in proposing "The Health of the Worshipful Master," gave a brief history of the society, and he recounted the interesting fact that in its early days the society included in its livery grocers, who, however, objected to associating their business with drugs, and so they founded a company of their own. His lordship thought that much good could be done now if the business in drugs could be entirely dissociated from the grocer. The Worshipful Master replying, referred to the excellent laboratory of the society, in which drugs were chemically and physiologically standardised, adding that this work was far beyond British Pharmacopœia requirements. They hoped soon in regard to medicaments to throw off empiricism and to begin seriously to develop the mathematics of drugs. After the toast of "The Visitors" the company dispersed. The occasion was a most enjoyable one, the dinner was excellently served, and the choice of music and the rendering of it were in very good taste.

MEDICAL ORGANISATION IN SOUTH AFRICA.

WE took occasion, a couple of months since, to refer to this subject,[1] and are now glad to record the useful work that is being carried out by the official bodies charged with the supervision of matters concerning the medical profession in the several provinces. One of the most important of these from the point of view of the general public, quite as much as from that of the medical profession, is irregular practice by unqualified persons. In unsettled countries and communities on the borders of civilisation this is unavoidable: every pioneer and explorer should have some knowledge of medicine and surgery, in the first place for his own sake, and next, for the good of his neighbours and dependents. But as civilisation advances, the rough-and-ready, though in their proper place invaluable, methods of the untrained, and therefore "unqualified" practitioner, must give way. In Natal there appear to be native "medicine-men," licensed under the Native Code to practise amongst natives, but who also carry on practice amongst Europeans. The Natal Medical Council, in dealing with such a case, came to the conclusion in September last[2] that the only course to pursue would be to abolish entirely the granting of licences to these "medicine-men." Their knowledge is rudimentary and erroneous, and their methods are barbarous and superstitious, also quite inadequate, and often harmful. The mere fact of their holding licences implies the approval by Government of such practices, and retards progress in the native population generally, confirming them in their ignorance. Moreover, in no other province in South Africa are native medicine-men licensed by Government. We trust the Union Administration will endorse this view, but at the same time they must deal fairly with those who have been, so far, encouraged by the State. The alleged "covering" of an unqualified person was inquired into at the September meeting of the Medical Council of Cape Colony, together with such matters as non-notification of infectious disease and contravention of the Medical and Pharmacy Act, and the requisite action was taken. The Orange River Medical and Pharmacy Council dealt with the prevalence of syphilis amongst natives, and the conduct of the examination for licensing chemists and druggists. The discussion of such matters at monthly meetings of representative members of the profession possessing official status is a means of focussing expert knowledge and directly influencing administrative action that appears to be particularly valuable.

[1] THE LANCET, Sept. 17th, 1910, p. 897.
[2] Transvaal Medical Journal, September, 1910.

REPRESENTATION OF THE UNIVERSITY OF LONDON IN PARLIAMENT.

WE are informed that Sir Victor Horsley will stand in the Election immediately at hand as a candidate for the representation of the University of London. At a recent meeting of the executive of the Liberal Association Sir Victor Horsley was selected for nomination to a meeting of the association to be held on Monday next. We understand that he is being supported by a large number of graduates.

THE ETIOLOGY OF PSORIASIS.

FOR many years the cause of psoriasis has been a keenly debated subject amongst dermatologists. While many have inclined to the nervous theory of its origin and others have supported the idea that it is associated somehow with gout and rheumatism, there have always been a few who have been inclined to ascribe it to the action of a micro-organism. Lang in 1878 described a fungus, but few accepted it, and it is generally discredited now. From time to time other observers have seen cocci and bacilli in the lesions, but for the most part, if not entirely, these have been accidental contaminations. Yet the facts supporting the idea of a microbic origin of the disease have appeared so potent that many dermatologists have searched for some organism as the true cause of the disease. To the present issue of THE LANCET Dr. A. D. Serrell Cooke communicates a brief note on some researches which he has recently been making. He has investigated 20 cases of psoriasis and amongst many organisms present he has discovered a short thick bacillus in all the cases of the disease examined. It appears to have well-marked characteristics, and he is pursuing his investigations especially with regard to the question of the communicability of the disease and the effect of vaccine treatment. We look forward with interest to a fuller account of his investigations, and meanwhile judgment must be suspended as to the accuracy of his conclusions.

A WORKING PLAN OF CLINICAL MEDICAL TEACHING.

WE have received a pamphlet with the above title which is a reprint of an article published in the *Edinburgh Medical Journal* for October by Dr. William Russell. It describes the arrangements made in his wards for the clinical instruction of women students, for which purpose they are set apart. A plan has been mapped out so that the students attend for clinical instruction in medicine for two winter and for two or three summer sessions. The first class is taken during the summer session following the third winter, by which time the students have passed their examinations in anatomy and physiology and have attended a course of lectures on pathology. In this class, which meets three times a week, the instruction consists in observation, in the education of the senses for purposes of clinical examination, and in a study of the normal and of simple abnormal physical signs. Especial attention is given to practice in percussion and auscultation. In addition, two clinical lectures a week are given to this class, and they are occupied in the explanation of the phenomena observed in the practical class. Dr. Russell regards this elementary class as of such importance that he takes it himself and does not delegate it to an assistant. During the fourth winter session the students attend lectures on systematic medicine and work in the wards at case-taking. A clinic is held on three days a week, when selected cases are read, examined, and discussed. On two days a week a clinical

lecture is given on a case or group of cases or on some special subject. Fifth-winter students also attend these lectures, and in addition they have special clinics on one or two days. Senior students in their final summer term attend in the wards on three days a week for more advanced clinical teaching, and Dr. Russell suggests that if his plan were generally adopted, this term might with advantage be devoted to special subjects rather than to attendance in the general medical wards. Dr. Russell's scheme has the merits of being practical and of devoting sufficient attention to a subject which is often far from systematically taught. We are in full accord with his contentions that the first instruction in the observation and record of physical signs should be given by some one of considerable experience in teaching, and that normal, as well as abnormal, signs should be thoroughly mastered by the student. There can be no doubt that if some plan such as he outlines were generally adopted the subject of clinical medicine would prove more attractive to the student and would be more thoroughly taught than is often the case at present.

A NEW HUMAN TRYPANOSOME FROM RHODESIA.

WHILE examining the blood of a rat which had been artificially infected from a patient under treatment for sleeping sickness in the Royal Southern Hospital at Liverpool Dr. J. W. W. Stephens discovered that the trypanosome present in the rat showed certain peculiar features. These were investigated by him in association with Mr. H. D. Fantham and the result of their researches was communicated to the Royal Society at a recent meeting. A short *résumé* of the paper also appears in the current Twenty-first Bulletin of the Sleeping Sickness Bureau. The patient from whom the rat was inoculated was a European who had contracted sleeping sickness in North Eastern Rhodesia, where it may be mentioned the recognised transmitter of the disease, the glossina palpalis, has not been found. The case was also noteworthy inasmuch as it was in this patient that Major Ronald Ross and Dr. David Thomson demonstrated a regular periodical increase of the parasites, an account of which observation was published in the Nineteenth Bulletin of the Sleeping Sickness Bureau. The peculiar morphological forms of this trypanosome were not seen in the blood of the patient, in whom, however, trypanosomes were always very scanty, but they were observed in laboratory animals, including certain monkeys, rabbits, and guinea-pigs, as well as rats. The main peculiarity of the new trypanosome, to which attention is drawn, is that among the short or stumpy forms some have the nucleus at the posterior (non-flagellar) end. There are all transitions between forms in which the nucleus is in the middle to forms in which it is actually terminal and posterior to the blepharoplast (kinetonucleus). In rats infected with this strain a few long trypanosomes appear in the blood in about three days, while the stumpy forms with the nucleus posterior are seen about the fifth or sixth day. Many of the long forms have an elongated posterior end or snout; the strain could be distinguished by this feature. It was noted that pear-shaped or rounded forms with little or no flagellum are not uncommon in this Rhodesian strain. It is stated that the posterior nuclear forms were seen in rats infected from the patient before he was treated with drugs. It appears that the strain is somewhat more virulent in rats and guinea-pigs than the old laboratory strain of T. gambiense, and it is, moreover, resistant to atoxyl. The writers in their paper discuss two views: 1. The trypanosome described is a variety or "local race" of T. gambiense, due perhaps to some change of environment, and possibly associated with its transmission being effected by some species of glossina other than G. palpalis. The idea that it is merely a laboratory variation is rejected, since all known laboratory strains of T. gambiense are practically identical in morphology. 2. It is really a new species of trypanosome which produces sleeping sickness in man; this is the conclusion to which the writers incline, since the Rhodesian trypanosome differs from T. gambiense more than, for example, T. brucei does from T. evansi. Also the T. gambiense is believed to be transmitted solely by G. palpalis, which does not, however, exist in North Eastern Rhodesia; but even if it did there is still great probability that the parasite in question is a new species. The writers therefore propose to regard it as a new human trypanosome and to name it T. rhodesiense.

PUBLIC HEALTH IN CEYLON.

Sir Allan Perry, principal civil medical officer and inspector-general of hospitals, presents a report on Ceylon hospitals for 1909, which, he considers, shows some improvement over the previous year. The estimated population of the island was 4,082,935; the birth-rate, 36·7 per 1000, showed a decrease, and the death-rate, 30·3, showed a slight increase on the figures for 1908. On the whole the health statistics showed an improvement on the previous year; malarial fever was less, small-pox and cholera much less. Malaria does not occupy the important place in the vital statistics of Ceylon that it does in many provinces of India: the total number of cases treated in hospitals and dispensaries numbered 512,855; the deaths in hospitals numbered 612, and the total deaths registered as due to this cause 852. Efforts are being made to instruct the population in simple measures of fever prevention, and it may be hoped that the lectures to school teachers and others will in time lead to good results. Some improvement has already taken place in the sanitation of small towns, in the way of draining and filling up pools; but no large works have been undertaken, and Sir Allan Perry regrets that the suggestion for the formation of mosquito brigades has not been adopted. He considers that legislation is necessary to compel public bodies to take action, in carrying out "the ordinary simple means by which" malaria may be eradicated. The large majority of the people are apathetic; we presume this is due to ignorance, such as has been successfully overcome in many parts of India. Quinine is distributed free, and has been of marked benefit in places. A "spleen census" was taken towards the end of the year, 317,694 children under 15 years being examined; 20·81 per cent. were found to have spleens more or less enlarged; in 1908 the percentage was 34·05. Small-pox prevailed but slightly, only 62 deaths having occurred; 46 of these were in the Colombo Infectious Hospital, all among unvaccinated persons. Ankylostomiasis is showing a tendency to spread in the island; it is found chiefly among the South Indian coolies imported as estate labourers, and from them spreads among the indigenous population in the villages in the neighbourhood of the estates. 4896 cases were treated in hospital (compared with 4434 in 1908); the deaths numbered 1184. There is an immigration depôt at Ragama; during the year the dejecta of 864 arrivals from India were examined microscopically, and in 417 cases—i.e., 48 per cent. of the new arrivals—the ova of the parasite were detected. The disease being widespread on the neighbouring continent, the daily importation of infection carriers, the continued pollution of soil and water on estates, and the lack of efficient sanitary precautions against its spread, are subjects for grave consideration. On one group of estates it is noted that 568 persons out of a total labour force of 1416 were suffering from the disease. Unless stringent measures are taken it will spread throughout the colony. A Government despatch was

issued in February, 1909, pointing out the lines on which preventive measures should be taken; beta naphthol is the anthelmintic considered to be the most suitable for general use. In regard to general sanitation, the principal medical officer does not consider the state of Ceylon to be satisfactory; only in towns having municipalities and local boards is any attempt at sanitation made; in other places there are neither drains, refuse disposal, nor water-supply. In Colombo the water-supply is not sufficient, and an increase must shortly be provided. Good progress is, however, being made with the sewerage works designed by Mr. Mansergh. The health statistics of the Colombo municipality were favourable in 1909, the death-rate, 33·5 per 1000, being appreciably less than in 1908 (36·7), and slightly less than the decennial average (34·3). There was diminution in the mortality from diarrhœal diseases and fevers, and in the infantile mortality. On the other hand, pulmonary diseases caused the highest death-rate yet recorded (4·33). In regard to general measures of sanitation, such as provision of a pure drinking water (which is derived from an excellent source in the hills, 25 miles distant), supervision of milk and food-supplies, &c., the health officer, Dr. W. Marshall Philip, has the same difficulties to face as at home, but in a heightened degree; he has been successful in producing decided improvement. Milk adulteration appears to be practised extensively, one dairy alone having furnished 49 adulterated samples out of 66 taken for examination. A very large quantity of tinned milk is used for infant feeding, even amongst the native races, which is much to be regretted.

AT the meeting of the Medical Society of London to be held at 11, Chandos-street, Cavendish-square, W., on Monday, Nov. 28th, at 8.30 P.M., Dr. F. J. Goodhart will introduce a discussion on Dilatation of the Heart and Heart Strain. Sir R. Douglas Powell, Sir Lauder Brunton, Dr. Samuel West, Dr. W. Collier (Oxford), and Dr. Henry Davy (Exeter) have promised to take part in the discussion.

MOTORING NOTES.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

Concerning the Running of the 14-16 Darracq.

SINCE writing about this cheap and, I believe, reliable car, I have had a good many inquiries from medical men as to the suitability of these automobiles for professional use. Probably the following letter which I have received from Dr. W. W. Stainthorpe of Guisborough, Yorkshire, may be of interest to any thinking of buying one of these cars. Dr. Stainthorpe writes:—

It is no trouble to send you particulars of my 14-16 Darracq, of which I cannot speak too highly. I may tell you that for four years I ran an 8-h.p. De Dion without any trouble to speak of, so you will understand how careful I would be before putting into writing my experience of another make of car, as I consider that car one of the best of its size. Well, reverting to my original text, the following items may interest you and assist others to weigh in the balance my experience, should they anticipate the purchase of a 14-16 Darracq. I have now run my car 3150 miles upon all kinds of roads and by-lanes, in all weathers, night and day, without any involuntary stop. In doing so it has consumed 132 gallons of petrol (the miles per gallon would have been greater had I not used the car in the town to make frequent calls), and 16 gallons of lubricating oil, including a small quantity left in the tank and emptied out at the end of every 1000 miles, when the engine is washed out, and fresh oil put in. I have had two of the sparking plugs renewed, as they missed fire due to over-filling the oil tank, which caused them to become sooted, so that I still carry them as spares; the other two have not been touched. The front ungrooved Dunlops show little signs of wear; the two back grooved ones have just worn the grooves out, but should stand another 2000 miles. I have had two punctures from nails, the repairing of which cost 5*s*. No repairs to the car.

The Book of Bibendum.

The Michelin Tyre Company, Limited, of Sussex-place, London, have published a little book which deals with tyres, and which will be found of great assistance to all who use pneumatic tyres, for, as the author states on the first page,

> "He who to be an expert motorist aspires
> Must first learn all there is to know about his tyres."

Those who have not already a copy will be well advised to apply to the Michelin Company for one.

Loose Nuts, Bolts, and Pins.

No matter how carefully a car is put together, the constant vibration to which cars are subjected may occasionally cause the slackening or even the complete working out of some of these fastenings, with maybe serious consequences. It is well, therefore, to be constantly on the look-out for nuts that have worked loose or dropped out. Only recently I had a letter from a medical man who was put to the expense of a new crank and connecting-rod simply as a result of his not seeing that the split pin on one of the engine big bearings was in place. Constant inspections and trials with a spanner would in this case have saved a rather heavy repair bill. Another source of worry is overheating. A medical friend, who makes a great point of always keeping his car in perfect trim, recently had much trouble in this respect. The new aluminium paint with which he coated his engine would peel off, and, what was worse, the engine would get so hot that the mixture exploded prior to compression and there was great loss of power. The water-circulating pump worked well, neither ignition nor carburettor was at fault, and the compression was excellent, and yet the fault continued. By chance the cause was discovered. The back wheel brakes were operated by a cable, and the pins in the rocking piece had worn, with a result that occasionally, when the brakes were used, they did not disengage when the lever was brought back, and so the car was run with the brakes unknowingly on. The engine thus had an extra load and so became heated. Re-drilling the holes in the rocking piece and fitting new pins soon effected a remedy.

The Angle of the Steering Column.

Those who propose to be their own drivers should, when ordering a car, see that the angle of the steering column suits their height. I had a lesson recently which brought this fact forcibly home to me. A friend lately bought a landaulette with the idea of occasionally driving himself, and knowing my interest in motoring kindly asked me to drive the car home for him. The car was an excellent little landaulette, but the steering pillar was almost vertical, and as a result it was not quite a joy driving the car some 80 miles. In order to allow of more room in the rear the driving seat was brought forward, and thus the steering column was almost vertical. It permitted of a roomy body at the back, but it was the reverse of comfortable for the driver.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ANNUAL MEETING OF FELLOWS AND MEMBERS.

THE twenty-sixth annual meeting of the Fellows and Members of the Royal College of Surgeons of England was held on Nov. 17th.

Mr. BUTLIN, the President, was in the chair, and he commenced the proceedings by saying that he thought it would interest them to know that 3600 copies of the annual report of the Council had been supplied to Fellows and Members. He then laid the report before the meeting and proceeded to speak on several of the items contained in it. He referred at first to the resolutions carried at the last annual meeting, and explained that though it had been customary to send answers to the resolutions carried to the mover and seconder of each resolution, on this occasion the Council had departed from that practice. With regard to the second resolution which related to the necessity for amending the Midwives Act, he would refer the meeting to page 5 of the present report, in which there was printed a letter written by himself to the Privy Council pointing out the importance of the need for an amending Act, and urging that the onus of obtaining the fee should not be thrown upon the medical man. The reply received from the Privy Council was also to be found in the report. All were agreed that provision must be made for enabling the medical man to recover his fee, but great difference of opinion seemed to exist as to the most suitable public body for enforcing the fee. The amending Act made the boards of guardians responsible for the remuneration of medical men summoned on the advice of the midwife, but it was the opinion

of a large body of practitioners that the responsibility should be cast upon the local supervising authorities. With regard to the third resolution carried at the last annual meeting, which concerned the question of the union of the two Royal Colleges with the University of London, he referred them to page 10 of the present report, which contained an account of what had been done by the two Royal Colleges. As a commission was sitting to consider the question nothing more could at present be done. With regard to the first resolution, which urged the importance of the representation of Members on the Council, a special committee of the Council had been appointed; it thoroughly considered the matter and had reported to the Council against the suggested alteration, and the Council therefore had decided to take no steps in regard to the representation of Members on the Council. The question of the administration of anæsthetics had recently excited much attention, for with the law as it stood at present anyone might administer anæsthetics, and not long ago the College had been asked to take action in a case where a firm of dentists had employed their servant-maid as anæsthetist, but unfortunately the reply had to be given that in the present state of the law no one could interfere in the matter. Even the question of local anæsthetics was of great importance, especially since the introduction of spinal anæsthesia, which might be called a form of local anæsthesia. The matter was of great importance and some legislative action must be taken. He would next refer to the awarding of the honorary medal of the College; this had been given to Dr. Robert Fletcher of Washington in recognition of his valuable work in connexion with the index catalogue of the library of the Surgeon-General's Office, Washington. Dr. Fletcher was a Member of the College, and was a native of Bristol, though he had lived many years in the United States. He was pleased to be able to announce that the King, who had been made an honorary Fellow while he was Prince of Wales, had acceded to the request that he should continue to be an honorary Fellow of the College. The erection of the new Examination Hall would shortly begin, and a few days ago the College had accepted a tender for the building. In connexion with the Museum he would like to point out that the odontological collection of the Royal Society of Medicine had been entrusted to the College, and it had been fitted up there at some little expense. The College only acted as the guardians of the collection, but if at any time the Royal Society of Medicine decided to resume possession of it all the capital expenses of the College would have to be repaid. The collection was probably the finest odontological collection in the world, and he invited the Fellows and Members present to view it after the meeting. He would also refer to two other exhibits in the Museum; one was a mummy which was in possession of the College, which had been examined by Professor G. Elliot Smith, and as the result of his examination it seemed to be clear that this was the oldest mummy known in the world by at least a thousand years. Another item of importance was a cranium which was presented to the College by Mr. George Busk in 1868, and as it had come from Gibraltar it was generally known as the Gibraltar skull. This was perhaps the oldest known human skull, probably older than the Neanderthal skull.

The PRESIDENT then invited any questions in connexion with the Report.

Dr. S. C. LAWRENCE inquired how many women had been admitted Members of the College; the answer was "One." Inquiry was also made as to the obituary list of Members printed in the report, and it was explained that it could not be said they had all died during the past academical year, for occasionally some months elapsed after the death of the Member before it was known to the College.

Mr. DENNIS VINRACE expressed the hope that in future reports more details would be given as to the items of expenditure, for he found salaries and wages were grouped together and no information was given as to the separate items.

The PRESIDENT promised to consider the matter.

Mr. VINRACE further inquired as to the custom with regard to the removal of Members from the roll; he wished to know whether the Council accepted the decision of the General Medical Council, or whether it inquired into each case for itself? In reply, the PRESIDENT said that they inquired most carefully into every case and decided on its own merits, and occasionally it happened that though the name of a Member had been removed by the General Medical Council the Council of the Royal College of Surgeons had retained it on the Roll of Members.

In reply to a question as to the possibility of the restoration of any Member who had been removed, the PRESIDENT explained that they were always ready to consider applications for restoration, and sometimes they found themselves able to restore the names of former Members.

The President was then asked whether he was aware that some county councils were requiring the midwives who called in medical men to their assistance to report on the time of attendance of the medical man and to express an opinion as to the manner in which he did his work. The PRESIDENT replied that he was not aware of this, and he agreed that such a condition of affairs could not be allowed to continue.

No more questions being put, the PRESIDENT called upon Mr. JOSEPH SMITH to propose the motion standing in his name. It was as follows:—

That this twenty-sixth annual meeting of the Fellows and Members again affirms the desirability of admitting Members to direct representation on the Council, which as now constituted does not represent the whole corporation, and that it does so in order that the constitution of the Council of the Royal College of Surgeons of England shall be in keeping with modern ideas of true representation.

Mr. Smith said that for 25 years he had brought forward resolutions of the same purpose as this. He had been asked what the resolution meant, and he would simply say that it claimed for the 15,000 Members of the College some right in the management of its affairs. At present they were utterly ignored. The condition of affairs was an absolute anomaly at the present day, and it must come to an end sooner or later. He appealed once more to the Council to grant to the large body of Members some representation on the Council.

Dr. LAWRENCE seconded the motion, and pointed out that in many respects the actions of the Council were not in accord with the wishes of the Members. Although the Council had taken the vote of the Members as to the desirability of admitting women to the examinations of the College, and although the majority of the Members had voted against it, yet the Council had disregarded the opinion of the Members and had admitted women to examination. With what result? That only one woman Member had been admitted. By the charter of 1800 the property of the College was vested in the Members and nothing could deprive them of their rights. If the Council persisted in its present attitude the Association of Members would adopt a more militant course.

Mr. F. W. COLLINGWOOD supported the motion and complained that the present constitution of the College was mediæval in character. The principal of representation was to be seen everywhere at the present day and in this College only was it absent. He asked the Council for the reasons why Members should not have some control of the affairs of the College.

Sir VICTOR HORSLEY asked the President to let the meeting have the report of the committee of the Council on the question of the representation of Members.

The PRESIDENT stated, in reply, that in the annual report for 1907 were to be found all the reasons *pro* and *con.* in connexion with the question of the representation of Members.

Sir VICTOR HORSLEY pointed out that he was not asking for this report of 1907, but for the report presented to the Council by its own committee this year.

The PRESIDENT said that all the arguments were contained in the report he had mentioned.

Sir HENRY MORRIS explained that though the whole subject of the representation of the Members was considered, the chief matter before the committee was the question whether any new arguments had arisen either in favour of or against the representation of the Members, and the committee had had to reply that no fresh matter had been brought forward.

In reply to a Member asking whether the reference to the committee of the Council had been limited in any way, the PRESIDENT denied that there had been any limitation, and stated that the mode of considering the question had been left to the committee.

Dr. W. G. DICKINSON read an extract from a speech by the President on behalf of the direct representation of medical

men on the General Medical Council, and he claimed that all the arguments brought forward in that speech applied with equal force to the claims of the Members of the Royal College of Surgeons to representation on the Council.

A Member urged that a deputation should wait upon the Council to discuss the matter, and Mr. J. BRINDLEY JAMES seconded the suggestion.

The PRESIDENT then put Mr. Smith's motion to the meeting. A large number of those present voted in its favour and none voted against it, and the President declared the motion carried.

With a vote of thanks to the President for taking the chair at the meeting the proceedings came to an end.

SANITATION IN INDIA.

(*Concluded from p. 1513.*)

Lunatic Asylums.

THE report on lunatic asylums under the Government of Bombay for 1909, rendered by Surgeon-General H. W. Stevenson, I.M.S., refers to the condition of 1355 lunatics, of whom 339 had been admitted during the year; the daily average strength was 988·6, a higher figure than in the two previous years; the daily sick-rate was 23·9 per 1000. The condition of the asylums is stated to be one of steady, though not very rapid, improvement; a good deal has been done towards the betterment of the buildings, but there is great need for a higher and more intelligent class of men and women for attendants. Cholera broke out in two asylums, Naupada and Poona; at the former place there were 41 attacks and 34 deaths. Major S. Evans considered that the infection was most probably brought into the asylums by means of vegetables from the kitchen garden. There are few instances of disease outbreaks proved to be due to vegetables or fruit infected by the application of human excreta to the soil as a manurial enrichment, and it is entirely wrong to apply such excreta to soil growing fruit or vegetables that may be eaten raw. It is to be hoped that proper supervision will be henceforth exercised so as to prevent such an obviously dangerous and filthy proceeding in a state institution under European medical control. At the Poona Asylum 5 cases of cholera occurred in July with 3 deaths; they were sporadic cases, and no cause appears to have been detected. Of the admissions 32·7 per cent. were discharged cured and 35·7 per cent. died.

In Bengal the total asylum population amounted to 1062, of whom 178 had been admitted during the year; the daily average strength was 886·5, an increase on the three previous years. The daily sick-rate was 115·7, a slight increase on the two previous years; but the death-rate, 5·3 per cent. of strength, was very low; 35·2 per cent. of the admissions were discharged cured and 24 per cent. died.

In Eastern Bengal and Assam the total asylum population was 651, of whom 153 had been admitted during the year. The daily average strength was 510·6, an increase on the two previous years, and the daily average sick-rate was 34. The death-rate was high, 13·5 per cent. of strength, the chief items being bowel complaints and tubercle. One death, mentioned by Colonel R. N. Campbell, Inspector-General of Hospitals, was of very unusual occurrence—viz., suffocation from the presence of a round worm in the larynx. A curious manner of escape from the asylum was devised by a female criminal lunatic—namely, through the hole below the seat of a latrine, which she managed to widen. Of the cases admitted 25·4 per cent. were discharged cured and 41·8 per cent. died.

Colonel T. Bate reports that the Punjab asylum at Lahore has been enlarged. This improvement affords relief from overcrowding and facilitates classification of patients; it also includes special provision for the isolation of tubercle cases, which is very necessary on account of the peculiar liability of the insane to contract this disease. The total asylum population (for the province) amounted to 837, of whom 188 had been admitted during the year; the daily average strength was 632·8. The daily average sick-rate was 75, an increase on the two previous years; 48·2 per cent. of the total admissions were cured and 42·7 per cent. died.

The Surgeon-General with the Madras Government reports that the population of the asylums is steadily increasing, there having been an advance of 24 per cent. since 1900; the increase in females has been double that in males. The total asylum population in 1909 has been 881, of whom 203 were admitted during the year. The daily average strength was 677. The average sick numbered 67·86, an increase on the two previous years; 39·6 per cent. of the admissions were cured and 21·1 per cent. died.

In all these Indian asylums the majority of cases were of maniacal insanity, the proportion varying from 50·8 in Bombay to 63 per cent. in Eastern Bengal. The melancholic cases varied between 7·7 per cent. in Madras and 27 per cent. in Bombay.

Vaccination.

The reports on vaccination for the three Presidency provinces have not yet come to hand: in the remaining six provinces the results may be considered satisfactory, bearing in mind the difficulties that have to be contended with—amongst them the "conscientious objector" has not yet to be included. Nearly the whole of the work is done by the vaccination department; in addition some is carried out by the staff of the dispensaries. The percentage of success obtained on primary vaccination was always high, varying from 95·27 in Burma to 99·23 in the Central Provinces. (The case success with the Local Government Board's glycerinated calf-lymph in 1909 was 99·4 per cent.) On revaccination the successful percentage varied between 61·58 in Burma and 82·76 in the North-West Frontier Province. The proportion of persons per 1000 of the population that are successfully vaccinated varies between 28·30 in the United Provinces and 47·36 in the North-West Frontier Province, where the number vaccinated showed an increase of 20·82 per cent. over the previous year. It is stated that many trans-frontier people brought their children to be vaccinated, and that many petitions for the services of the Government vaccinator were received. When it is remembered that this province was only constituted ten years ago, and that the inhabitants are wild and warlike tribes only just entering on civilisation, great credit must be given to the local medical administration for bringing about such a satisfactory state of things. Glycerinated calf-lymph is used universally, being in all cases prepared under Government supervision. In the United Provinces there was a falling-off in vaccination, owing to the great prevalence of malaria, with heavy infant mortality, the majority of the surviving children being also in an unfit condition to be vaccinated. Lieutenant-Colonel J. C. Robertson, I.M.S., Sanitary Commissioner, mentions that thermos flasks had been used for packing lymph tubes during the hot weather, but they had to be discarded owing to breakages. In the Punjab vaccination was carried out under difficulties, owing to the ravages of plague. In the Central Provinces also a considerable falling-off in vaccination is reported, due to the low birth-rate and the presence of plague.

Chemical Examinations.

The reports of the chemical examiners for Bombay, Bengal, the United Provinces, Central Provinces, and North-West Frontier Province indicate that a large amount of work is done of a necessary character; partly medico-legal (cases of suspected poisoning, human and animal), partly of water samples, and partly of revenue articles, such as wine, spirits, and petroleum. In the Bengal laboratory 2405 medico-legal cases were investigated in 1909, 775 being examinations of human viscera for the presence of suspected poison, mostly opium; poison was detected in 310 instances. In the United Provinces Dr. E. H. Hankin investigated 1448 medico-legal cases, the total number of articles analysed being 2938; he also examined and reported on 2072 samples bacteriologically, most of them being samples of water; "microbes having the character of cholera vibrios" were detected in 17 specimens of water; in no case was a microbe resembling enteric detected. B. coli communis was found in 9 out of 145 water specimens. With such an immense amount of routine work to get through it is obvious that these officers have little leisure for any original research, either chemical or bacteriological, however well they may be aided by intelligent subordinates. The Bengal examiner does not appear to have dealt with bacteriology during the past year, but the range of his investigations (in addition to water analysis and medico-legal matters) extended from the examination of milk and tinned meats to "the reasons for certain percussion-caps hanging fire," and "whether a specimen of fluid can be described as eau-de-cologne"; and the number of analyses performed reached a total of 6646. At one

time the Agra laboratory was the source from which emanated many original ideas and practical improvements in chemical and bacteriological methods. Possibly official annual reports are not the medium chosen by which to communicate scientific work to the outside world.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 77 of the largest English towns 7700 births and 5040 deaths were registered during the week ending Nov. 19th. The annual rate of mortality in these towns, which had increased from 13·0 to 14·8 per 1000 in the four preceding weeks, further rose to 15·5 in the week under notice. During the first seven weeks of the current quarter the death-rate in these towns averaged 13·6 per 1000. In London the death-rate during the same period, calculated on the probably over-estimated population, was equal to 13·7 per 1000. Among the 77 towns the death-rates last week ranged from 6·2 in Reading and in King's Norton, 6·3 in Hornsey, 7·4 in Walthamstow, and 7·7 in East Ham, to 20·6 in Aston Manor, 21·8 in Grimsby, 21·9 in Middlesbrough, and 22·3 in Burnley. The 5040 deaths from all causes registered in the 77 towns last week showed an increase of 239 upon the number in the previous week, and included 403 which were referred to the principal epidemic diseases, against 424, 361, and 392 in the three preceding weeks; of these 403 deaths, 164 resulted from measles, 75 from diarrhœa, 55 from diphtheria, 55 from whooping-cough, 33 from scarlet fever, and 21 from enteric fever, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the 77 towns last week was equal to 1·2 per 1000, against 1·3, 1·1, and 1·2 in the three preceding weeks. No death from any of these diseases was registered last week in Croydon, Derby, Southampton, Norwich, or in 12 other smaller towns; the annual rates therefrom ranged upwards to 2·6 in Coventry, 2·8 in Brighton and in Burton-on-Trent, 3·1 in Rotherham, and 5·0 in Plymouth. The fatal cases of measles in the 77 towns, which had been 107, 101, and 136 in the three preceding weeks, further rose to 164 last week, and exceeded the number in any week of the current year; they caused the highest annual death-rates of 1·4 in Portsmouth and in Grimsby, 1·6 in Rotherham, 1·8 in Tynemouth, 2·4 in Brighton, and 4·1 in Plymouth. The deaths attributed to diarrhœa, which had declined in the 11 preceding weeks from 527 to 110, further fell last week to 75, and included 23 in London, 5 in Sheffield, 4 in Birmingham, and 3 in Liverpool and in Manchester. The deaths referred to diphtheria, which had steadily increased from 34 to 54 in the five preceding weeks, were 55 last week, and were proportionately most fatal in Bolton, Barrow-in-Furness, and Burton-on-Trent. The 55 fatal cases of whooping-cough exceeded by 18 the low number in the previous week; 7 were registered in London, 5 in Liverpool, and 5 in Manchester. The deaths referred to scarlet fever, which had been 30 and 23 in the two preceding weeks, rose last week to 33, of which 8 occurred in London, 6 in Liverpool, and 3 in Smethwick. The 21 fatal cases of enteric fever showed a decline of 11 from the number in the previous week, and included 4 in London, 3 in Manchester, and 2 in Hull. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily increased in the 13 preceding weeks from 1428 to 1882, had declined to 1843 on Saturday last; 180 new cases of this disease were admitted to these hospitals during last week, against 188 and 239 in the two previous weeks. The 1537 deaths from all causes in London last week included 396 which were referred to pneumonia and other diseases of the respiratory system, against 234, 246, and 319 in the three preceding weeks, and exceeded by 82 the corrected average number in the corresponding week of the five years 1905–09. The causes of 39, or 0·8 per cent., of the deaths registered during last week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, and in 54 other smaller towns; the 39 uncertified causes of death in the 77 towns last week included 8 in Birmingham, 6 in Liverpool, and 4 in Sheffield.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 779 births and 588 deaths were registered during the week ending Nov. 19th. The annual rate of mortality in these towns, which had been equal to 13·6 and 13·3 per 1000 in the two preceding weeks, rose to 16·2 in the week under notice. During the first seven weeks of the current quarter the death-rate in these eight towns averaged 13·7 per 1000, and was 0·1 per 1000 above the mean rate during the same period in the 77 largest English towns. The annual death-rates in the eight Scotch towns last week ranged from 9·8 and 12·6 in Perth and Leith, to 19·5 in Paisley and 21·3 in Greenock. The 588 deaths from all causes in the eight towns last week showed an increase of 104 upon the number in the previous week, and included 61 which were referred to the principal epidemic diseases, against 56 and 47 in the two preceding weeks; of these 61 deaths, 24 resulted from diarrhœa, 13 from whooping-cough, 8 from diphtheria, 7 from "fever," 5 from scarlet fever, and 4 from measles, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the eight towns last week was equal to 1·7 per 1000, and was 0·5 per 1000 above the rate from the same diseases in the 77 English towns. The deaths attributed to diarrhœa in the Scotch towns, which had declined in the seven preceding weeks from 51 to 17, were 21 last week, and included 10 in Glasgow and 5 in Edinburgh. The fatal cases of whooping-cough, which had been 7 in each of the two preceding weeks, rose to 13 last week, and of these 12 were registered in Glasgow. The 8 deaths from diphtheria showed a decline from the numbers in the two preceding weeks, and included 6 in Glasgow. The 7 fatal cases of "fever" showed an increase upon the numbers in recent weeks; of these 5, including 1 from cerebro-spinal meningitis, were registered in Glasgow and 2 in Edinburgh. Of the 5 deaths from scarlet fever, 3 were recorded in Glasgow and 2 in Edinburgh. The 4 fatal cases of measles occurred in Edinburgh. The deaths referred to diseases of the respiratory system in the eight towns, which had been 84 and 65 in the two preceding weeks, rose to 121 last week, but were 74 below the number in the corresponding week of last year. The causes of 28, or 4·8 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death last week did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 541 births and 396 deaths were registered during the week ending Nov. 19th. The mean annual rate of mortality in these towns, which had been equal to 16·8, 15·1, and 16·2 per 1000 in the three preceding weeks, rose to 17·9 in the week under notice. During the first seven weeks of the current quarter the annual death-rate in these Irish towns averaged 16·6 per 1000; the mean rate during the same period did not exceed 13·6 in the 77 largest English towns or 13·7 in the eight Scotch towns. The annual death-rate during last week was equal to 20·3 in Dublin, 17·6 in Belfast, 14·4 in Cork, 18·0 in Londonderry, 5·5 in Limerick, and 25·3 in Waterford; the mean annual death-rate last week in the 16 smallest of these Irish towns was equal to 16·7 per 1000. The 396 deaths from all causes in the 22 town districts last week showed an increase of 38 upon the number in the previous week, and included 18 which were referred to the principal epidemic diseases, against 33, 28, and 27 in the three preceding weeks; these 18 deaths were equal to an annual rate of 0·8 per 1000, or 0·4 below the rate from the same diseases last week in the 77 towns, the rate in the eight Scotch towns being 1·7. The 18 deaths from these epidemic diseases in the Irish towns last week included 6 from diarrhœa, 4 from diphtheria, 3 from scarlet fever, 3 from whooping-cough, 1 from measles, and 1 from enteric fever, but not one from small-pox. The deaths attributed to diarrhœa, which had been 14 and 11 in the two preceding weeks, further declined to 6 last week, of which 3 occurred in Belfast and 2 in Dublin. Of the 4 fatal cases of diphtheria 3 were registered in Dublin and 1 in Belfast. Two of the 3 fatal cases of scarlet fever were recorded in Dublin

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING OCTOBER, 1910.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1910.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.		
LONDON	4,872,702	—	997	566	—	212	—	25	406	10	2216	5·9	—	112	14	33	31	—	42	—	234	466	1·2	4496	12·6
West Districts.																									
Paddington	153,004	—	19	14	—	5	—	4	5	—	47	4·0	—	2	—	1	—	—	—	—	9	12	1·0	130	11·9
Kensington	184,635	—	30	20	—	2	—	1	19	—	72	5·1	—	3	—	1	2	—	—	—	6	12	0·8	159	12·1
Hammersmith	127,413	—	30	16	—	7	—	—	9	—	62	6·3	—	5	1	2	1	—	1	—	10	20	2·0	114	12·2
Fulham	181,282	—	41	24	—	4	—	2	9	2	82	5·9	—	1	—	1	—	—	—	—	10	12	0·9	125	9·4
Chelsea	75,457	—	14	17	—	—	—	—	—	—	31	5·4	—	—	—	—	—	—	—	—	2	2	0·3	72	12·8
City of Westminster	167,233	—	22	10	—	3	—	—	5	—	40	3·1	—	1	—	2	1	—	1	—	4	9	0·7	130	11·3
North Districts.																									
St. Marylebone	125,195	—	8	15	—	2	—	—	11	—	36	3·7	—	1	—	1	1	—	1	—	4	8	0·8	105	11·6
Hampstead	96,729	—	12	6	—	4	—	—	3	—	25	3·4	—	1	1	—	3	—	—	—	1	6	0·8	63	9·7
St. Pancras	237,792	—	59	23	—	14	—	1	19	—	116	6·4	—	6	1	—	—	—	2	—	15	24	1·3	237	13·6
Islington	353,356	—	70	55	—	13	—	4	18	3	163	6·0	—	17	2	3	1	—	3	—	16	42	1·5	357	13·7
Stoke Newington	54,838	—	7	1	—	1	—	—	3	—	12	2·9	—	—	—	—	—	—	1	—	1	2	0·5	40	9·9
Hackney	239,979	—	46	15	—	16	—	1	32	—	110	6·0	—	—	—	1	—	—	4	—	10	15	0·8	192	10·8
Central Districts.																									
Holborn	53,142	—	5	7	—	8	—	—	2	—	22	5·4	—	2	—	—	—	—	—	—	1	3	0·7	48	12·7
Finsbury	94,578	—	12	13	—	6	—	1	19	1	51	7·0	—	7	—	—	1	—	1	—	11	20	2·8	120	17·1
City of London	17,132	—	2	5	—	—	—	—	1	—	8	6·1	—	—	—	—	—	—	—	—	—	—	—	24	20·1
East Districts.																									
Shoreditch	114,387	—	17	18	—	8	—	2	12	1	58	6·6	—	2	—	1	2	—	5	—	6	16	1·8	152	18·1
Bethnal Green	131,579	—	23	14	—	22	—	—	18	—	77	7·6	—	—	—	—	4	—	5	—	6	15	1·5	152	15·3
Stepney	314,379	—	68	26	—	17	—	3	43	—	157	6·5	—	3	2	1	1	—	4	—	21	32	1·3	325	14·1
Poplar	172,432	—	45	14	—	11	—	1	26	—	97	7·3	—	1	1	1	1	—	3	—	9	16	1·2	208	16·2
South Districts.																									
Southwark	211,832	—	43	33	—	8	—	2	31	—	117	7·2	—	22	—	7	2	—	1	—	13	45	2·8	267	17·1
Bermondsey	127,238	—	23	26	—	10	—	—	15	—	74	7·6	—	16	—	1	2	—	1	—	21	41	4·2	182	19·1
Lambeth	327,074	—	80	51	—	18	—	—	20	1	170	6·8	—	10	3	1	2	—	4	—	15	35	1·4	280	11·6
Battersea	188,222	—	73	23	—	8	—	—	17	—	121	8·4	—	1	1	1	3	—	2	—	8	16	1·1	156	11·6
Wandsworth	305,838	—	68	38	—	6	—	—	14	1	127	5·4	—	2	—	2	1	—	—	—	8	13	0·6	203	9·2
Camberwell	286,058	—	42	22	—	7	—	1	26	—	98	4·5	—	5	—	3	1	—	1	—	8	18	0·8	263	12·4
Deptford	119,642	—	29	17	—	—	—	—	14	—	60	6·5	—	3	1	2	—	—	—	—	4	10	1·1	122	14·0
Greenwich	112,935	—	20	18	—	2	—	1	3	—	44	5·1	—	—	—	—	—	—	—	—	7	7	0·8	88	10·4
Lewisham	164,899	—	35	16	—	10	—	1	9	—	71	5·6	—	—	—	1	2	—	2	—	3	8	0·6	95	7·8
Woolwich	135,422	—	54	9	—	—	—	—	3	1	67	6·4	—	1	1	—	—	—	—	—	5	7	0·7	87	9·0
Port of London	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

† The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

and 1 in Londonderry; and of the 3 deaths from whooping-cough 2 occurred in Dublin and 1 in Londonderry. The fatal case of measles was recorded in Dublin and that of enteric fever in Belfast. The deaths in the 22 towns last week included 80 which were referred to pneumonia and other diseases of the respiratory system, against 60 and 88 in the two preceding weeks. The causes of 9, or 2·3 per cent., of the deaths registered last week in the Irish towns were not certified; in the 77 English towns the proportion of uncertified deaths last week did not exceed 0·8 per cent., while in the eight Scotch towns it was equal to 4·8 per cent.

VITAL STATISTICS OF LONDON DURING OCTOBER, 1910.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious disease, it appears that the number of persons reported to be suffering from each of the nine diseases specified in the table was equal to an annual rate of 5·9 per 1000 of the population, estimated at 4,872,702 persons in the middle of the year. In the three preceding months the rates were 4·1, 3·9, and 5·3 per 1000 respectively. The lowest rates last month were recorded in Paddington, the City of Westminster, Hampstead, St. Marylebone, and Stoke Newington; and the highest rates in Finsbury, Bethnal Green, Poplar, Southwark, Bermondsey, and Battersea. Scarlet fever again showed a considerably increased prevalence last month; among the various metropolitan boroughs this disease was proportionally most prevalent in Hammersmith, St. Pancras, Poplar, Lambeth, Battersea, Deptford, and Woolwich. The Metropolitan Asylums Hospitals contained 1825 scarlet fever patients at the end of last month, against 1530, 1439, and 1630 at the end of the three preceding months; the weekly admissions averaged 229, against 190, 160, and 207 in the three preceding months. The prevalence of diphtheria also showed a further considerable increase last month; this disease was proportionally most prevalent in Chelsea, Islington, the City of London, Shoreditch, Southwark, Bermondsey, Lambeth, and Greenwich. There were 852 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 580 and 746 at the end of the two preceding months; the weekly admissions averaged 120, against 76 and 108 in the two preceding months. The number of enteric fever cases notified during the month showed a slight diminution from the exceptionally high number in the previous month; the greatest proportional prevalence of this disease was recorded in Hackney, Holborn, Shoreditch, Bethnal Green, Poplar, Bermondsey, and Lewisham. The Metropolitan Asylums Hospitals contained 169 enteric fever patients at the end of last month, against 58 and 141 at the end of the two preceding months; the weekly admissions averaged 25, against 6, 11, and 32 in the three preceding months. Erysipelas was proportionally most prevalent last month in Hackney, Finsbury, Bethnal Green, Stepney, Poplar, Southwark, and Bermondsey. The 25 cases of puerperal fever notified during the month included 4 in Paddington, 4 in Islington, 3 in Stepney, and 2 each in Fulham, Shoreditch, and Southwark. Of the 10 cases notified as cerebro-spinal meningitis 3 belonged to Islington and 2 to Fulham.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates are further corrected for variations in the sex and age constitution of the populations. During the four weeks ending Oct. 29th the deaths of 4496 London residents were registered, equal to a corrected annual rate of 12·6 per 1000; in the three preceding months the rates were 10·4, 10·3, and 11·9 per 1000 respectively. The death-rates last month ranged from 7·8 in Lewisham, 9·0 in Woolwich, 9·2 in Wandsworth, 9·4 in Fulham, 9·7 in Hampstead, and 9·9 in Stoke Newington to 16·2 in Poplar, 17·1 in Finsbury and in Southwark, 18·1 in Shoreditch, 19·1 in Bermondsey, and 20·1 in the City of London. The 4496 deaths from all causes included 466 which were referred to the principal infectious diseases; of these, 112 resulted from measles, 14 from scarlet fever, 33 from diphtheria, 31 from whooping-cough, 42 from enteric fever, and 234 from diarrhœa, but not any from small-pox, from typhus, or from ill-defined pyrexia. No death from any of these infectious diseases was recorded last month in the City of London; among the metropolitan boroughs the lowest rates from these diseases were recorded in Chelsea, Stoke Newington, Wandsworth, and Lewisham; and the highest rates in Hammersmith, Finsbury, Shoreditch, Southwark, and Bermondsey. The 112 deaths from measles were 64 in excess of the corrected average number in the corresponding period of the five years 1905–09; this disease was proportionally most fatal in Hammersmith, Islington, Finsbury, Southwark, and Bermondsey. The 14 deaths from scarlet fever showed a decline of 37 from the corrected average number; of these 14 deaths, 3 belonged to Lambeth, 2 to Islington, and 2 to Stepney. The 33 fatal cases of diphtheria were 15 fewer than the corrected average number, and included 7 in Southwark, 3 in Islington, 3 in Camberwell, and 2 each in Hammersmith, the City of Westminster, Wandsworth, and Deptford. The 31 deaths from whooping-cough showed a decline of 18 from the corrected average number; of these 31 deaths, 4 belonged to Bethnal Green, 3 to Hampstead, and 3 to Battersea. The 42 fatal cases of enteric fever were 11 in excess of the corrected average, and included 5 in Shoreditch, 5 in Bethnal Green, 4 in Hackney, 4 in Stepney, 4 in Lambeth, 3 in Islington, and 3 in Poplar. The 234 deaths from diarrhœa showed a decline of 43 from the corrected average number; the greatest proportional mortality from this cause was recorded in Paddington, Hammersmith, St. Pancras, Finsbury, Stepney, Southwark, Bermondsey, and Greenwich. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 7·4 per cent. below the average.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff-Surgeon: F. F. Mahon to the *Topaze*. Surgeons: R. M. Riggall to the *Vernon;* H. E. Perkins, S. W. Grimwade, B. Taylor, C. F. Willies, A. Scott, G. J. Carr, E. C. Holton, H. H. Ormsby, A. E. P. Cheeseman, J. G. Danson, and E. M. Browne have been entered in the Royal Navy as Acting Surgeons, and appointed to the *Victory*, additional, for course of instruction at Haslar Hospital.

ROYAL ARMY MEDICAL CORPS.

Colonel S. C. B. Robinson, principal medical officer of the Jubbulpore and Jhansi Brigades, has been appointed Principal Medical Officer of the First (Peshawar) Division. Colonel R. Porter, principal medical officer of the Western Command, has been appointed Principal Medical Officer of Malta, in succession to Colonel W. G. Macpherson, C.M.G. Lieutenant-Colonel W. G. Birrell, late senior medical officer at Mauritius, has been posted to the Eastern Command and appointed (temporarily) in charge of the Royal Herbert Hospital at Woolwich. Lieutenant-Colonel S. C. Philson has been appointed to command the station hospital at Bareilly. Lieutenant-Colonel C. T. Blackwell, from Woolwich, has embarked for a tour of service in India. Lieutenant-Colonel G. D. Hunter, D.S.O., commanding the Royal Army Medical Corps Depôt and School of Instruction at Aldershot, has been selected for the increased rate of pay under Article 317 of the Royal Warrant. Major G. B. Stanistreet has been transferred from the Southern Command for duty in the London District. Major J. B. Anderson, from the London District, has been posted to the Southern Command and appointed Embarkation Medical Officer at Southampton. Major J. V. Forrest has arrived home on leave from Egypt. Major C. K. Morgan has been transferred from Dundalk to Aldershot and appointed Instructor at the Royal Army Medical Corps Depôt and School of Instruction in succession to Major C. C. Fleming, D.S.O., whose tenure of appointment has expired. Major W. Hallaran, from the London District, has embarked for a tour of service in India. Major L. Addams-Williams has taken up duty at Tidworth Park. Major F. S. Penny, from Chatham, has been posted to Hong-Kong. Major G. B. Carter has been transferred from Dublin to Kildare. Captain

P. A. Lloyd-Jones has arrived home for duty from Malta. Captain H. E. Gotelee has been transferred to the home establishment from Ceylon. Captain G. A. D. Harvey, from Egypt, has been posted to the Eastern Command. Captain A. O. B. Wroughton, from Dover, has taken up duty at Canterbury. Captain L. F. F. Winslow has been transferred from Lichfield to Bradford. Captain W. MacD. MacDowall has joined at Devonport from duty at Willsworthy camp. Captain R. M. Ranking has taken up his appointment as Specialist in Advanced Operative Surgery to the Cork District. An exchange on the roster for service abroad has been approved by the War Office between Captain D. Ahern and Captain J. H. Gurley. Captain B. A. Craig has arrived home on leave from Hong-Kong. The following officers, on conclusion of their course of instruction for promotion at the Royal Army Medical College, have been posted as follows: Captain R. Storrs to Portsmouth; Captain F. A. H. Clarke and Captain R. Rutherford to Edinburgh; Captain G. A. K. H. Reed and Captain P. G. Easton to Aldershot; Captain H. V. Bagshawe to Leicester; Captain F. W. W. Dawson to Belfast; Captain J. E H. Gatt to Cosham; and Captain G. F. Rugg and Captain C. Ryley to Chatham. Captain W. D. C. Kelly has been appointed Specialist in Advanced Operative Surgery to the Dublin District in succession to Captain J. W. West, who has embarked for a tour of foreign service in India.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel J. W. Rodgers has been appointed to officiate as Principal Medical Officer of the Sirhind and Jullundur Brigades during the absence on eight months' combined leave of Colonel A. M. Crofts, C.I.E. Lieutenant-Colonel L. F. Childe, Bombay, has received an extension of his leave home from India. Major F. N. Windsor, chemical examiner to the Burmese Government at Rangoon, has been appointed to officiate as Chemical Examiner at Calcutta during the absence of Major J. A. Black. Major J. N. Macleod, on return from leave, has been appointed Civil Surgeon at Quetta under the Foreign Department in succession to Major F. A. Smith, proceeding home on leave. Major T. W. Irvine, on return from leave, has been appointed Civil Surgeon at Peshawar, vice Captain N. M. Wilson. Major V. B. Bennett, Madras, has received an extension of his leave. The services of Captain W. J. Collinson have been replaced by the Home Department at the disposal of the Commander-in-Chief. Captain A. W. C. Young has been reverted to military duty. Captain G. W. Maconachie has arrived home on leave. Captain E. J. C. McDonald, on return from privilege leave, has been posted as District Plague Medical Officer at Sialkot. The services of Captain A. S. H. Peebles, Officiating Superintendent of the Punjab Lunatic Asylum at Lahore, have been replaced at the disposal of the Government of India on relief by Major G. F. W. Ewens. Captain J. H. Murray and Captain W. M. Houston have arrived home on leave from the Bombay Presidency. Captain T. G. F. Paterson has been appointed to the medical charge of the 32nd Sikhs and 28th Punjabis. Captain G. G. Jolly has been granted eight months' combined and study leave home from India. Captain W. J. Powell has been appointed to officiate as Superintendent of the Central Jail at Jubbulpore, Central Provinces. Captain W. Tarr has been reverted to civil duty, and appointed to charge of the Nimar District Jail during the absence on special duty of Major W. H. Kenrick. Captain G. McG. Millar has been granted six months' leave on medical certificate. Captain W. F. Finlayson has taken over the duties of Superintendent of the Multan Central Jail. Captain A. D. Stewart has been appointed to the substantive Medical Charge of the Second Battalion of the 10th Gurkha Rifles. Lieutenant D. H. Rai has been appointed to officiate as Civil Surgeon of Jacobabad. Lieutenant S. C. Chuckerbutty has been appointed to the Plague Department in Burma.

TERRITORIAL FORCE.

Royal Army Medical Corps.

North Midland Mounted Brigade Field Ambulance, Royal Army Medical Corps: Lieutenant William M. Hewetson is seconded under the conditions of paragraph 114 of the Territorial Force Regulations (dated Sept. 25th, 1910).

3rd Highland Field Ambulance, Royal Army Medical Corps: William Latto Robertson to be Lieutenant (dated Oct. 19th, 1910).

2nd Home Counties Field Ambulance, Royal Army Medical Corps: Edwin Augustus Houchin to be Lieutenant (to be supernumerary) (dated Oct. 12th, 1910).

Attached to Units other than Medical Units.—Lieutenant-William Duncan to be Captain (dated Sept. 26th, 1910). Lieutenant William M. Fergusson to be Captain (dated Oct. 15th, 1910).

For attachment to Units other than Medical Units.—Major Thomas Holt from the 2nd East Lancashire Field Ambulance, Royal Army Medical Corps, to be Major (dated Nov. 19th, 1910). Allan Freer Rutherford (late Captain, 4th Battalion, The King's Own (Royal Lancaster Regiment)), to be Captain (dated Nov. 12th, 1910).

DEATHS IN THE SERVICES.

Surgeon-Major-General James Sinclair, K.H.P., A.M.S. (retired), at Belfast, on Nov. 21st. He entered the army as assistant-surgeon in 1853, became surgeon in 1862, surgeon-major in 1868, deputy-surgeon-general in 1876, and surgeon-major-general in 1882, and retired ten years later. He served in the Abyssinian campaign of 1867–68 as surgeon of the 33rd Regiment, and was present at the storming and capture of Magdala. He acted as principal medical officer of a division of British troops in Abyssinia in the early part of 1868 (mentioned in despatches and promoted surgeon-major "for valuable services rendered during the campaign" (medal)). He also served in the Boer war of 1881.

Brigade-Surgeon-Lieutenant-Colonel John Ross Murray, A.M.S. (retired), on Nov. 17th. He entered the service in 1861 as assistant-surgeon, became surgeon in 1873, and reached the rank of brigade-surgeon-lieutenant-colonel in 1889. He retired three years later. He served in the New Zealand war of 1861, including the actions of Pataelakaurie, Mahoeten, and Matarikoriko (medal).

Staff-Surgeon James George Watt, R.N., who was drowned off Portland on Nov. 6th, was returning from leave during a strong south-westerly gale when the whaleboat which was conveying him to the gunboat *Gossamer* capsized. The body was washed ashore at Weymouth on Nov. 17th. Staff-Surgeon Watt entered the Royal Navy as surgeon in 1898 and was promoted staff-surgeon in 1906. He was attached to the *King Alfred*, the flagship of Rear-Admiral A. A. Galloway, commanding the Devonport Subdivision of the Home Fleet, but recently he had been temporarily transferred to the *Gossamer*.

SOLDIERS' TEETH.

The Army Council has issued a circular memorandum regarding the supply of artificial teeth to non-commissioned officers with long service. In future non-commissioned officers who have completed 21 years' service, and who are entitled to take their discharge after three months' notice, are *not* to be supplied with artificial teeth at the public expense. With regard to other cases, the general rule to be followed is that artificial teeth should *only* be supplied at the public expense when it is considered to be in the interests of the service to retain men whose service with the colours would otherwise be terminated on account of medical unfitness.

Correspondence.

"Audi alteram partem."

UNDERGRADUATES AND BEHAVIOUR.

To the Editor of THE LANCET.

SIR,—Your leading article this week on "Undergraduates and Behaviour" is certainly timely. The scenes now so prevalent at various university graduations are becoming little less than a scandal, and the good-humoured chaff and exuberance of the past on these occasions now gives way to boisterous hooliganism and indecent bad manners. The disturbances you report at Bristol, Edinburgh, and Cork are matched by the proceedings which took place at Glasgow this week, which were so gross as to be hardly credible.

In Liverpool the authorities manage these matters in an excellent way, and exert a happy control, with adequate liveliness and amusement to all concerned, while due dignity is preserved throughout the ceremony. It is high time that the Senates took adequate precautions to secure order, or agreed to prohibit the admission of the undergraduates to these functions. Something must be done, for these improprieties are becoming altogether too gross, and setting, as I believe, a very bad example to

the strata of society in these centres of learning who are as yet uninfluenced by what we ought to regard as the results of some degree of academic culture. It used to be thought that "manners made men." I much fear that discipline everywhere is sadly relaxed in these days, and the proofs of this are not far to seek.—I am, Sir, yours faithfully,

A MEMBER OF THE COURT OF THE UNIVERSITY OF LIVERPOOL.

London, Nov. 19th, 1910.

WHO IS HE?

To the Editor of THE LANCET.

SIR,—The Liverpool Medical Institution have in their possession a life-sized bust, a photograph of which is given below. The subject of the bust is unknown to them and they have been unable to identify it. It may be a replica of a marble bust in one of the Royal Colleges or hospitals. The

council of the institution will be very grateful to any of your readers who may be able to give them information towards establishing its identity.

I am, Sir, yours faithfully,

THOMAS BUSHBY.

Liverpool, Nov. 19th, 1910.

ERGOT AND THE PATELLAR REFLEX.

To the Editor of THE LANCET.

SIR,—Incidentally while seeing a patient a few weeks ago it occurred to me that the condition of the knee-jerk should be examined. The proceeding elicited the interest of an immediate relation who happened to be present and who asked if her knee-jerk also might be tested. Strange to say, it was in her case absolutely absent, though, as far as I knew, there had been no illness with nervous symptoms. But the history of the case brought to light the fact that this lady had been taking rather large doses of ergot for several years regularly for uterine fibromata and hæmorrhage.

I wondered if the ergot might have had any effect in this particular way and therefore wrote to Sir Lauder Brunton, who most kindly replied and referred me to Kobert's "Lehrbuch der Intoxikationen," Stuttgart, Encke, 1893, p. 440, where this passage occurs: "Die Symptome der Mutterkorntabes sind von denen der gewöhnlichen Tabes nicht wesentlich verschieden; der patellarreflex kann sehr zeitig verloren gehen." From this one concludes that ergot, when it causes nervous troubles, does sometimes bring about a series of symptoms closely resembling tabes dorsalis and that a very early sign of such a condition is the loss of the patellar reflex. Dr. J. Dixon Mann in his "Forensic Medicine and Toxicology," 1908, p. 668, states with regard to chronic ergot symptoms: "Psychical disorders, as hallucinations, delirium, mania, mental enfeebleness with stupor, and exceptionally, indications of tabes—lightning pains, girdle sensation, staggering gait, and unsteadiness in the erect posture with the eyes closed, have occurred. Tuczek found sclerosis of the posterior columns of the cord, implicating the root zones as in tabes." I presume that chronic troubles in connexion with ergot, whether they affect the nervous system or whether they be of a gangrenous nature, are primarily due to the blood-supply to the parts being cut down by resulting constriction of the blood-vessels.

I am, Sir, yours faithfully,

J. BIRT.

Belgrave-road, S.W., Nov. 15th, 1910.

INDEMNITY INSURANCE.

To the Editor of THE LANCET.

SIR,—The attention of the council of the Medical Defence Union has been called to the issue by the "Car and General Insurance Corporation, Limited," of a circular *re* benefits under an "Eclectic Policy," in which the name of the Medical Defence Union is used without our authority or consent and without any previous knowledge on our part that it was intended so to be used. I am directed to state for the benefit of members of the medical profession that the Medical Defence Union has no connexion in any way with the above company, and that it has not entered into any agreement with it whatever in respect of any such "indemnity policy," and that the only company authorised to use the name of the union in respect of any "indemnity policy" is the Yorkshire Insurance Company, Limited, Bank Buildings, Princes-street, E.C.

I am, Sir, yours faithfully,

A. G. BATEMAN,
General Secretary.

Nov. 18th, 1910.

To the Editor of THE LANCET.

SIR,—It has been brought to the notice of the council of the London and Counties Medical Protection Society, Limited, that indemnity insurance policies are being issued to members of the society (in respect of damages and costs of the other side in actions undertaken by this society) by the Car and General Insurance Corporation, Limited, and I am directed to inform members of the London and Counties Medical Protection Society that the Car and General Insurance Corporation has received no authority from this society, and that this society accepts no responsibility in the matter.

I am, Sir, yours faithfully,

HUGH WOODS.

31, Craven-street, Strand, London, W.C., Nov. 22nd, 1910.

CONTINUOUS PROCTOCLYSIS.

To the Editor of THE LANCET.

SIR,—Referring to a communication from Dr. H. W. P. Young concerning the use of the "Thermos" flask for continuous proctoclysis, I may mention that Messrs. de Luca and Co. (French Flint Glass Company), 6 and 7, Long-lane, E.C., manufacture for me an apparatus of a similar nature for use with a "Thermos" bottle. As this apparatus has kindly been shown in many hospitals in London by Dr. H. G. Mackenzie of Wimbledon, I have no doubt its merits and construtcion are fairly well known. Probably by ordering it through a wholesale chemist and sundryman any reader can obtain the apparatus in its perfect form as invented by me. In several medical papers last November notices of my having used the "Thermos" bottle were published, and the experimental part of the work, in order to bring this to perfection, has been carried on by me for over two years.

I am, Sir, yours faithfully,

LENNOX WAINWRIGHT.

Folkestone, Nov. 18th, 1910.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Medical Students' Hostel.

IT is proposed to establish a hostel for senior medical students in the immediate neighbourhood of the Manchester Royal Infirmary. "The object of the scheme is to enable students to gain experience in the management of accident and urgency cases, and in the observation of acute disease." This scheme, if carried out, as it will be, will give resident students opportunities that those living at a distance can never have. In Edinburgh, and in connexion with some of the London hospitals, such institutions have been successful and, it is said, self-supporting. The hostel will not interfere with the residential halls now existing, as it is only intended for medical students during the final period of their studentship. Such a hostel will, from its proximity to the hospital, provide opportunities for obtaining practical knowledge which will be available for students as they enter professional life, either as resident medical officers or assistants to private practitioners, or even if they venture forth at once into practice for themselves. It is proposed to start the hostel on a modest scale, providing for ten students at a weekly charge of 25*s.* each inclusive, and to give it a trial for three years. It will afford opportunities to students who cannot obtain resident appointments—for appointments are few and students are many—to get a much more practical knowledge of their work than if their hospital experience were limited, or nearly so, to the walk round the wards with the physician or surgeon in attendance. The scheme has the cordial support of numbers of influential people both in and out of the profession, and should be sure of success.

Typhoid Fever at Eccles.

A serious outbreak of enteric fever has occurred at Eccles, where up to last night over 90 cases had been reported. The parish church school has been closed for a fortnight, "there being 27 cases and over 100 contact exclusions." At the meeting of the education committee last night Dr. J. Orr remarked that the epidemic had assumed large proportions, but he was glad to say "the schools had been found not to be a source of infection, neither had anything been found wrong with the sanitary arrangements so far."

Surgical Aid Society.

The Manchester Surgical Aid Society held its annual meeting on Nov. 17th, the Lord Mayor (Mr. Charles Behrens) occupying the chair. Though very unobtrusive, the society does most valuable work among the poor, not only in relieving suffering but in helping discharged patients to help themselves. Last year 204 women, 138 men, and 99 children had been assisted in various ways. Appliances range from artificial limbs to belts, bandages, elastic stockings, surgical boots, leg irons, trusses, spinal supports, water-beds, and air-cushions. It may be mentioned that patients, with the help of friends, contributed £98 towards their cost. Still, as with so many charitable efforts, expenditure has exceeded income by nearly £35, though, notwithstanding the large amount of work done, the total expenditure was only £408. This society is indeed a necessary supplement and complement of hospital work, and Professor W. Thorburn was very emphatic as to the need there was for supplying surgical appliances to a great many poor patients, saying that surgery would be worse than useless if it had not the assistance of nurses and of the instrument maker. He thought that Manchester did fairly well by the hospitals and nurses, but that the citizens might do a little more for the society.

Anti-tuberculosis Fight.

It is encouraging to see that the struggle for the extermination of all the forms of tuberculosis is extending, and a step in advance was taken at Bolton on Saturday last. In connexion with the Bolton Guild of Help and the National Association for the Prevention of Consumption, a "tuberculosis exhibition" was opened by the Earl of Derby, in the Bolton Coöperative Hall. A special danger in manufacturing towns is that, working in the heated atmosphere of the mills, the operatives are hyper-sensitive to cold and chills, and so their rooms and cottages become stuffy and unhealthy from the closing, as far as possible, of every opening for ventilation. A similar state of things no doubt accounts to a large extent for the fact that Wales suffers, in proportion, more than any other part of the country from this disease. The air outside is fresh and pure, but inside the cottages it is too often fœtid and sickening.

Bolton Infirmary.

A King Edward memorial gift of £1000 has just been received by the treasurer of the Bolton Infirmary, being the fourth gift of a like amount, while several smaller sums have been sent.

Nov. 22nd.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Bristol Health Committee.

Mr. Colston Wintle, L.R.C.P. Lond., M.R.C.S. Eng., has been re-elected chairman of the health committee of the Bristol city council.

Bristol General Hospital.

The treasurer of the Bristol General Hospital has received £5000 from Mrs. W. Proctor Baker. This is the second moiety of the £10,000 promised to the institution by that lady in memory of her late husband, Mr. W. Proctor Baker, who was for many years president of the charity.

The late Dr. C. W. Belfield.

Dr. Charles Wooliscroft Belfield died recently at Bristol. The deceased was formerly a student at the Bristol Medical School, where he obtained the Sanders scholarship for surgery and medicine, and the Guthrie scholarship for medicine. He qualified M.R.C.S. in 1874, and in 1875 took the L.R.C.P. of Edinburgh. In 1884 he graduated M.D. of Vienna University. For many years Dr. Belfield had a large practice in Bristol, but a few years ago his health completely broke down, and he was forced to relinquish his practice. He was 58 years of age at the time of his death and unmarried. Dr. Belfield bequeathed £5000 to the funds of the Bristol General Hospital and £100 each to the Bristol Royal Infirmary and the Bristol Eye Hospital.

The Gloucestershire Memorial to the late King.

At a large and representative meeting, held at Gloucester on Nov. 12th, it was decided that as a memorial to the late King, a fund, to be called the "King Edward VII. Memorial Fund," should be raised in Gloucestershire, for the promotion of nursing in the cities, towns, and villages of that county.

The Cornish Memorial to the late King.

At a meeting held in Truro last week, under the presidency of the Earl of Mount Edgcumbe, it was decided to invite subscriptions for a "Cornwall King Edward VII. Memorial Fund." It is proposed to place a commemorative tablet in Truro Cathedral, and to invest the fund, applying the income thereof to any hospital, infirmary, sanatorium, or nursing association working in Cornwall as may be determined.

Gloucester Medical Charities.

The treasurers of the Gloucestershire Royal Infirmary and the Gloucester Children's Hospital have each received £5000 from the estate of the late Alderman George Peters, a former mayor of that city.

Nov. 22nd.

WALES.

(FROM OUR OWN CORRESPONDENT.)

Death of Mr. George Arthur Brown, M.R.C.S., L.S.A.

THE sudden death of Mr. George Arthur Brown of Tredegar, while paying a professional visit to a patient on Nov. 17th, has caused profound sorrow, not only among the inhabitants of the immediate district in which he practised, but to the entire medical profession in Monmouthshire, for he was one of the oldest and best known practitioners in the county. He received his medical education at King's College, London, and after obtaining the diplomas of the Royal College of Surgeons and the Society of Apothecaries in 1865 was appointed house surgeon to the Sheffield General Infirmary, a post which he held for three years. He then came to Tredegar

as an assistant colliery surgeon, subsequently becoming chief surgeon, and retaining the position until the day of his death. He was certifying factory surgeon for the district, and district and workhouse medical officer of the Bedwellty union. As medical officer of health for the Tredegar urban district he was fearless in pointing out the sanitary needs of the district, and after agitating for many years for the establishment of a cottage hospital was finally successful in his endeavours, when in 1904 a well-equipped building with accommodation for 11 patients was opened by Lord Tredegar. He was on the commission of the peace for Monmouthshire and was at one time a member of the county council. He leaves a widow, one daughter, and two sons. One of his sons was associated with him in practice.

British Medical Temperance Association.

An address was given to the members of the Cardiff branch of the British Medical Temperance Association on Nov. 18th by Professor G. Sims Woodhead, who dealt with the relation of medical men to the alcohol question. He expressed the definite opinion that alcohol played an important part in determining disease, causing accidents and generally in regulating the number of patients who found their way to a hospital. He was convinced that alcohol was more prominently concerned than any other factor in degenerating diseases. While it attacked every tissue of the body, it attacked those of the highest development much more rapidly and with much more certainty than those of the lower. If alcohol could be replaced in medical practice by anything else he urged the necessity of refraining from using it, and if a medical man came to the conclusion that nothing else could be used it should be administered altogether as a drug and in definitely measured quantities.

Radnorshire Medical Officer of Health.

The Radnorshire county council has elected Dr. Laurence W. Pole county medical officer of health and school medical officer for the county. The combined salary of the two appointments is £300 per annum, with an allowance of £50 per annum for travelling expenses.

Gift of Sewage Works.

The entire cost of sewage works and a sewerage system for the colliery village of Seven Sisters in the Neath rural district has been defrayed by Mr. E. Evans Bevan, who is the owner of the collieries. The present population is about 2000, but the scheme provides for a considerable extension of the village.

Nov. 22nd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Glasgow and West of Scotland Coöperation of Trained Nurses.

THE eighteenth annual report of this institution affords very interesting and instructive reading. The coöperation was the outcome of the rapidly increasing demands made by the public of the district for the services of fully trained nurses. At the same time the advantages for the nurses on the staff were to secure regular employment, adequate remuneration, and a central home. There are at present 195 nurses on the staff. The number of cases attended during last year was 2112, and the amount earned by the nurses was £12,580. Since the establishment in 1894 22,175 cases have been nursed and £132,455 have been earned. In the early years of the association 10 per cent. was contributed by the nurses to the association and this was afterwards reduced to 7½ per cent. Two years ago the scale of percentages was revised, and nurses now joining pay 10 per cent. for the first two years, and after the first two years 7½ per cent. Nurses who have been seven years in the coöperation pay 5 per cent. The association owns a house at Gourock, which is used as a residence for those nurses requiring a holiday. It was found that as the association became older the demands made by nurses for help during sickness steadily increased. A sick fund was formed and has now been put on a satisfactory basis. The capital account of this fund now stands at £3685. To this fund all nurses (with the exception of a few who are already members of the Royal National Fund) contribute £1 per annum. These contributions, along with the interest from investments and subscriptions from friends, have enabled the necessary payments to be made and a balance to be carried forward. Altogether the affairs of the association seem to be in a very flourishing condition, and it apparently fulfils in every way the purpose for which it was inaugurated.

Death of Dr. Thomas Lapraik.

In the person of Dr. Thomas Lapraik, who died last week, one of the oldest medical practitioners of Glasgow has passed away. A member of an old Glasgow family, he was born in 1835. He was educated at the Hutcheson School and Anderson's College, and finally graduated M.D. of Glasgow University in 1859. In 1873 he became a Fellow of the Faculty of Physicians and Surgeons of Glasgow, and for several years he was a member of its council. In addition to his large family practice Dr. Lapraik found time to devote himself to the advancement of medical education and to the welfare of several public institutions. For several years he was on the governing body of the Western Infirmary, Anderson's College Medical School, Lenzie Convalescent Home, and the Lock Hospital. He was also a manager of the Royal (Glasgow) Asylum at Gartnavel and of the Maternity Hospital, while for over 40 years he was physician to the Royal Glasgow Asylum for the Blind. Dr. Lapraik also served on the old city parochial board before its union in 1898 with the barony parochial board to form the Glasgow parish council. For some years he acted as convener of the medical committee, and during his period of office he secured many reforms in the arrangements for the nursing of patients in the hospital wards of the poorhouse. Outside of his medical work Dr. Lapraik was perhaps best known as chairman of the governors of the Glasgow Athenæum. The period of his chairmanship was perhaps the most critical in the history of the Athenæum, as it was during that time that the reconstruction scheme and the new constitution which placed the institution upon a permanent basis were carried through. On his retirement from the chairmanship his valuable services were recognised by the presentation of his portrait, a replica of which hangs in the reading-room of the institution. Dr. Lapraik is survived by his wife and a family of three sons and one daughter.

Reopening of Dundee Sanatorium.

Five young children from the Dundee Royal Infirmary were sent to the sanatorium at Auchterhouse last week. This fact was reported to the directors of the infirmary at their customary meeting, when it was also intimated that the 30 cots reserved for young children were now nearly all ready, and that a second contingent would likely be sent out soon.

Teachers' Protest against Medical Inspection.

At a meeting of the Deeside branch of the Educational Institute held at Banchory on Nov. 12th, the secretary read correspondence from the Garioch branch regarding medical inspection of school children. During the discussion which followed a good deal of feeling was shown regarding the amount of work demanded from Aberdeenshire teachers, all of which the medical inspector is doing in Kincardineshire. One Aberdeenshire teacher was reported to have flatly refused to perform the clerical work for which the medical officer was paid, with the result that the scholars had not been examined. It was resolved to have a representative meeting for all the branches in order to discuss the matter.

Medical Inspection of School Children in Caithness.

At a meeting held in Wick on Nov. 12th the secondary education committee of the county of Caithness again discussed the question of medical inspection of school children. Proposals for coöperation with Sutherlandshire had previously fallen through, and a scheme was put forward to appoint a medical inspector for Caithness alone at a salary of £300 per annum, the total cost for the first year to be £555. Mr. Robertson, chief inspector of schools, in pointing out that no provision was made in the scheme for coöperation with the county medical officer of health or for nurses, suggested that the scheme should be forwarded to the department for advice in certain local difficulties. This it was decided to do.

Death of Dr. Falconer Murison.

On Nov. 16th the funeral of Dr. John Falconer Murison took place at Cathcart. Dr. Murison graduated M.B., C.M., with first-class honours, at Aberdeen University

in 1875, taking his M.D. 20 years later. In his early professional career he was surgeon on board the Polar exploration vessel *Victory*. Dr. Murison then took up general practice at Walls, Shetland. Once he nearly lost his life through being attacked by enteric fever, a virulent epidemic of which he was fighting. His devotion won him the gratitude of a large number of the inhabitants of Shetland, among whom he was always welcomed on his visits to the island in later years.

Nov. 22nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Maintenance of Lunatics.

THE failure of the Treasury to pay the usual capitation grants for the maintenance of lunatics has naturally caused much anxiety throughout the country. As recorded in THE LANCET of Oct. 29th (p. 1313), an influential deputation, representing the various local authorities, waited on Mr. Birrell a few weeks ago to press the matter on the attention of the Government. In reply, the Chief Secretary asked for suggestions how to deal with the lunacy problem as a whole. At a conference in the Dublin city hall last week of representatives of the Irish county and borough councils, the Lord Mayor of Dublin presiding, certain resolutions were passed, and a deputation was appointed to convey to Mr. Birrell the views of the conference upon the questions dealt with. In the meantime, in the House of Commons Mr. Birrell, when questioned on the subject by Captain Craig, declared himself unable to make any promise of a minimum capitation grant, while Mr. Lloyd George informed Mr. Lonsdale that the question would be considered in connexion with the general problem of local and imperial taxation with which the Government was pledged to deal at the earliest opportunity.

Question of Suicidal Ward in Richmond Asylum.

A suicide having occurred some weeks ago in the Richmond Lunatic Asylum, the Inspectors of Lunatics made certain suggestions as to exercising greater care with regard to patients known to have suicidal tendencies. The most important of these suggestions was that a special "suicidal" ward should be established. In a special report to his committee of management, the resident medical superintendent of the asylum, Mr. J. O'C. Donelan, argued strongly against such a plan. He points out that the accumulation together of a number of acute melancholic patients would militate against their recovery. He also objects to giving written instructions on special points to attendants, as it tends to limit their attention to such points. Mr. Donelan in his management of the asylum follows the same principles as his predecessor and former chief, Dr. Conolly Norman.

Clinical Teaching in Dublin.

In the many discussions on medical education which have taken place in Dublin in the last few years there has been evident a certain discrepancy between the aims of the clinical teachers and those of the teachers of science. Some of the clinical teachers have been inclined to suspect a disposition on the part of their colleagues in the schools to trespass on the time set apart for hospital attendance. In Dublin clinical instruction begins each day at 9, and lasts till 11 or later. There has always, therefore, been an understanding that formal lectures in the schools should not begin earlier than noon. Breaches have been made in this understanding of late years, and in spite of assurances given by the school authorities to the hospitals two years ago, certain of the professors continue to lecture at hours which render regular hospital attendance impossible. The clinical authorities now threaten to invoke the assistance of the General Medical Council, but it is doubtful whether that body has power to interfere. The matter should be capable of ready settlement.

The Belfast Medical Students' Association.

At the inaugural meeting of the present session, held on Nov. 15th, the incoming President, Dr. W. W. D. Thomson, delivered an address on "The Country Doctor," and Professor J. A. Lindsay delivered an address on the Prospect before the Medical Student To-day, which has already been published in your columns.

Ulster Medical Society.

The annual dinner of the Ulster Medical Society took place in the Medical Institute, Belfast, on Nov. 18th. Dr. J. S. Morrow, the senior vice-president, in the absence through ill health of the president, occupied the chair. The chairman proposed "The King" and "The Lord Lieutenant and Prosperity to Ireland," to which the Lord Mayor of Belfast replied. Sir John Byers proposed "The Guests," to which His Honour the Recorder, Judge McIlroy, K.C., the Vice-Chancellor of the Queen's University of Belfast, and the President of the Ulster branch of the British Medical Association, Dr. W. Calwell, responded. Professor T. Sinclair gave the last toast—the health of the chairman, to which Dr. Morrow replied. Good musical selections were rendered during the evening.

Public Health in Belfast.

The Belfast corporation is promoting an omnibus Health Bill, and has given notice that in the ensuing session it will introduce the Bill. Among the clauses are a number of very important ones dealing with public health and sanitary provisions; some to obtain better control of women practising midwifery in the city of Belfast, others to confer further powers on the corporation with respect to meat inspection and for the better regulation of slaughter-houses, and for the seizure of tuberculous carcasses of meat.

Local Government Board Inspector.

Dr. Brian O'Brien has been appointed Local Government Board medical inspector in place of Dr. C. J. Clibborn, who shortly retires under the 65 years age limit. For Dr. O'Brien's posts in Belfast—divisional surgeonship of the constabulary, surgeonship to the Queen-street Children's Hospital, and medical attendant to Guinness's employees—there is a vigorous contest amongst the younger practitioners.

Surgeon-Major-General James Sinclair, M.D. Edin., Honorary Physician to H.M. the King.

On Monday, Nov. 21st, Surgeon-Major-General James Sinclair, M.D., a distinguished officer in the Army Medical Staff Corps, died at his residence, Cliftonville, Belfast, from bronchitis and heart failure at the advanced age of 79 years. Throughout his lengthened career in the army he was held in the highest esteem by all ranks, while in civilian life he was greatly liked for his social qualities. The funeral, with military honours, took place on Wednesday, Nov. 23rd.

Nov. 23rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Disorderly Behaviour of Medical Students.

DISTURBANCES similar to those of last year have occurred during the anatomical lectures of Professor Nicolas in the Paris Faculty of Medicine and have been carried so far that the professor was unable to make himself heard. An official notice has therefore been displayed on the walls of the buildings stating that the Dean of the Faculty of Medicine was making a final appeal to the students who have created disturbances in this lecture-room since the reopening of the classes, and that he was at the same time giving them a final warning. The dean assured the students that those of them who wished to work would be enabled to do so, that the authority of the professors would be fully maintained, and that he would take all the steps necessary for having offenders dealt with by the University Council. This notice had the effect of immediately putting an end to the disturbances, and M. Nicolas is now able to lecture without interruption.

The Dietetic and Physical Treatment of Epilepsy.

At a meeting of the Therapeutical Society held on Nov. 9th M. Deschamps described the dietetic and physical treatment of epilepsy. He said that since the time when auto-intoxication came to be regarded as a factor in the causation of epilepsy it had been recognised that bromides were not a panacea for the disease, that dietetic measures for the counteraction of auto-intoxication were valuable, and that an efficient action of the digestive organs was not less important. A further improvement was to supplement dietetic treatment by galvanisation and faradisation of the abdominal walls and to give baths of running water gradually cooled.

Action for Damages against a Medical Man.

Some months ago a married woman brought an action against Dr. Doyen, claiming 30,000 francs damages on account of an operation for spasmodic torticollis which he had performed on her gratuitously. The court having decided against her, she lodged an appeal, and when this was heard on Nov. 16th her counsel raised objections against the medical examination of the patient already made by three experts who had reported that she was recovéred. He asked that there should be a fresh examination by other experts, but the court refused this request, and upheld the decision arrived at in the previous trial.

The Depopulation of France.

At a meeting of the Société de l'Internat, held on Oct. 27th, M. Jayle, after describing the progressive diminution of the French population from the eighteenth century to the present day, said that the chief causes of it were the constant care bestowed on persons suffering from physical defects, together with systematic inattention to the interests of those who were healthy. Children of good constitution did not receive the same care and protection as sickly ones did, and the result was racial deterioration with a diminution in the number of children. Next in order of causation were certain social or industrial advantages which childless persons had over parents. Children were considered as a burden to be avoided; persons who had none were to this extent better able to engage in the struggle for existence, and obtained good situations more easily than heads of families did. A third cause of depopulation was the high mortality of the children of the poorer classes. M. Jayle considered that the best means of remedying these evils would be the imposition of a tax which he called the *impôt du sang transmis*. The effect of this would be that every man in fairly comfortable circumstances must, if he had not got three children, pay a yearly sum equivalent to the maintenance of one or more children in the class of society to which he belonged. A State institution for the assistance of families would have the duty of dealing with the funds raised in this way; the greater part of them would be distributed to poor families having three or more children, and the remainder would be applied for the benefit of various organisations for the protection of children. Another recommendation was that childless persons, who might on an average amount to one-fourth or one-fifth of the number of parents, should not be permitted to take more than one-fourth or one-fifth of the situations which were open to be filled.

The Rise of the Seine.

The river Seine has risen still further this week, but on Nov. 20th its level remained stationary or even fell a little. It was indeed high time, for notwithstanding all the measures of precaution that have been hastily taken, the flood water has done immense damage in the *banlieue*. Near the Austerlitz railway station the water has by degrees reached the line to Orleans. Thick walls which were built for the purpose are keeping back the rush of water, but there is more leakage than the pumps can remove. The water is steadily rising in the basement of the Palais de Justice, so that to get to the heating apparatus the attendants have to crawl along gangways almost touching the ceilings.

Nov. 21st.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Paying Wards in Public Hospitals.

As already mentioned in these columns, a proposal was recently made in the town council to the effect that paying wards should be instituted in the municipal hospitals. The matter was then referred to a commission of the council, and according to the daily newspapers this commission has adopted the proposal and recommended that 7 marks 50 pfennigs (= 7*s*. 6*d*.) should be charged daily for each patient—1*s*. 6*d*. of this sum to be given to the physician or surgeon of the hospital in charge of the patient and the remainder being applied in repayment of the hospital expenditure on the case. For operations the surgeons should be entitled to charge a fee not exceeding 100 marks (£5). The medical officers of the municipal hospitals, on being heard before the commission, unanimously declined to accept this curious scheme, which they said would be prejudicial to the interests of the profession. It was probable that in the event of such wards being established in the municipal hospitals many patients of the middle, and even of the wealthy, classes would seek admission, knowing that they would be attended or even operated upon by leading physicians and surgeons of Berlin at ridiculously low fees, and in this way a good deal of practice among the middle classes would be withdrawn from the Berlin practitioners. It is not very likely that the proposals will be ultimately adopted by the municipal authorities.

Cases and Specimens shown before the Berlin Medical Society.

At a recent meeting of the Berlin Medical Society Professor Bockenheimer reported a case of extra-uterine pregnancy in which the patient complained of severe pains in the anus. On examination a small piece of a pointed bone was found penetrating the anterior wall of the lower part of the rectum, and a large cavity filled with bones was found in the pouch of Douglas. On a free incision being made, nearly the whole skeleton of a fœtus was then removed by the anal route. The patient made a good recovery. Professor Orth showed specimens of a case of extra-uterine pregnancy where an adhesion between the fœtal sac and the jejunum had formed; the legs of the fœtus had perforated the jejunum and the patient died from perforative peritonitis. Dr. Milchner showed a patient suffering from polycythæmia megalosplenica. He said that of 7000 patients examined in the out-patients' department of the Royal Medical Clinic three were cases of this disease. The patient shown at the meeting had a remarkable red colour of the face; it was not, however, for this that he sought advice but because he complained of dyspnœa and pains in the left hypochondriac region. Venesection proved useless, the numbers of erythrocytes increasing again after several hours; the application of X rays to the spleen was likewise unsuccessful, but under the use of a dietary containing as little ferruginous material as possible the quantity of iron in the urine, which had been eight times the normal amount, decreased and the patient's general state became better. The polycythæmia, however, remained the same as before.

Improvements in the Wassermann Reaction.

Speaking at a recent meeting of the Berlin Medical Society Dr. Saalfeld suggested that the requisites for the Wassermann reaction, which were of an inconstant composition, should be prepared in a central laboratory under State control. He alluded to the cases reported lately by Dr. Freudenberg in this society where the results of the reaction in tests made on the same patients and about the same time in different laboratories showed great discrepancies. He further reported that unqualified persons advertise in the daily newspapers that they were prepared to perform the reaction on application. He thought that these unfortunate occurrences would be avoided if the reagents used for the process were controlled by a competent authority on behalf of the State in the same way as the law directed with regard to antidiphtheria serum. In the discussion Professor von Wassermann said that there were some points of difference between the antidiphtheria serum and the extracts used for his reaction, because the former were of constant composition, whilst the latter were variable from one day to another. The extracts must therefore be examined every day. He had found a way of meeting the requirements of practitioners who were somewhat alarmed by the uncertain results obtained by incompetent examiners. He had made an arrangement with a chemical factory to prepare the extracts in question and to issue them to the medical profession. Examinations of these extracts will be made in his laboratory every day, and the factory will be informed as soon as a certain extract has proved inefficacious, so that the sale of it may be stopped. To prevent the reagents being spoiled by being kept too long after delivery only a very small quantity, sufficient for not more than five reactions, will be supplied to each purchaser. Several other members spoke against Dr. Saalfeld's motion, which was ultimately referred to a commission of the society for further inquiries.

Multiple Births in Germany.

According to the Statistical Year Book of the German Empire, quoted in the *Deutsche Medizinische Wochenschrift*,

26,314 cases of twin-birth were registered in Germany during the last year. In 8358 cases both children were boys, in 7843 cases they were girls, and in 9933 cases they were of different sex. Triplet-births happened in 261 cases, of which in 56 all the children were boys, and in 53 all were girls; in 72 cases there were 2 boys and 1 girl, and in 80 cases 1 boy and 2 girls. There were also registered 8 quadruplet-births.

Nov. 21st.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

The Protection of Infant Life.

THE last census held in the year 1900 showed that the population of Hungary was slowly increasing, the annual increment tending to approach the analogous ratio observed among the Western nations. Further inquiries, however, disclosed the fact that the slow increase of the population was not due to a declining birth-rate but rather to the excessive mortality of infants and young children. This discovery resulted in a well-organised movement for the protection of infant life, which is at present being actively carried on all over the country. One part of the work of this organisation has been the establishment of institutions for the reception of children, and these have proved so successful that persons interested in the subject have undertaken long journeys for the purpose of seeing them. One of the most prominent leaders in the campaign against the excessive mortality among children is Dr. Menyhert Edelmann of Nagyvàrad, director of the local children's asylum. In a pamphlet recently published by him, entitled "The Campaign against the Great Mortality among Children," he writes that in 1907 the number of deaths in the country was 518,614. Out of this number, 231,498 were of children under 5 years of age, and 154,451 were of children under 1 year, which means that in Hungary practically every third person born dies within the first year of life. This rate has been maintained with little variation for several years past. Taking into consideration the absolute number of deceased infants, there is still less reason for satisfaction, because in 1907 more infants died than in any of the preceding eight years. The children's asylums (of which there are 19 in existence) have done good in various ways, but their effect has not yet made itself felt in a reduction of the death-rate. Dr. Edelmann maintains that the campaign against the mortality of infants will not be successful until the social and economical conditions of the people improve. As for the former, in Hungary there were 740,867 children born in 1907, and of these 72,628 (9·6 per cent.) were illegitimate. The number of stillborn children was 14,786. The deaths of 72,567 children were attributed to congenital weakness; of 7873 children to atrophy; and of 30,661 children to digestive disturbances. According to the Hungarian laws all children under 7 years of age must have medical attendance during an illness which proves fatal, but 50·7 per cent. of all the children who died were not seen by medical men, and there was medical evidence of the cause of death in only 56·6 per cent. of all the cases. The high proportion of illegitimate births was due to unfavourable social conditions rather than to wilful disregard of virtue. The great number of stillbirths points to the inadequacy of the attention given to women in childbirth. The leaders of the movement are unanimous in emphasising the great importance of breast-feeding in the reduction of infant mortality. They have stated that the mother's milk could not be wholly replaced even by a wet-nurse's milk, because there was a great biological difference between the two, and cows' milk was still less suitable. Mother's milk was the only food which changed in harmony with the gradual development of the infant and responded to the alterations going on in its digestive tract; mother's milk also conferred on an infant some degree of immunity against disease. There are therefore serious hygienic objections to the system by which mothers, who are capable of lactation, give out their children and seek positions as wet-nurses. On account of the ladies belonging to the upper classes being prejudiced against lactation wet-nurses are well paid in Hungary, their wages being from £2 4*s.* monthly with full board. In order to make mothers understand the iniquity of this system Dr. Edelmann organised a "School for Mothers" where popular lectures were delivered on pregnancy, childbirth, and lactation. The Minister of Internal Affairs has issued a popular pamphlet with the title "Good Advice for Women in the Expectant Stage and in Childbed, and for Mothers," and the distribution of this pamphlet has been entrusted to the parish priests and public notaries. In several large towns the so-called "free milk institutes" have been established, where milk is distributed to women of the poorer classes nursing their own infants. At the end of his pamphlet Dr. Edelmann makes several proposals which he recommends to the favourable consideration of the legislature. Some of these proposals are as follows: 1. A woman desirous of becoming a wet-nurse shall produce a certificate from a local magistrate stating that her last child is alive and is not older than 5 months. 2. The opening of agencies or registry offices for wet-nurses shall be licensed by the magistrates. 3. When a child under 7 years of age becomes ill medical advice must be obtained. Narcotics or similar drugs must not be given to children without the order of a medical man. 4. Women desirous of taking infants either for lactation or for attendance must notify their intention to a local magistrate. Without permission nobody may give out or take infants, not even a relative of the family. 5. No wet-nurse may take more than one infant at a time. 6. The artificial feeding of infants shall be strictly prohibited, with the exception that where the child suffers from an infectious disease the local magistrate may give permission for artificial feeding. 7. A nurse in whose care two infants or children of other mothers have died shall be removed from the list of recognised nurses. In the event of these proposals receiving legislative sanction the carrying of them into effect would devolve on the committee for the protection of infant life working as a section of the Ministry of Internal Affairs, with which is incorporated the Ministry of Public Hygiene.

Nov. 21st.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The Illness of the ex-Sultan Abdul Hamid.

Abdul Hamid was always shrouded in mystery. During the long period of his reckless despotism nobody knew exactly how he was living or what he was doing in his sumptuous seclusion at Yildiz Kiosk, and the same uncertainty exists after his dethronement and exile. Where is Abdul Hamid at present? Many believe that he is no longer at Salonika, and that after the latest reactionary manifestations he was removed to Constantinople, and some think deported to Africa. Many, of course, ask, Is he living at all? This question is invariably answered by a certain sort of omniscient person with the statement that he has been poisoned long ago, that the authorities keep this fact secret in order not to excite unduly public opinion, and that recent news of his illness has been published by some of the Union and Progress party in order to prepare the Ottoman people to learn of their late ruler's final disappearance from the stage of the living. Quite a number, again, firmly believe that he has become insane. I have heard other omniscients describe him as hopelessly laid up with complete paralysis. Now, what is the real truth? Abdul Hamid is suffering from chronic prostatitis. He has never been completely cured from this disease. Four years ago, when Professor Bier of Berlin had been called to attend him, he refused to submit to the suggested treatment. The condition has since gone from bad to worse, and all medical men can imagine the train of sufferings which the deposed potentate is undergoing. Under the influence of this trying ailment his mental faculties have become disturbed. He does not want to see anybody, mistrusts his medical attendants, often gets into a state of uncontrollable rage, and is altogether an extremely trying patient as well as a sorely tried man. Such, I am informed on good authority, is the real state of the case.

The Epidemic of Cholera.

You will probably have published the admirably exhaustive statistics on the progress of cholera from the British Delegate on the Ottoman Board of Health.[1] The scourge is

[1] See THE LANCET, Nov. 19th, 1910, p. 1507.

unfortunately making increasing ravages, and especially so in the Ottoman army. It is asserted that the figures of deaths in the latter case, as officially reported by the authorities, are far below the actual numbers. It is believed that the epidemic originally showed itself among the soldiers who had been camping in very insanitary conditions on the hills of the left shore of the Upper Golden Horn. At present strict measures are being taken everywhere. It has been decided to assign another sum of a million piasters for purposes of combating the spread of the scourge. This decision has now been submitted to the sanction of the Sultan, who will, of course, not be slow in acceding to it. Conferences are being held in order to deliberate on the best means of stemming the progress of the epidemic. An extraordinary sanitary commission has been appointed in Scutari under the presidency of the governor of that district, Faik Bey. This commission is composed of six members, medical and lay, and it will visit in person the different quarters, and will give instruction to the public as to how to act in cases of cholera, indicating the necessary prophylactic measures after consultation with the municipal medical men. In Kadikeuy, not far from Scutari, all the residents and proprietors of houses, shops, baths, carriages, boats, &c., receive, after a visit from the sanitary authorities, a special card certifying that thorough disinfection has been carried out in the respective places. In the European districts of Pera, Galata, &c., the following measures have been taken. Every municipal circle has been divided into sections, each of which possesses a commission consisting of a member of the municipal council, a police agent, a gendarme, and a medical man, whose business it is to see that the streets, hotels, baths, and other public buildings are kept clean and properly disinfected. All negligence in hygienic matters and disregard of the municipal decisions and regulations will be punished. Every measure necessary to safeguard the population will be carried out at the expense of the municipalities. The Ministry of Public Instruction has sent a communication to the œcumenical patriarchate, asking him to comply with the decision of the superior sanitary council, and to make it compulsory that the drinking-water in all the Greek schools of the metropolis shall be boiled.

The Medical Faculty.

The students of the medical faculty are lodging various complaints against their professors, whose actions and decisions they consider to be arbitrary. The students are much dissatisfied with the new and strict examination rules, but it is impossible not to see that the professors have acted with the intention of improving the standard of medical education in Turkey. The medical students of the higher classes have submitted a protest to the Minister of Education, and it may be found that the changes in the curriculum have been made too suddenly.

Nov. 15th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

The Fifth International Prison Congress.

THIS congress, recently held at Washington, proved a very important and successful meeting. There is much gratification over the endorsement by the congress of certain principles which occupy an important place here—viz., the indeterminate sentence on parole and the establishment of farm colonies for vagrants. On the whole, the reformatory aspect takes precedence in this country over the retributory and deterrent aspects of official punishment, and the sense of the congress seems to have favoured this attitude. It is to be remembered, however, that the homicide account of the country is disproportionately great; and if in that be included the vast number of deaths from industrial accidents of the distinctly avoidable class—for which someone should surely be, but rarely is, punished for criminal negligence—appallingly so.

Railroad Fatalities.

A most disquieting thing in this country is the terrible and increasing fatality roll of the railroads. According to the official report for the year ending June, 1910, there were 3804 people killed and 82,374 injured here during that period, an increase over last year, and this notwithstanding the number of precautions and safeguards the adoption of which in recent years it was hoped would reduce the annual record of such fatalities. Further, an unduly large proportion of these fatalities were of the avoidable kind; yet, although someone is thus clearly responsible, this responsibility seems not to have been adequately brought home to anyone in a single case. While tuberculosis, infectious diseases, diseases due to insanitary conditions all receive adequate and intelligent consideration and are vigorously combated in the United States, with a consequent lessening of the death-rate therefrom, the constant toll levied by industrial necessities seems to continue unchecked and even to increase.

Death of Dr. F. H. Wiggin.

Dr. Frederick Holme Wiggin, of New York, secretary of the Judicial Council of the American Medical Association, died at Atlantic City, N.J., on Oct. 28th. He was born at Kingston-on-Thames in 1853, but graduated in medicine in this country.

School Lectures on Tuberculosis.

It is announced that a course of lectures on tuberculosis will form part of the public school curriculum in New York city. Among the lecturers will be Dr. T. Darlington, Dr. H. Lorber, Dr. J. A. Miller, Dr. J. B. Huber, Dr. S. Adolphus Knopf, Dr. L. H. Klein, and Dr. J. Huddleston.

The Feeding of Public School Children in Chicago.

The School Management Committee of Chicago has attempted to grapple with the problem of the great number of underfed children of the poorest classes attending the public schools in that city. Lunch rooms are to be established in six of the largest public schools situated in districts densely inhabited by a foreign immigrant population. For 1 cent (½*d.*) as much soup and bread-and-butter as the children can eat will be given. An effort to make the scheme of educational value will be made by teaching the girls how to set and serve the food. The boys will be taught in the manual training department to make the "fireless cookers" in which the soup, made the preceding evening, is to be kept over night. As every hungry child will be fed, whether possessed of a cent or not, it will be interesting to note what proportion of cents to meals will be forthcoming.

Nov. 12th.

MEDICAL INSPECTION.—In regard to the scheme for the reorganisation of the school medical inspection staff agreed upon by the London County Council on Nov. 1st (see THE LANCET, Nov. 5th, p. 1364) the Education Committee has approved the appointment of Mr. J. A. H. Brincker, M.B. Cantab., D.P.H., and Miss Gowdey, M.B. Lond., two part-time officers, whose engagements have just come to an end, as full-time assistant medical officers (education) at commencing salaries of £500 a year. The first of a series of weekly returns as to the progress of medical inspection was submitted. It set forth: Number of school doctors engaged, 71; schools inspected, 73; children inspected, 5521; number found to require treatment (all ailments), 2369; number of those for whom treatment is available under the Council's scheme, 1558.

COLONIAL MEDICAL SERVICES.—*West African Medical Staff:*—Dr. J. H. Paterson, medical officer, Northern Nigeria, has retired on a pension, and Mr. W. S. Webb, medical officer, Gold Coast, has resigned his appointment, with a gratuity. Mr. D. Alexander, medical officer, Northern Nigeria, has been promoted junior sanitary officer, Sierra Leone; Mr. H. A. Foy, medical officer, Northern Nigeria, junior sanitary officer, Northern Nigeria; and Mr. J. B. H. Davson, formerly senior medical officer, Gold Coast, has been reappointed senior medical officer, Sierra Leone. The following gentlemen have been selected for appointment to the staff: Mr. P. C. Conran (Northern Nigeria), Mr. C. G. Grey (Southern Nigeria), Mr. J. P. B. Snell (Southern Nigeria).—*Other Colonies and Protectorates:*—Mr. C. K. Attlee has been appointed assistant to the colonial surgeon, St. Helena; Dr. A. K. Cosgrave has been appointed a house surgeon, Medical Department, Straits Settlements; Dr. F. W. Greaves has been appointed a supernumerary medical officer in Trinidad; Dr. H. M. C. Green has been appointed a medical officer in the Straits Settlements; and Dr. N. P. Jewell has been appointed an assistant medical officer in Seychelles.

Obituary.

JOSEPH FRANK PAYNE, M.D. OXON., F.R.C.P. LOND.,

CONSULTING PHYSICIAN TO ST. THOMAS'S HOSPITAL; HARVEIAN LIBRARIAN OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

WE much regret to announce the death of Dr. Joseph Frank Payne, consulting physician to St. Thomas's Hospital, and one of the most learned members of our profession, which occurred at New Barnet, Hertfordshire, on Wednesday, Nov. 16th, in the seventieth year of his age.

Joseph Frank Payne was born at Camberwell on Jan. 10th, 1840, the son of Joseph Payne, the first professor of education at the College of Preceptors, whose learning and industry were well reflected in his son. Professor Payne, moreover, married a famous schoolmistress, so that on his mother's side also the subject of this memoir had an hereditary right to academic distinction. He was educated at home by his parents, and obtained a demyship at Magdalen College, Oxford, where he crowned a career of prize-winning with a first class in the Natural Science Tripos. Elected a Fellow of his college, he began his medical studies at St. George's Hospital, and graduated as M.B. Oxon. in 1867, while he won the Burdett-Coutts Scholarship in Geology and the Radcliffe Travelling Fellowship in Medicine. But he also graduated at the University of London as a Bachelor of Science in 1866, and took the Membership of the Royal College of Physicians of London in 1868. After attending clinics in Paris, Berlin, and Vienna with an industry that accounted for the wide range of his exact knowledge, he migrated from St. George's Hospital to St. Thomas's Hospital, where he was elected assistant physician in 1873, in which year he also became a Fellow of the Royal College of Physicians of London. In 1874 he was Goulstonian lecturer at the College, when he took as his subject the Origin and Relation of New Growths. Abstracts of these lectures will be found in THE LANCET and sufficiently show the range of his pathological learning at the time as well as his earnest spirit of research. The third of these lectures, which was devoted to answering the question whether cancer be a local or a constitutional disease, is a model of how to supply information without dogmatism. This was the beginning of a very close connexion with the College, where he was Lumleian lecturer in 1891, Harveian orator in 1896, and FitzPatrick lecturer in 1903 and 1904, while he was appointed Harveian librarian in 1899 in succession to Dr. William Munk. Of his FitzPatrick lectures we speak below—they more definitely than any of his work revealed him as archæologist and historian, but his Harveian oration showed the original bent of his great learning. He sketched on this occasion the course of mediæval medicine, and took occasion to do justice to Galen, whose errors have been much magnified, but whose methods of work Dr. Payne showed to be truly scientific.

In 1887 he became full physician to St. Thomas's Hospital, and in 1888 there came out the "Manual of General Pathology," the publication of which at once raised Dr. Payne to the front rank of medical men of letters. Until some 10 or 15 years before the publication of this book pathology was treated almost solely from an anatomical point of view even in the best of manuals, and one such work Payne had himself already edited. But the study of pathology had since that time received a grand impetus through the growth of the science of bacteriology, and in consequence Payne was able to include in his "Manual of Pathology" much description of vital processes where earlier authors had been perforce content with describing the products of disease. In particular in this manual was Payne able to handle the new subject of bacteriology with lucidity and exactitude, and the reception of his book was favourable immediately.

At St. Thomas's Hospital Payne made a favourable impression from the first. He at once identified himself closely with the interests of the place and became a son by adoption if not by birth. And yet in some ways he failed to reap the full advantage of his membership of the staff. He was elected at a more advanced age than is the rule, and promotion was unusually slow, so that he did not leave the out-patient room for the wards till within a few years of his compulsory retirement by lapse of time. Still, in the meanwhile he had made a name for himself not only in medicine but perhaps still more widely as one of the best known dermatologists in this country. "To the last," writes one of his colleagues, "it was over some rare skin disease that he would display his keenest interest." The same colleague adds: "As a teacher Payne was at his best with a small crowd rather than a large. For one thing, his voice was not strong enough to arrest the vagrant attention of the casual student, and for another he did not compel it by systematic resort to the Socratic method. But to those who cared to learn and whose interests were not limited to what might prove useful in the next examination he could be a most delightful teacher. As his Fitz Patrick lectures showed, there was hardly a bypath of medical lore that he could not illuminate, and perhaps the very variety of his knowledge made him less inclined to give systematic instruction." As an examiner, Payne was in much request, his great learning and natural kindness gave him the right blend of severity and tolerance, though his shyness sometimes infected the candidates. He was examiner in medicine at the Universities of Oxford, Cambridge, and London, and in 1899 became a Fellow of the University of London.

As historian and scholar Payne was not only a worthy representative of the University of Oxford, but a philosopher of whom medicine may well be proud. He possessed a sound knowledge of his profession in all its branches, being equally an authority upon general pathology, diseases of the skin and the infections, especially plague. In 1879 he went as a member of the British Commission for the Investigation of the Plague in Russia at Vetlanka, and his valuable observations of this epidemic were embodied in Vol. IV. of the Transactions of the Epidemiological Society of London (p. 362). Much of his experience was also contained in the careful and learned article on Plague which he contributed to Vol. I. of Allbutt's "System of Medicine." He embodied in a small book, entitled "Rare Diseases of the Skin," some valuable notes on interesting cases which had come before him in the course of his practice at the Blackfriars Hospital for Diseases of the Skin. He was at different times President of the Pathological Society of London, the Dermatological Society of Great Britain, and the Epidemiological Society, showing that in each of the branches of medicine where he especially worked his labours were appreciated by his colleagues.

But although the practical side of Payne's work in medicine was so valuable, he will be best remembered as a medical historian, a branch of literature for which both by training and temperament he was well fitted. The task of the medical historian is by no means easy. The ideal medical historian should be a good Greek, Latin, and Arabic scholar, as well as an expert in palæography, while in addition, if he deals with our own country, he should be able to read Anglo-Saxon, Welsh, and Erse. There is perhaps no one who can fulfil this ideal, and we do not mean to say that Payne did so. But he had a thorough knowledge of German and Latin and a working acquaintance with Greek; he had a passion for accuracy, a good memory, a scholarly mind, and a love for his subject which gave to his writings something of the innate beauty of the work of a mediæval craftsman whose handiwork and temperament are apparent in all his work. In 1901, when Mrs. Fitz Patrick expressed her wish to honour the memory of her husband by some foundation in the Royal College of Physicians of London, it was Dr. Norman Moore's advice which turned the gift in the direction of medical history, a subject in which he himself excels, and Payne was chosen by the College to be the first Fitz Patrick lecturer. He was already well known as a medical historian by the admirable article on the History of Medicine which he had contributed to the "Encyclopædia Britannica," by an edition of the De Temperamentis of Galen, and by his Harveian Oration.[1] Acquainted as he was with the brilliant and profound works on the history of medicine which foreign countries, notably Germany, France, and Italy, have produced, it was ever a matter for sorrow with him that his own country was so far behind others, not only in the bulk but in the value of its contributions to the history of medicine. Therefore no one welcomed the foundation of the Fitz Patrick Lectures more warmly than he did, for he saw in them, to use his own words, "the first attempt to have the history of medicine taught or expounded in this country." His introductory remarks to his first course of lectures may well be

[1] THE LANCET, Oct. 24th, 1896, p. 1134.

reproduced here, for they are characteristic of the spirit and power in which he undertook his task. After an enumeration of various "collections for the history of medical institutions," he continued: "But though these valuable materials for history have been collected, the amount is not very great, and the work of collating them has not been attempted. England is conspicuous among European countries for the zeal with which her political, social, and literary history has been investigated, and especially for the unrivalled series of records and memorials which have been collected for the purpose of such investigations. But the history of science generally, and especially of medicine and surgery, has been deplorably neglected. We have done little for medical history in general; but relatively almost less for our own medical history. The history of medicine in Britain, it is not too much to say, remains to be written. If in the standard medical histories we may sometimes think that British medicine is inadequately represented, this is not the fault of the historians. It is our fault for not having supplied them with adequate materials. ..... If we were to attempt, however inadequately, to lay something like the first stone of the history of English medicine: to make a rough beginning which, it is to be hoped, may be revised and corrected, as well as continued by other and better equipped investigators, this attempt, though humble, might not be without fruit." Such were the modest words with which Payne prefaced his admirable lectures on English Medicine in the Anglo-Saxon Times, delivered in 1903. These were followed in the second course delivered in 1904 by two lectures dealing with thirteenth century Anglo-Norman medicine, as exemplified by the work of Gilbertus Anglicus and Ricardus Anglicus. This course of lectures, much enlarged and expanded, is about to be published in book form, and on them Payne was working to within a few weeks of his death, and we earnestly hope that before long they may appear.

We have received eloquent testimony from Dr. Payne's colleagues at St. Thomas's Hospital as to their appreciation of his merits. "The better one knew him," writes one, "the deeper grew one's respect both for the man and for his really astonishing attainments. Of late years, partly through failing health and partly from his change of residence, his old colleagues have seen less and less of him; but on the occasions when he did again appear at the hospital his welcome was as warm as of old, and time has done nothing to dim his memory. One might take for granted his medical and pathological distinctions, even his classical knowledge and his familiarity with medical history of the remotest times, but it was almost paralysing to find by an accidental remark that he was the author of the 'Encyclopædia Britannica' articles on furniture, and that he was a connoisseur in china." There were, as a matter of fact, a dozen branches of knowledge upon any of which Dr. Payne could claim to be an expert, and yet the simplicity of the man was such that all his erudition seemed a matter of course.

GEORGE CARRICK STEET, F.R.C.S. ENG., L.S.A. LOND.

THE death of Mr. G. C. Steet, whom in our issue of Sept. 17th last we described as the Father of the Royal College of Surgeons of England, has taken place at his residence at Hampstead, at the age of 92 years. A student of St. George's Hospital, he became a Member of the College in 1840, and took the Fellowship in 1849, being the senior Fellow at the time of his death. He was chief medical officer at the General Post Office for 20 years, and held the posts of consulting medical officer of the Spanish Consulate in London, surgeon to the Home for Penitent Females, to the Royal Maternity Charity, and to Queen Adelaide's Lying-in Hospital. He was the author of articles on the Preservation of Food, the Ancient Mexican Treatment of Parturient Women, and the Development and Growth of Boys.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Olivier, formerly physician to the hospitals of Lille. Dr. M. K. Kassabian, a Röentgen-ray specialist in Philadelphia, from cancer caused by the action of the rays. Dr. Schönbrod, of Potsdam, from typhus fever contracted during laboratory research. Dr. Ernst Below, of Hanover, a well-known writer on tropical hygiene and the therapeutics of light.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

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TUESDAY, NOV. 22ND.

THE General Council of Medical Education and Registration opened its winter session to-day at its offices, 299, Oxford-street, W. Sir DONALD MACALISTER, K.C.B., the President, was in the chair.

New Member.

Sir Isambard Owen, M.D., D.C.L., M.A., F.R.C.P., who has been appointed the representative to the Council of the University of Bristol for a period of five years from July 8th, 1910, took his seat. He was introduced by Dr. NORMAN MOORE.

President's Address.

Sir DONALD MACALISTER then delivered his Presidential address. He said: The latest addition to the academic family in England, the University of Bristol, has followed the good example of certain of its elder sisters by choosing a member of our profession to be its Vice-Chancellor. It has given further evidence of its wisdom by sending him to take his place here as a member of the Council. In Sir Isambard Owen we welcome an experienced administrator who has already done much for professional education in Cambridge, London, Newcastle, and Wales. We may safely count on deriving great advantage from his coöperation with us in the educational tasks that lie before us. His Majesty the King has been graciously pleased to confer the honour of a peerage on our former colleague, the Right Honourable Sir Walter Foster, who from 1887 to 1897 was one of the three members returned by the direct election of the registered practitioners of England and Wales. Lord Ilkeston has assured me that he will continue to interest himself in all that concerns the welfare of our profession. His Majesty has also bestowed the distinction of knighthood on one of our oldest and most assiduous members, Sir David C. McVail. According to the date of his first appointment he is the senior of us all, for no one of those who sat with him in 1886 is now a member of the Council. In the name of his present colleagues I have conveyed to him an expression of their good wishes, and their congratulations on the honourable recognition accorded his long and strenuous service as Crown representative for Scotland. In my Presidential address last May I mentioned that we might except soon to receive a new member from the University of Wales. It now appears that the University, though empowered by Charter to confer medical degrees and diplomas, has not yet procured from Parliament the legislative sanction which is necessary before these degrees and diplomas can be included in the list of registrable qualifications. The like authority is also required before the University can appoint a member of this Council. In my capacity as your representative on the University Medical Board, I have suggested that steps should be taken to obtain the powers in question, by the promotion of a Bill drafted on the lines of the Acts already passed in relation to Sheffield and Bristol.

During the summer death has removed, with merciful suddenness, Dr. Lombe Atthill from the dwindling roll of ex-members of the Council. He had held office among us for 14 years, and after his retirement in 1903 he continued to make useful suggestions to our committees, especially with reference to the branch of practice in which he was so eminent a proficient. Only a few days ago it was announced that Dr. J. F. Payne had also passed away. For five years he worked with us as representative of the University of Oxford, and those who knew him best will most regret the loss of one who did so much to maintain the scholarly traditions of the profession of medicine.

The wish expressed by the Irish Branch Council that an effort should be made for the extension of the Midwives Act to Ireland was duly communicated by me to the Government. I have reason to believe that in the Bill now under the consideration of Parliament the Lord President of the Privy Council has approved the introduction of provisions which will at least have the effect of removing the disabilities of midwives trained in Ireland.

It has not been possible to obtain assurances that an amendment will be accepted, providing for the prohibition of the practice of midwifery by unqualified men.

I have also official authority to state that the Parliamentary paper, setting forth the results of the Local Government Board's inquiries concerning the prevalence and the effects on public health of unqualified medical practice, is ready for publication. It will probably be issued before the end of this week. Copies will be placed in the hands of members of the Council at the earliest possible date. It is desirable that the conditions disclosed by these inquiries should be subjected to the fullest public discussion, so that the Council at its next meeting may be in a position to consider judicially what steps should be taken for their amelioration. Some progress has also to be reported with regard to the question of restricting the administration of anæsthetics by unqualified persons. The draft of a memorandum and Bill, submitted for the consideration of the Lord President, has been transmitted by his lordship to the Council for its observations. The Executive Committee has referred the documents to the special committee appointed by the Council, with the request that they will report to you on the subject during the present session.

It will be remembered that in 1901, at the instance of the Privy Council, Part II. of the Medical Act, 1886, was applied to Italy, with the result that Italian qualifications became registrable in the Foreign List of the Medical Register. Under the then existing Italian law British practitioners were accorded the right of practising among foreign residents in that country, but not among Italians. The relations thereby established were thus not fully reciprocal, though they conferred privileges of practice which at the time were regarded as valuable and in the circumstances satisfactory. Since then I have more than once, as occasion offered, pointed out to the Italian authorities that the concessions made from the British side were more liberal than those granted by the Italian law; and that it was desirable in the interest of the movement for reciprocity that the concessions in question should be equalised. It is gratifying to learn, from a despatch of His Majesty's Ambassador in Rome, which has been laid before the Executive Committee, that the Italian legislature has now passed an Act, of which the effect is to concede unrestricted freedom of practice in Italy to medical men duly qualified by registration in this country. As matters stand, the concession applies only to British practitioners, inasmuch as Britain alone has granted reciprocity to Italy. The Council may well be satisfied with the results of the liberal international policy adopted nine years ago. His late Majesty King Edward was graciously pleased to grant to the Faculty of Physicians and Surgeons of Glasgow permission to prefix the term "Royal" to the name of the corporation. The proper steps having been taken to give effect to the Royal grant I was requested to ascertain from the Law Officers of the Crown whether the Registrars of the Council required any further authority for employing the Royal prefix in registering the names and qualifications of Fellows and Licentiates of the Faculty. A definite decision has now been given that no further authority is necessary, and the Registrar has informed the Branch Registrars accordingly. Any practitioner already registered in virtue of a qualification granted by the Faculty may, on application, have the description of his diploma altered, so as to correspond with the style by which this ancient corporation is in future to be officially designated. In view of my own association with Glasgow, I may be permitted to offer from the chair my congratulations to the Royal Faculty, and to its President, Dr. Knox, on the mark of Royal favour.

With the approval of the Lord President I accepted an invitation, transmitted by the Privy Council, to attend in October a meeting at Berlin of the International Committee for the promotion of post-graduate medical education. The committee has been formed at the instance of the German Government for the purpose of coördinating and extending the facilities for special or advanced study and research offered in various continental countries to qualified practitioners, native and foreign. The committee possesses an international bureau, from which information concerning post-graduate courses, admission to clinical hospitals and laboratories, and other similar particulars of interest to practitioners, may be obtained. The members of the committee are nominated by the several Government authorities, but no permanent members have yet been added to represent the British Government, though provision is made in the constitution for such an addition should this country decide to take part in the organisation. As the result of my visit I reported to the Privy Council that in the interest of British practitioners, and in particular of officers of the medical services who might desire to visit the continent for purposes of study, and also in the interest of British institutions to which foreign practitioners might resort with the like object, it seemed desirable that our Government should avail itself of the opportunity to secure British representation on the international committee. I now understand that the authorities concerned will be prepared to give favourable consideration to any invitation in this sense through the usual diplomatic channels.

An important memorial will be laid before you, which is signed by a large number of influential persons concerned with the advancement of tropical medicine and hygiene, and supported by a communication from the Colonial Office. The subject has assumed a high significance of late years, both at home and abroad, in relation to the protection of health and life in many parts of the Empire. Instruction in the several branches of the subject has been provided at various centres in this country, and examinations for certificates of proficiency have been instituted by some of the licensing bodies. Value is attached to these certificates by the authorities who make appointments in the Navy, Army, Indian, and Colonial medical services, but at present no official machinery exists for ascertaining that the standard of proficiency which the certificates represent is maintained at a satisfactory level, or for registering those that are found to be deserving of recognition. The position resembles that occupied by diplomas in sanitary science State medicine, and public health before the Medical Act, 1886, was passed. That Act gave power to the Council to determine what diplomas deserve the recognition of registration. In the exercise of that power the Council has laid down rules for courses of instruction and examination which have proved of great service in guiding the teaching and examining bodies, and in satisfying public authorities that their diplomas are acceptable as certificates of high proficiency in the theory and practice of civil hygiene. The prayer of the memorialists is that steps may be taken to bring about a like result with reference to tropical hygiene, and it is pointed out that a slight amendment of Section 21 of the Act would effect this purpose. I have ascertained from the Privy Council Office, of which Lord Crewe, now Secretary of State for India, was lately the head, that should the Council favour the suggestion, a proposal to make the desired amendment could be laid before Parliament at an early date.

At the suggestion of the Local Government Board, the Pharmacopœia Committee appointed its secretary, Dr. Tirard, to attend an International Conference, held in Paris during the summer. The members of the Conference included delegates from a large number of Governments, and its purpose was to arrive, if possible, at a common understanding regarding methods and standards on questions relating to the analysis of food and drugs. Dr. Tirard has presented a full report of the proceedings, which will be communicated to the Council by the Pharmacopœia Committee. The Education Committee has in hand a report on the teaching of the subjects of chemistry, physics, and biology at institutions other than medical schools, and the relation of such teaching to the medical curriculum. The question of taking further steps towards raising the standard of preliminary examinations in general education has also been occupying the attention of the committee. From a number of licensing bodies communications have been received bearing on the separation of the subjects of medicine, surgery, and midwifery in the Final Examination. When the Registrar has received all the replies to the circular issued in pursuance of the Council's resolution of May 28th, 1910, they will be remitted to the committee for report. The Executive Committee, as instructed, is making necessary arrangements for the inspection in 1911 of the Final Examinations for qualifications in Dental Surgery. The committee proposes to appoint an inspector for this purpose, and to direct that the inspection shall be conducted under the regulations set forth in

Standing Order XXIII., so far as these are applicable to the case.

On the motion of Dr. LITTLE, seconded by Dr. NORMAN MOORE, the President was thanked for his address.

The late King.

A letter was read from the Home Secretary acknowledging the address of condolence presented by the Council on the occasion of the death of King Edward VII.

Commissions in the Indian Medical Service.

A table was received showing the results of the competition held in July, 1910, for commissions in the Indian Medical Service, and a motion proposed by Sir DAVID C. MCVAIL was carried expressing the thanks of the Council "to the Under-Secretary of State for India for the return which he has again furnished to the Council, with the request that such returns may in the future continue to be furnished to the General Medical Council."

The Diploma in Public Health.

Dr. NORMAN WALKER moved :—

That it be remitted to the Public Health Committee to consider and report whether any, and if so what, changes are called for in the regulations for the Diploma in Public Health.

He said that he wished simply to draw attention to the fact that a good many years had elapsed since the existing regulations were drafted and that circumstances had considerably altered in the meantime. Appointments had been made in connexion with the inspection of school children and the like, and the matter of the regulations was quite one which ought to be remitted to the Public Health Committee to consider. The regulations which were admirable 15 or 16 years ago might require revision now. Some people were of opinion that the regulations which the Council had drafted might possibly be made a little more definite than they were.

Sir JOHN MOORE seconded.

The motion was agreed to.

Diplomas in Tropical Medicine.

The Executive Committee brought before the Council certain communications and a memorial in regard to the registration of diplomas in Tropical Medicine.

A letter, dated Oct. 28th, 1910, was received by the Registrar from an official of the Colonial Office in the following terms :—

I am directed by the Earl of Crewe to inform you that his lordship understands that a memorial has been recently presented to the General Council of Medical Education and Registration in the United Kingdom in favour of the recognition of the Diploma in Tropical Medicine as an additional registrable qualification.

Lord Crewe, in view of the great importance of this branch of medicine to His Majesty's possessions in the tropics, desires to associate himself with the representations of the memorialists, and to express the hope that their request may be complied with.

I am to enclose a copy of a resolution in favour of the recognition of the Diploma in Tropical Medicine as a registrable qualification, which was passed by the Committee of the Tropical Diseases Research Fund at their meeting of 27th of May last.

The following extract from the minutes of the meeting of the Tropical Diseases Research Fund held at the Colonial Office in May last was attached to the letter :—

Sir Charles Lucas raised the question of supporting the memorial which had been addressed to the General Medical Council for the recognition of a Diploma in Tropical Medicine as a qualification for registration as a medical practitioner.

It was agreed that the Advisory Committee should strongly approve the proposal of the recognition of the diploma, and that their approval should be communicated to the Medical Council by the Secretary of State for the Colonies.

The following is the memorial in question :—

THE HUMBLE MEMORIAL, ETC., OF THE UNDERSIGNED SHEWETH

1. That in the year 1897 the then Secretary of State for the Colonies, the Right Hon. Joseph Chamberlain, instituted an enquiry into the character and extent of the education in Tropical Medicine then obtained by Medical Officers destined for Colonial service. As a result of these enquiries he pointed out to the Universities and the other medical educational institutions in Great Britain and Ireland the necessity for greater attention being given to the subject and, moreover, himself took an active part in the foundation of special schools for the teaching and study of this branch of medicine. Moreover, several of the already existing schools of medicine instituted special courses of lectures or courses of laboratory teaching in Tropical Medicine, thereby recognising the necessity of supplementing their previous curricula in this respect.

2. That the wisdom of this movement has been proved (1) by the increasing support extended by the authorities of most of the tropical colonies to the special schools referred to ; (2) by the number of students attending these schools annually—since its opening in 1898, 1046 students have passed through the London School of Tropical Medicine, 317 through the Liverpool School of Tropical Medicine, and about 28 annually through the Edinburgh School ; (3) by the fact that these students belong not to the Colonial Medical Services only, but to the Naval and Military and Indian Medical Services, to Missionary Societies, and to Planting, Railway and Trading Corporations, whilst a considerable proportion are private medical practitioners ; (4) by the subsequent establishment of similar schools in France, Germany, and America ; (5) by the number and importance of the recent additions to our knowledge of Tropical Medicine—additions in not a few instances attributable either to the students of these schools or to the stimulus given by these schools to the study of this particular branch of medicine ; (6) by the new light these advances in Tropical Medicine have thrown on many points in general medicine ; (7) by the more general diffusion of a correct knowledge of the methods of diagnosis and treatment of Tropical Disease ; (8) by the improved health of natives and Europeans in Tropical Countries.

3. It appears, therefore, to your petitioners that the time has come when this teaching should be encouraged by official recognition, that it should be regulated, and that the proficiency of the student should be officially certified.

4. That it is essential for this purpose that the General Medica Council should be empowered to regulate the courses of study and examinations prescribed for certificates in Tropical Medicine and to register such certificates as it finds deserving of recognition as additional qualifications.

5. That although certain bodies hold special examinations in Tropical Medicine, in only one instance—that for the M.D. examination, Section 7 of the University of London, open only to graduates of that University—is the special diploma registrable. The Universities of Cambridge, Edinburgh, and Liverpool grant diplomas in Tropical Medicine, and the Royal College of Physicians and Surgeons of England endorse certificates of proficiency in Tropical Medicine in the instance of their own diplomates ; but none of these diplomas or certificates are registrable as a special qualification. Moreover, there is no uniformity either in the standard of the examinations or in the range of subjects included. Even in the examinations for the various Public Health diplomas many important subjects in public health as relating to the tropics are ignored, notably the agencies peculiar to the tropics which transmit and spread certain diseases, subjects which hardly admit of being efficiently added to the present curriculum of the general medical student.

6. That the great and growing importance of the subject, the large number of medical men practising in the tropics, the number of qualified practitioners taking out special courses in Tropical Medicine, the interest in the subject taken by the government authorities in the tropics, the absence of special recognition of Tropical Medicine in ordinary medical examinations, and the special training necessary for efficient practice, justify your petitioners in requesting that a Diploma in Tropical Medicine should be recognised as an additional registrable qualification in the same manner as are the various diplomas in Public Health and Sanitary Science.

7. Your petitioners are further of opinion that the recognition and regulation of the various examinations in Tropical Medicine are essential for the securing of uniformity in the scope of such examinations and for the maintenance of such a standard of proficiency as would ensure that a proper value be attached to the diploma.

The memorial was signed by 68 persons, every one of whom, as a man of affairs, as a teaching or educational authority, as a physician, or as an expert in epidemiology, has a right to express an opinion on the matter.

The PRESIDENT moved the adoption of the following recommendations in regard to the communications and memorial respecting the registration of Diplomas in Tropical Medicine :—

(1) That the Lord President be informed that the Council is prepared to undertake the duty, should Parliament think fit to amend the Medical Act in the sense proposed ; and (2) that in the meantime copies of the memorial be forwarded to the licensing bodies concerned for their information, with the request that any observations they may have to offer may be communicated to the Executive Committee before its meeting in February next.

He said that the memorial deserved careful consideration. If the suggestion made were carried out in the form suggested it would involve a new duty on the General Medical Council. The Executive Committee thought that if the duty were imposed by Parliament the Council ought to undertake it. It was quite possible that some of the licensing bodies might have useful observations to make. These observations could be transmitted to the Privy Council along with the answer of the General Medical Council.

Sir THOMAS FRASER seconded. This, he said, was a very important matter, which certainly required consideration.

The motion was agreed to.

The Students' Register.

Dr. ADYE-CURRAN drew attention to the unsuccessful application from the Apothecaries Hall, Dublin, to have its preliminary examination re-scheduled. From communications received from the Privy Council he held that the General Medical Council was not authorised to publish a Students' Register. He suggested that no further expenditure on the Students' Register should be incurred.

The PRESIDENT replied that the expenditure on the Students' Register was quite legal. The keeping of a Students' Register was not one of the things which the Privy Council could compel the General Medical Council to do, but the Council could keep it if it thought the Register necessary.

The subject then dropped.

Restoration of Names to the Register.

After the Council had deliberated in private, the PRESIDENT announced that the Registrar had been directed to restore to the Medical Register the names of William Shaw, Percival Humble Watson, and Christopher Richard Kempster, and to the Dentists Register the name of Arthur Ogeesby.

The Council adjourned.

WEDNESDAY, NOV. 23RD.

The Council again sat at its offices, 299, Oxford-street, W., Sir D. MACALISTER, the President, in the chair. The whole of the sitting was devoted to the hearing of penal charges.

Medical News.

UNIVERSITY OF LONDON.—At examinations held in October the following candidates were successful:—

THIRD M.B., B.S. EXAMINATION.

Honours.—*William Allen Daley, B.Sc., University of Liverpool; *Cicely May Peake, London (Royal Free Hospital) School of Medicine for Women; †Bernard C. Maybury, St. Thomas's Hospital; and *†Clement Edward Shattock, University College Hospital (University medal).

* Distinguished in Medicine. † Distinguished in Surgery.

Pass.—Alister R. Speirs Alexander, University College Hospital; Edward William Archer, B.Sc., and Jackson Arthur Atkinson, St. Mary's Hospital; Kenneth John Aveling, London Hospital; William Arthur Berry, St. Mary's Hospital; Sydney Guy Billington, University of Birmingham; Frederick Leslie Brewer, University College Hospital; Arthur Burrows, London Hospital; Arthur Neville Cox, Guy's Hospital; Robert Lawson Crabb, University College Hospital; Frederick Adolph Dick and Geoffrey Dunderdale, Guy's Hospital; Gerard Ferdinand E. Dyke, University College Hospital; Basil Franklin Eminson, Charing Cross Hospital; Thomas Charles Cann Evans, St. Mary's Hospital; William Charles Fowler, University College Hospital; Thomas Woodcock George, London Hospital; Abdul Hamid Gool, Guy's Hospital; Arthur Augustus Russell Green, University of Birmingham; Hugh Arrowsmith Grierson, University of Liverpool; Henry Pollard Hacker, B.Sc., King's College Hospital; Joseph Stanley Hopwood, St. Thomas's Hospital; Arthur Rocyn Jones, University College Hospital; Walter Shirley Kidd and Alfred Everard Lees, Guy's Hospital; Blanche Pattie Lindup, London (Royal Free Hospital) School of Medicine for Women; Dermot Loughlin, London Hospital; Kenneth D. Marriner, St. Thomas's Hospital; Raymond Montgomery and Gerald Thomas Mullally, Guy's Hospital; Eustace M. Parsons-Smith, St. Thomas's Hospital; John Valentine Rees, Cardiff Medical School and London Hospital; Arnold Renshaw, Victoria University of Manchester; Harold Ferdinand Renton, Guy's Hospital; Douglas George Rice-Oxley, London Hospital; Arthur Leyland Robinson, University College Hospital; Henry Gordon Smith, St. Bartholomew's Hospital; Robert Stout, Guy's Hospital; Ludwig Seibert Benjamin Tasker, University College Hospital; Leonard Herbert Taylor, Charing Cross Hospital; Gottfried Oram Teichmann, Middlesex Hospital; Graham Yalden Thomson, Guy's Hospital; Arthur Bayford G. Underwood, University College Hospital; Antonio Daniel Vazquez, Guy's Hospital; Michel Demétre T. Vlasto, University College Hospital; Lilian Enid Watney, London (Royal Free Hospital) School of Medicine for Women; and Ernest White, St. Bartholomew's Hospital.

The following candidates have passed in one of the two groups of subjects:—

Group I.—Norman Booth, Victoria University of Manchester; Arnold Charles S. Courts, University College Hospital; Hazel Haward Cuthbert, London (Royal Free Hospital) School of Medicine for Women; Walter Egbert Fox and J. T. Montgomery McDougall, Guy's Hospital; Emily Clara Macirone, London (Royal Free Hospital) School of Medicine for Women; Richard Naunton O. Moynan, University College Hospital; Mabel Muncey, London (Royal Free Hospital) School of Medicine for Women; and Thomas Anger F. Tyrrell, St. Mary's Hospital.

Group II.—Thomas Beaton, Charing Cross Hospital; Claude Alexander Birts, University College Hospital; Alfred Ernest Dagnall Clark, St. Bartholomew's Hospital; Maneckjee M. Cowasjee and John Adamson Edmond, Guy's Hospital; Florence Mary Edmonds and Ethel Rosaline Griffiths, London (Royal Free Hospital) School of Medicine for Women; Ernest Charles Lindsay, John Borland McVail, and Roy Kyffin Mallam, London Hospital; Alfred Arthur Edmund Newth, Westminster Hospital; Edward Au-ten Penny, Guy's Hospital; Alfred Alexander Webster Petrie, University of Edinburgh; David Scurlock, St. Mary's Hospital; and James Cowan Woods, London Hospital.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—DENTAL EXAMINATION.—The following candidates have passed the first part of the Dental examination:—

Group A.—F. Horsley, H. McCormick, J. F. Mulligan, R. L. O'Grady, and S. Weinstock.

Group B.—A. Cohen, A. W. Mooney, J. J. Murphy, and S. Robinson.

The following candidates have passed the final examination and have been admitted Licentiates in Dental Surgery:—

C. W. Anderson, D. J. Doolin, S. Miller, R. T. Mosbery, and L. J. Smyth.

Prince Alexander of Teck presided at the court of directors of the Royal Sea Bathing Hospital on Monday last, when the committee reported that the new ward and day rooms were completed, and that there were now a few vacancies for male patients, but there were 20 female applicants on the waiting list.

THE next holiday course of the Berlin Association of Dozenten will begin on March 2nd, 1911, and will finish on March 29th. Prospectuses may be obtained gratis on application to Herr Melzer, Ziegelstrasse, 10/11 (Langenbeck-Haus), Berlin, who will also supply any further information that may be required.

BATHS AT TORQUAY.—There has been a considerable amount of discussion at Torquay in reference to the need of medical baths for the town, and it has been proposed to establish medical baths at the bath saloons. At the last meeting of the Torquay town council it was decided to send a deputation to visit several towns provided with medical and swimming baths and to report upon them.

THE BRISTOL MEDICAL SCHOOL.—At the annual dinner of the Bristol Medical School, to be held at the Royal Hotel, College-green, on Nov. 29th, Sir Alfred Keogh, K.C.B., late Director-General Army Medical Staff, is to be the guest of the evening. Applications for tickets (price 5*s.*) should be made to the secretaries of the dinner committee at the Royal Infirmary, Bristol.

THE HEALTH OF THE NATION.—The Lord Mayor of London will open a Conference of Health-Promoting Institutions, to be held at the Guildhall on Dec. 8th and 9th, which is being organised by the National League for Physical Education and Improvement. The subjects to be discussed include Schools for Mothers, Infant Welfare Schemes Abroad, Day Nurseries, Children's Care Committees, Health Societies, and the Coördination of Health-Promoting Agencies. Tickets of admission may be obtained gratis on application to the secretary of the League, at 4, Tavistock-square, London, W.C.

DONATIONS AND BEQUESTS.—Among a large number of charitable bequests the late Miss Dinah M. Dawson has left the following sums to be paid annually to the institutions named: Royal Infirmary, Edinburgh, £400; Royal Edinburgh Hospital for Sick Children (remembering especially the out-patient department), £400; Royal Maternity and Simpson Memorial Hospital, Edinburgh, £300; Royal Association for Incurables, Edinburgh, £300; Falkirk Infirmary, £400; Queen Victoria Jubilee Institute for Nurses, Edinburgh, £200; Edinburgh Deaf and Dumb Benevolent Society, £100; Glasgow Deaf and Dumb Benevolent Society, £100; Royal Blind Asylum and School, Edinburgh, £100; Victoria Hospital for Consumption and Diseases of the Chest, Edinburgh, £200; Home for Cripple Children, Edinburgh, £25; Samaritan Hospital for Women, Glasgow, £50; Edinburgh Medical Missionary Society and Livingstone Memorial Medical Mission Training Institute, £300; Blind Asylum, Glasgow, £100; Glasgow Royal Infirmary, £200; and Sick Children's Hospital, Glasgow, £200. The will also makes provision for the establishment or maintenance of a hospital for women in Edinburgh.—Mr. W. Knowles, J.P., has given to the Bolton Infirmary a donation of £1000 in memory of his late wife.—The executors of the late Mr. George Peters have given £5000 to the Gloucester Royal Infirmary and £5000 to the Children's Hospital, Kingsholm.—Mr. Maurice Rüffer has subscribed £150 towards the £8500 appeal for the Queen's Hospital for Children, Hackney-road, and has promised a further sum of £500 when the amount required has been obtained.—By the will of the late Mr. F. H. Harrison, the Boston Hospital, Lincoln, will, on the death of the testator's wife, receive £1000, Dr. Barnardo's Home £500, the Lincoln County Hospital £250, the Church Missionary Society for Medical Missions £200, and the Lincoln General Dispensary £100.—Miss A. Burrell has given £7000 towards providing a new out-patient building in connexion with the Royal South Hants and Southampton Hospital.—Mr. Thomas Wilkinson has given £1000 towards the enlargement of the Bolton Infirmary.—An anonymous donor has promised £5000 to start a fund for providing a sanatorium in Staffordshire as a memorial to the late King Edward.

THE NORTH KENSINGTON DISPENSARY.—On Nov. 23rd a meeting was held at the town-hall, Kensington, for the purpose of appealing to the public on behalf of the North Kensington Dispensary. The Duke of Argyll presided, and was supported by Lord Alverstone (Lord Chief Justice of England), Lord Claud Hamilton, the Mayor of Kensington (the Hon. Mr. Justice Phillimore), the Right Hon. Sir Alfred C. Lyall, P.C., Mr. W. Whitaker Thompson (Chairman of the London County Council), Sir Francis Fleming, K.C.M.G., Sir Arthur Clay, the Vicar of Kensington (Rev. Prebendary Pennefather), Miss Lena Ashwell, and others. The Duke of Argyll, in opening the proceedings, referred to the great progress that had been made in combating tuberculosis. Sir Arthur Clay, chairman of the North Kensington Dispensary, said that the annual cost was about £500 or £600. At the commencement Mr. W. C. Alexander had given £1000, and the Dispensary was started in March of this year. Since that time 379 tuberculous patients had received treatment or advice. To put the institution upon a sound financial basis it was necessary to appeal for public support. Mr. Alfred Hillier, M.P., said that nothing would stand out in the history of this epoch more than the progress which science had made in dealing with disease, instancing the names of Pasteur, Lister, and Koch. In dealing with tuberculosis the first piece of machinery required was the dispensary, and he appealed most earnestly to those present to support such an institution in North Kensington. He quoted statistics showing that London was behind other parts of the country in this branch of the treatment of tuberculosis, and hoped that the result of the present meeting would go a long way to do away with that reproach. Dr. G. A. Sutherland, medical officer of the St. Marylebone Dispensary for the Prevention of Consumption, referred to the regrettable fact that the more actively the campaign against tuberculosis was prosecuted the more there seemed to arise a feeling in the minds of the public against the consumptive, but the educated consumptive was absolutely no danger to the country. He pointed out that there was no necessity to send many of the early cases to a sanatorium. These cases could be better dealt with at a dispensary. This had been recognised by Germany. On the motion of Lord Alverstone, seconded by Mr. Justice Phillimore, a resolution approving of the work of the North Kensington Dispensary for the Prevention of Consumption was unanimously agreed to. Miss Lena Ashwell made a special appeal on behalf of tuberculous children.

THE AFTER-CARE AND EMPLOYMENT OF CONSUMPTIVES.—Under the auspices of the Charity Organisation Society a conference on this subject was held recently at Denison House, Vauxhall Bridge-road. Colonel Montefiore presided. Dr. Jane Walker (Maltings Farm Sanatorium) opened the discussion with a paper in which she said that the best occupation for discharged consumptives to follow was the one they had been employed at previous to treatment, because the most money could be thus earned and anxiety, a powerful factor in the diseased, was minimised. In some way all sanatoriums should be linked up together, and no patient should be discharged without knowing that he or she had a society or a friend in the neighbourhood to which they were going. Mr. William J. Fanning (Kelling Sanatorium) quoted statistics showing that it made little difference whether the discharged patient went back to indoor or outdoor employment. Hard work was not detrimental to the discharged consumptive if he had been carefully prepared for it before he left the sanatorium. Dr. Esther Carling (Kingwood Sanatorium) advocated the issue of a journal somewhat on the lines of a church parish magazine, but circulating among the ex-patients of all the sanatoriums, by which they could be kept in touch with their place of treatment and by which communication might be established between all persons interested in the question of tuberculosis. Dr. H. W. McConnel (Kelling Sanatorium) said that the shorter the time occupied by a patient in a sanatorium the greater the need for after-care. Dr. M. S. Paterson (Frimley Sanatorium) advocated the patient going back to his original occupation. Experience showed that most of the patients did very well in indoor occupations. Dr. T. Glover Lyon thought that it was the duty of the State to make some provision for discharged consumptive patients. It was absolutely cruel, he said, that consumptive patients should be thrown out into the world without being properly looked after. Dr. R. Maguire referred to the difficulty of getting work for discharged patients, and said that the public had been scared too much. Consumptive patients with no active disease when they left the hospital were not capable of infecting others if proper precautions were taken. Dr. Glover Lyon said that it would be wrong to employ a patient who had passed through a consumptive hospital or sanatorium in the capacity, for instance, of a housemaid, and thus risk the spreading of infection in the household. Dr. Jane Walker, in her reply, said she would not like to say that the public had been over-educated with regard to consumption, but rather that they had been wrongly educated. She was inclined to agree with Dr. Maguire that a patient might go back to work if he had no active disease.

MIDDLESEX HOSPITAL.—Prince Alexander of Teck has started a Children's Collection Fund in connexion with "The Prince Francis of Teck Memorial Fund" on behalf of the Middlesex Hospital. Books of numbered coupons, each coupon being in itself a receipt for 1*s.*, are being issued from the Middlesex Hospital to children who, with the consent of their parents, will collect for the memorial. The students of the Middlesex Hospital Medical School have resolved to raise amongst themselves the sum of 1000 guineas for the endowment of a Prince Francis Memorial Bed.

DEATH OF MR. MITCHELL HENRY.—The death is announced of Mr. Mitchell Henry at the advanced age of 85. Mr. Mitchell Henry, at one time the wealthy owner of Stratheden House, London, and Kylemore Castle, Ireland, took the Membership of the Royal College of Surgeons of England in 1847, the Fellowship in 1854, and was for a short time surgeon to the Middlesex Hospital. He retired early and entered political life as a moderate Home Ruler.

A REPORT has been issued from the Privy Council as to the practice of medicine and surgery by unqualified persons in the United Kingdom. The report, which is largely made up of information derived from medical officers of health, is preliminary, it is hoped, to the appointment of a Royal Commission to deal with the subject.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Parliamentary Situation.

THE political crisis, which is culminating in a dissolution of Parliament and a General Election, involves the abandonment of all Bills except one or two which the Government deems it expedient to pass to preserve the continuity of finance and administration. When Parliament reassembled on Tuesday, Nov. 15th, it was expected that the session would terminate before the end of the week. However, the Government decided to postpone the appeal to the country for a week and in the meantime to press forward the Budget and the Expiring Laws Continuance Bill. The effect of this decision is that all other Bills, such as the Midwives Bill, will automatically be dropped. Whichever party is returned to power at the General Election, it seems inevitable that the early months of the new Parliament will be devoted to dealing with constitutional questions of an acutely controversial character. In such circumstances the prospect of the advancement of minor departmental measures designed to effect administrative reforms would not bright.

Unqualified Medical Practice.

The report on the effect on public health of unqualified medical and surgical practice has been prepared and presented to the House of Commons by the Local Government Board. It is being printed.

HOUSE OF LORDS.

TUESDAY, NOV. 22ND.

Plague Rats in East Anglia.

Lord LAMINGTON asked whether, for the more effective destruction of rats in the plague-infected districts of East Anglia, the Local Government Board, as the chief authority, would not itself take steps for their extermination or else induce the local authorities concerned to adopt concerted measures under expert scientific guidance. The noble lord said that he had some experience of destroying plague rats in Bombay, and he put his question because so far as he could judge from the newspaper reports there seemed to be some lack of coördination on the part of the various authorities in their efforts to get rid of the trouble. He admitted that since he put the question down the latest regulations of the Local Government Board had in some degree met his objections, but he still had considerable doubts as to the methods adopted. Perhaps the noble lord who represented the Local Government Board would state what were the methods adopted by the local authorities and the Local Government Board to coöperate one with another in order to get rid of the rats.

Lord ALLENDALE, who replied for the Local Government Board, said the noble lord had drawn attention to a matter which required serious consideration and had given rise to considerable anxiety. After his experience in India the noble lord had shown a justifiable anxiety as to the extermination of these pests. He need not go into the details of the procedure adopted by the Local Government Board. The noble lord's question rather suggested that the Local Government Board should become rat-catchers, or at all events that the Board should superintend the extermination of all rats. The Board was of opinion that the campaign against rats should be of a local character, but it was fully alive to its responsibility in the matter of public health and had not been slow to press on the local authorities concerned the necessity of adopting common measures. From the outset the Board had provided the local authorities with guidance and advice. The matter was first brought to the notice of the Local Government Board on Oct. 3rd, when four cases of suspected plague were reported. The medical inspector of the Board was instructed on the same day to visit the locality and procure specimens, and this was done. On Oct. 8th a dead rat was sent to the Board for examination and on Oct. 12th was pronounced to have had plague. The inspector proceeded to make a scientific local investigation as to the extent of the disease and to give advice to the sanitary inspectors of the districts concerned as to the action to be taken. The Board also issued an order imposing the duty on sanitary authorities and providing for the appointment of additional officers and the necessary expenditure of money. The Board had taken other steps also, and arrangements had been made for a special staff from the Lister Institute to go to Suffolk and make an examination of rats on a large scale at various points, more especially as to the kind of rats affected and their special flea parasites. Up to the previous day only six districts were known to have rat plague in East Suffolk, one in West Suffolk, and one in Essex. This sort of outbreak had always been watched by the sanitary authorities and there seemed no particular reason why this particular work should be undertaken by the State. He did not think the State was better equipped in the matter of machinery or of being able to make experiments than were the local authorities. At the same time any advice which the Board could give would be at the disposal of local authorities, and the Board of Agriculture had issued leaflets on the subject. The Local Government Board and the Board of Agriculture were in coöperation and in touch with local authorities, and were prepared to give such advice as might be necessary.

Lord LAMINGTON asked how the central authority could see that these regulations were thoroughly carried out.

Lord ALLENDALE replied that the Local Government Board had been in touch with every district in which there had been the slightest suspicion of diseased rats, and, in addition to these regulations, the Board was receiving reports from all those districts of any suspected outbreak. The Board could not do more than it was doing at present.

The subject then dropped.

HOUSE OF COMMONS.

FRIDAY, NOV. 18TH.

Lead Poisoning Amongst Swansea Spelltermen.

Mr. CHARLES DUNCAN asked the Secretary of State for the Home Department what were the weekly hours of labour worked by the spelltermen in the Swansea district; whether his attention had been called to the prevalence of lead poisoning amongst this particular class of workmen as disclosed by the number of compensation cases for lead poisoning; whether he was aware that these men worked seven days per week during the whole year; and whether the Home Office proposed to take any steps to secure a reasonable curtailment of the hours of such workmen with a view to avoiding the dangers of physical destruction of the men concerned.—Mr. CHURCHILL replied: It is reported to me by the factory inspector of the district that the hours of labour of spelltermen averaged from 56 to 60 hours weekly. The process on which they are engaged is one that requires to be carried on continuously throughout the week. The number of reported cases of lead poisoning in the manufacture of spelter in the Swansea district during the last ten years was 99, of which nine were fatal. The number so far during the present year has been 12, of which one was fatal. The question of the health of the workers in this industry and allied industries has been engaging the close attention of the Factory Department. A special report by one of the medical inspectors was recently presented to Parliament and draft regulations based on his recommendations are about to be issued to the trade. The medical inspector has recommended that young persons under 16 and women should not be employed, but he did not find it necessary to recommend a limitation of the hours of employment of adult men.

The Maintenance of the Lunatic Poor in Ireland.

Captain CRAIG asked the Chief Secretary to the Lord Lieutenant of Ireland whether he could state the intention of the Government as to the amount of State aid to be granted to the relief of local charges for the maintenance of the lunatic poor in Ireland; whether he was aware that committees of management of asylums in Ireland, having regard to the increased responsibilities and liabilities cast on them by the operations of the Local Government (Ireland) Act, 1898, which they assumed to the fullest extent in dealing with the insane in workhouses, acted in the assurance of a minimum 4*s.* grant; and whether, in view of the urgency of the matter, he would arrange that in future a minimum capitation grant of 4*s.* should be assured to all asylums.—Mr. BIRRELL answered: I am not at present in a position to make a statement on the subject or to say whether it will be possible to provide for a minimum capitation grant in future. The Local Government (Ireland) Act, 1898, does not contemplate such a grant in all circumstances, and the committees of management were not therefore justified in making the assumption referred to in this question.

WEDNESDAY, NOV. 23RD.

Sleeping Sickness in Nyasaland.

Sir J. D. REES asked the Secretary of State for the Colonies whether he had received information to the effect that two cases of sleeping sickness had occurred in Nyasaland in an area in which Glossina palpalis was believed not to exist; and whether any inquiries had been made into the matter and steps been taken to prevent the spread of the disease.—Mr. HARCOURT replied: I regret to say that the honourable Member has understated the case. I have received information of nine cases of sleeping sickness in Nyasaland, and there seems to be strong evidence that Glossina palpalis does not exist in the area in which they occurred, although I should hesitate to commit myself to a definite statement on the subject until the area has been further searched for the fly in question. The Acting Governor has already taken steps for dealing with the situation, of which he recognises the gravity, although he does not consider that there is at present cause for undue alarm.

BOOKS, ETC., RECEIVED.

AMERICAN CLIMATOLOGICAL ASSOCIATION (Secretary: Dr. Guy Hinsdale, Hot Springs, Va., U.S.A.).
Transactions of the American Climatological Association. For the Year 1910. Vol. XXVI. Price not stated.

APPLETON, D., AND CO., New York and London.
A Text-book of Bacteriology. A Practical Treatise for Students and Practitioners of Medicine. By Philip Hanson Hiss, Jr., M.D., and Hans Zinsser, M.D. Price 15*s.* net.

ARROWSMITH, J. W., Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND COMPANY, LIMITED, London.
Memories of Eighty Years. By John Beddoe, M.D., LL.D., F.R.S. Price 7*s.* 6*d.*

BAILLIÈRE, TINDALL, AND COX, London.
Notes on Dental Metallurgy. For the Use of Dental Students and Practitioners. By W. Bruce Hepburn, L.D.S. Glasg. Price 5*s.* net.

CASSELL AND CO., LIMITED, London, New York, Toronto, and Melbourne.
Essays on Duty and Discipline. A Series of Papers on the Training of Children in Relation to Social and National Welfare. Price not stated.

CHURCHILL, J. AND A., London.
A Text-book of Pharmacology and Therapeutics, or the Action of Drugs in Health and Disease. By Arthur R. Cushny, M.A., M.D., F.R.S. Fifth edition, thoroughly revised. Price 15*s.* net.
Practical Physiological Chemistry. A Book designed for Use in Courses in Practical Physiological Chemistry in Schools of Medicine and of Science. By Philip B. Hawk, M.S., Ph.D. Third edition, revised and enlarged. Price 16*s.* net.
Plant Anatomy from the Standpoint of the Development and Functions of the Tissues, and Handbook of Micro-Technic. By William Chase Stevens, Professor of Botany in the University of Kansas. Second edition, revised and enlarged. Price 10*s.* 6*d.* net.

FUNK AND WAGNALLS COMPANY, New York and London.
Parent and Child. A Treatise on the Moral and Religious Education of Children. By Sir Oliver Lodge, D.Sc., F.R.S. Price 2*s.* net.

HILTON AND CO., 109, College-street, Calcutta. THACKER, W., AND CO., London.
A Treatise of Materia Medica and Therapeutics, including Pharmacy, Dispensing, Pharmacology, and Administration of Drugs. By Rakhaldas Ghosh, L.M.S., Cal. Univ. Edited by J. T. Calvert, M.B. Lond., M.R.C.P. Lond., Lieut.-Colonel, Indian Medical Service. Fourth edition. Price Rs. 5, or 7*s.* 6*d.*

LAURIE, T. WERNER, London.
The Religions and Philosophies of the East. By J. M. Kennedy Price 6*s.* net.

LEWIS, H. K., London.
The Care of Infants and Young Children in Health. By Mildred M. Burgess, M.D. Lond. Price 1*s.* net.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.
Dispensing Made Easy. With Numerous Formulæ, and Practical Hints to secure Simplicity, Rapidity, and Economy. By W. G. Sutherland, M.B. Aberd. Fourth edition. Revised by F. J. Warwick, B.A., M.B. Cantab., M.R.C.S., L.S.A. Price 3*s.* 6*d.* net, or interleaved, 4*s.* 6*d.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BALLS, LEONARD C., L.D.S. Eng., has been appointed Honorary Dental Surgeon to Mount Vernon Hospital for Consumption and Diseases of the Chest.

CARGILL, L. VERNON, F.R.C.S. Eng., has been appointed Senior Ophthalmic Surgeon to King's College Hospital.

CREAN, FRANCIS S., L.R.C.P. & S. Irel., has been appointed House Physician to the Hampstead General Hospital.

GOUGH, ALFRED, Ch.M. Leeds, F.R.C.S. Eng., has been appointed Surgical Registrar to the General Infirmary, Leeds, and Surgical Tutor in the University of Leeds.

HACKER, H. P., M.B., B.S., has been appointed Junior House Physician at King's College Hospital.

HARWOOD, T. E., M.B., Ch.B. Edin., has been appointed House Surgeon to the Hampstead General Hospital.

JAMIESON, H. C., M.B., M.R.C.S., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

JONES, HOWEL BUCKLAND, M.B. Edin., has been appointed Surgeon to the Metropolitan Ear, Nose, and Throat Hospital.

KENNEDY, D., M.B., B.S., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at University College Hospital.

MCDONALD, GILBERT REGINALD, L.R.C.P. & S. Irel., has been appointed Medical Officer for the Halberton and Sampford Peverell Districts by the Tiverton (Devon) Board of Guardians.

MACDONALD, REGINALD N., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Parish of Tobermory.

MOUAT, THOMAS B., M.B., Ch.B., has been appointed House Surgeon at the Chelsea Hospital for Women.

O'MAHONY, J. J., M.B., B.S. R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Bantry District of the county of Cork.

RAYNER, H. H., M.B., B.Ch. Vict., F.R.C.S. Eng., has been appointed Surgeon to the Manchester Children's Hospital, Pendlebury.

SWORN, A. B., M.B., B.S. Lond., has been appointed Junior House Surgeon at the Blackburn and East Lancashire Infirmary.

THOMAS, JOSIAH TELFER, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Camborne (Cornwall) Public Dispensary.

TRINDER, ALFRED PRORUS, L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer by the Bodmin (Cornwall) Board of Guardians.

VINING, C. WILFRED, M.D., B.S. Lond., has been appointed Casualty Physician to St. Mary's Hospital.

WALKER, C. F., M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Medical Officer at the Eccles and Patricroft Hospital, Manchester.

WEBB, WILLIAM HENRY, M.D. Durh., L.R.C.P. Lond., M.R.C.S., L.S.A., has been reappointed Medical Officer of Health to the Kingsbridge (Devon) Urban District Council.

WEBBER, L. M., M.R.C.S., L.R.C.P. Lond., has been appointed Second Assistant Medical Officer at the Surrey County Asylum, Netherne.

WILLIAMS, SYDNEY RICE, M.B. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Buckfastleigh (Devon) Urban District Council.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ALBERT DOCK HOSPITAL, Connaught-road, E.—Senior House Surgeon, also House Surgeon, both for six months. Salary £100 and £50 per annum respectively, with board, residence, and washing.

BENENDEN SANATORIUM.—Medical Superintendent. Salary £250 per annum, with rooms, board, and laundry.

BETHLEM HOSPITAL.—Resident House Physician, unmarried, for six months. Salary at rate of £25 per quarter, with apartments, board, and washing.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary £100 per annum, with board and attendance.

BODMIN, CORNWALL COUNTY COUNCIL.—County Medical Officer of Health. Salary £500 per annum.

BRECONSHIRE COUNTY COUNCIL.—County Medical Officer of Health and County School Medical Officer. Salary £500 per annum.

BRISTOL ROYAL INFIRMARY.—Honorary Dental Anæsthetist. Also Honorary Registrar to Special Departments.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Surgeon for six months. Salary £30, with board, residence, and laundry.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with rooms, board, washing, and attendance.

DENBIGH, COUNTY OF.—County Medical Officer of Health. Salary £600 per annum.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Resident Medical Officer. Salary £100 per annum, with board, residence, and laundry. Also Medical Officer for six months. Salary at rate of £100 per annum, with luncheon and tea provided.

GILLINGHAM (KENT), BOROUGH OF, EDUCATION COMMITTEE.—School Medical Officer. Salary at rate of £250 per annum.

GLOUCESTER, BARNWOOD HOUSE HOSPITAL FOR MENTAL DISEASES.—Second Assistant Medical Officer. Salary £150 per annum, with board.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Two Assistant House Surgeons. Salary £75 per annum, with board, residence, and laundry.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale, W.—Resident Medical Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

INDIAN MEDICAL SERVICE, India Office, London.—Fourteen Commissions in His Majesty's Indian Medical Service.

KING'S COLLEGE HOSPITAL, London, W.C.—Assistant Ophthalmic Surgeon.

LEAMINGTON SPA, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—House Governor and Secretary. Salary £200 per annum.

LEEDS GENERAL INFIRMARY.—Resident Obstetric Officer for six months, Two House Physicians for six months, and House Surgeon for twelve months. Board, washing, and lodging provided.

LEICESTER CORPORATION ISOLATION HOSPITAL.—Resident Medical Officer and Assistant Medical Officer of Health. Salary £150 per annum, with board and residence.

MANCHESTER, ANCOATS HOSPITAL.—Honorary Surgeon.

MANCHESTER, ST MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Clinical Assistants for six months.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Honorary Surgical Registrar. Also Pathologist. Salary £50 per annum.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East.—Milroy Lecturer for 1912.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Assistant Physician.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square, W.—Honorary Anæsthetist.

ST. THOMAS'S HOSPITAL.—Dental Surgeon.

SALFORD COUNTY BOROUGH FEVER HOSPITAL.—Assistant Medical Officer. Salary £150 per annum, with apartments and board.

SHEFFIELD UNION HOSPITAL.—Resident Assistant Medical Officer, unmarried. Salary £100 per annum, with apartments, rations, &c.

SOUTH UIST.—Medical Officer. Salary £100, with house.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

STOCKTON-ON-TEES, STOCKTON AND THORNABY HOSPITAL.—House Surgeon, unmarried. Salary £180 per annum, with residence, board, and washing.

THROAT HOSPITAL, Golden-square, W.—Resident House Surgeon. Salary £75 per annum, with board, residence, and laundry.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

UNIVERSITY OF LONDON.—Examiners.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—Senior Resident Medical Officer. Salary £120 per annum, with board, residence, and washing.

WAKEFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer. Salary £140 per annum, with apartments, board, washing, and attendance.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Assistant Physician. Also Honorary Medical Registrar. Also House Physician for six months. Board, lodging, and laundry allowance provided.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Pimoleague, in the county of Cork; at Hornsea, in the county of Yorks (East Riding); and at Leven, in the county of Fife.

Births, Marriages, and Deaths.

BIRTHS.

BECK.—On Nov. 17th, at Bromyard, the wife of Ashton Beck, M.B., of a daughter.

CONAN DOYLE.—On Nov. 19th, at Windlesham, Crowborough, the wife of Sir Arthur Conan Doyle, of a son.

DANIEL.—On Nov. 14th, 1910, at 1A, Upper Wimpole-street, W., the wife of Peter Daniel, F.R.C.S., of a son.

WAGSTAFF.—On Nov. 19th, at Abington-street, Northampton, the wife of Frank A. Wagstaff, M.R.C.S., L.R.C.P., of a daughter.

WORTON.—On Nov. 20th, at Great Castle-street, W., the wife of A. S. Worton, M.D., F.R.C.S., of a son.

MARRIAGES.

BENETT—FAULKNER.—On Nov. 15th, at Bombay, India, Captain Arthur Morris Benett, R.A.M.C., of Jubbulpore, India, to Maude Elizabeth Faulkner, second daughter of the late Dr. J. J. Faulkner and Mrs. Faulkner of Dallington, Northampton.

CARNARVON-BROWN—KNIGHT.—On Nov. 16th, at St. Mary's, Petworth, by the Rev. A. J. Rendle (cousin of the bridegroom) and the Rev. J. T. Penrose, Rector, and the Rev. E. Frost, Arthur Carnarvon-Brown, M.R.C.S., London, younger son of the late Charles Brown of Carnarvon, Bournemouth and Queensland, and Mrs. Charles Brown of Bournemouth, to Kathleen Sherwin, only child of A. A. Knight, Esq., of Petworth, Sussex.

GRIFFIN—LITTLEJOHN.—On Nov. 17th, at Highfield Church, Southampton, John Purser Griffin, M.R.C.S., L.R.C.P., of Baldock, Herts, to Effie, eldest daughter of Frank Littlejohn of Westwood-road, Southampton.

WOLFE—PEARCE.—On Nov. 17th, at St. Mary Magdalene, Taunton, James Francis Wolfe, M.B., to Fanny A. B. Pearce, daughter of the late W. B. Pearce, Fleet Paymaster, R.N.

DEATHS.

BOLTON.—On Nov. 4th, 1910, at Blackpool, Dr. Frank Robinson Bolton, formerly of Birmingham, sixth son of the late Edward Bolton Interred in the family vault, St. Paul's, Warrington.

BROWN.—On Nov. 17th, at Tredegar, very suddenly of heart failure, George Arthur Brown, J.P., M.R.C.S., L.S.A., aged 67 years.

GOSS.—On Nov. 20th, at The Circus, Bath, Tregenna Biddulph Goss, M.R.C.S. Eng., aged 73 years.

PAYNE.—On Nov. 16th, at Lyonsdown House, New Barnet, Joseph Frank Payne, M.D., Fellow and Emeritus Harveian Librarian of the Royal College of Physicians.

ROSS MURRAY.—On Nov. 17th, at the Avenue, Gipsy Hill, S.E., John Ross Murray, M.D. Edin., F.R.C.S. Edin., Brigade Surgeon Lieutenant-Colonel A.M.S. (retired).

STIELL.—On Nov. 15th, at East Dulwich-road, S.E., John Stiell, M.D.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

MALAY STATES' MEDICAL REPORT.

THE Federated Malay States are situated on the Malay Peninsula, and are closely connected with the Straits Settlements; they consist of the States of Pêrak, Selángor, Negri Sembilan, and Pahang, which have by treaty (1895)) renewed their engagements with the British Government, and are administered under the advice of a British Resident-General (Sir William T. Taylor, K.C.M.G.), who controls the residents subject to the instructions of the High Commissioner, who is also Governor of the Straits Settlements (Sir John Anderson, G.C.M.G.). The first three States are on the west coast, and Pahang on the east. All are governed by their native rulers under the above-mentioned control. The Resident-General's annual report for the year 1909 has just been issued from the Colonial Office. From this it appears that the number of patients treated in the hospitals was 73,192, as against 84,105 in 1908. The death-rate in the hospitals works out at 9·88 per cent. The decrease was general throughout the Federation, and cannot be regarded otherwise than with considerable satisfaction. The number of out-patients treated was 150,086; 25,675 patients were treated in Perak by the travelling dispensaries, and the same means of bringing medical aid within the reach of the natives is being introduced into Pahang, where a travelling dispensary has been established on the Pahang river. There were no cases of cholera or plague, and only five of small-pox. There were 68 cases of typhoid, with fatal results in 9 cases. There were 5 cases of blackwater fever, 2 of a very severe type ending fatally. Malarial fever was responsible for 17,386 cases, a decrease of 1000 cases as compared with 1908; the number of deaths was 936, equal to 5·38 per cent., a very satisfactory decrease. Constant attention is given to the matter of draining all swamps and similar places which might provide breeding grounds for the mosquito which transmits the parasite. The investigations of Dr. H. Fraser and Dr. A. T. Stanton have enabled the Government to combat with some success the very prevalent disease of beri-beri. The admissions amounted to 5469, with a death-rate of 12·05 per cent., as compared with 9790 cases, and a percentage of 19·52, in 1908. In all Government institutions the use of white polished rice is being discontinued and cured or parboiled rice is being substituted with very satisfactory results. Cases of dysentery and diarrhœa were 7197, with 1760 deaths, as compared with 9873 cases and 3263 deaths in 1908. Pulmonary diseases accounted for 3866 cases, as against 4209 in 1908. There was an outbreak of measles at Benus, in Pahang. 148 persons were attacked, of whom 8, all children, died from broncho-pneumonia following the disease. 33,782 persons were vaccinated. It is hardly possible to obtain an accurate figure of the percentage of successful operations, as a very large number of subjects never present themselves for subsequent examination. A hospital for Malays has been opened at Kuala Kangsar, and, in spite of some diffidence at the beginning on the part of those for whose benefit it is intended, has proved a marked success. 295 patients were admitted, of whom 51 were females. The outdoor department treated 1444 persons, and the medical officer in charge paid 87 visits to H.H. the Sultan, the native chiefs, and their families.

In regard to the Institute of Medical Research, Dr. Fraser, the director, was in charge throughout the year. Dr. W. Fletcher, the pathologist, went on leave in May, and Dr. Stanton undertook his duties in addition to his own work of bacteriologist. Mr. Eton, the chemist, remained in his appointment during the year. The greater part of the year was occupied with further research into the etiology of beri-beri, and it is satisfactory to record that the work has met with a considerable degree of success. Experiments on the lower animals with different kinds of rice have been carried out and will be yet further extended. The prevention of ankylostomiasis has received considerable attention. Dr. Stanton conducted a careful inquiry into the subject and submitted a very valuable report to the Government. Consequent on this a circular was drawn up by the director, in conjunction with the Director of Public Works, with plans attached, dealing with the question of latrine accommodation and water-supply. This was issued to all estate managers, who were invited to coöperate with the Government in eradicating and preventing infection with this scourge. In connexion with this matter Dr. Stanton also made a number of blood examinations of estate labourers and it was new to find a large number of parasites in the blood of coolies otherwise apparently healthy. The director states that, while drainage in low lands is attended by a marked improvement in the health of coolies, the same measures on high land seem to be comparatively useless.

M.O.H.—If the cycle is kept wholly for professional purposes our correspondent can deduct the cost of upkeep and possibly get an allowance for depreciation. A moderate sum would also be allowed for professional journals and subscriptions to professional societies.

A POINT IN EPISTAXIS.

To the Editor of THE LANCET.

SIR,—Some time ago a patient called at my place with bleeding from his nose which had been going on for some hours. I found a considerable flow from one nostril, and after syringing the cavity with no effect I proceeded to plug the nares, but the gauze was quickly saturated and blood dropped freely. I was at my wits' end when, whilst replugging, I found to my disgust that the hæmorrhage was coming from some dilated vessels on the external surface of the alæ on one side. The minute opening I cauterised and trouble was over.

I am, Sir, yours faithfully,

Innisfail, Queensland, Oct. 7th, 1910. ED. P. L.

WANTED, SUGGESTIONS FOR TREATMENT.

To the Editor of THE LANCET.

SIR,—I should be greatly obliged if any of your readers could suggest an effective treatment in an obstinate case of Raynaud's disease in a young lady. All the usual remedies seem to have been tried without any apparent improvement. I am, Sir, yours faithfully,

Nov. 22nd, 1910. MEDICUS.

PANTOPON.

To the Editor of THE LANCET.

SIR,—In your issue of Nov. 5th your Swiss correspondent refers to a paper on "Scopolamine-Omnopon (Pantopon) Narcosis" by Dr. Brüstlein. With reference to the concluding remarks of your article, we would point out that it has now been ascertained that the solutions keep perfectly if kept in sterile ampoules, and the necessity for preparing fresh solutions as indicated by your correspondent is thus obviated. Ampoules of omnopon and scopolamine can now be obtained in the various strengths suggested by Dr. Brüstlein.

Yours faithfully,

THE HOFFMANN-LA ROCHE CHEMICAL WORKS, LTD.

Idol-lane, London, E.C.

WANTED, A SCHOOL FOR BOY WITH SMALL LEARNING POWERS.

To the Editor of THE LANCET.

SIR,—Can any of your readers suggest a school, in the north of England or the Midlands, suitable for a boy of 13 years who is extremely deficient in learning power? He is a sensitive, nervous little chap, and his parents would like a school where he would be "mothered" to some extent. The boy is too bright to go to a school for really defective children, for he is quite intelligent to talk to and quite clean and healthy in his habits. He has a fair memory for things that have happened, yet cannot remember the alphabet nor learn to read. The father is a small farmer who could pay up to about £40 a year for tuition and board during school terms.

I am, Sir, yours faithfully,

Nov. 16th, 1910. COUNTRY MEDICO.

ERRATA.—"Kuatsu" and the "Heart Reflex of Abrams" (THE LANCET, Nov. 19th, 1910, p. 1502). Instead of "from 1 to 2 centimetres" read "1·2 centimetres." Instead of "from 2 to 7 centimetres" read "2·7 centimetres."

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1910:—

Dec. 8th and 9th (London, Guildhall).—Conference of Health-promoting Institutions and Fifth Annual General Meeting of the National League for Physical Education and Improvement.
" 19th–22nd (Rome).—Twentieth Congress of Internal Medicine.

In 1911:—

Feb. 20th–25th (Cairo).—Fifth International Congress for the Blind.
March 2nd–6th (Berlin).—Thirty-second Balneological Congress.
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
April 19th–22nd (Wiesbaden).—Twenty-first German Congress of Internal Medicine.
May–October Dresden).—International Hygiene Exhibition.
May–October (London, Crystal Pa ace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May–October(?) (London, Shepherd's Bush).—Coronation Exhibition.
June (Paris).—First Congress of the International Medical Association for the Prevention of War.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Birmingham).—British Medical Association.
July 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September Brussels).—Exhibition of Fractures.
Sept. 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
" 18th–23rd (Sydney).—Australasian Medical Congress.
" 24th–30th (Rome).—International Congress on Tuberculosis.
" 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.

October (Cologne).—International Congress of Criminal Anthropology.
(Date not fixed) (Genoa).—International Exhibition of Marine Hygiene.

In 1912:—
July (?) (Cologne).—International Congress of Nurses.
September (Prague).—International Congress of Radiology and Medical Electrology.
September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.

In 1913:—
(London).—Seventeenth International Congress of Medicine.
(Dresden (?)).—International Conference on Cancer.

In 1915:—
(London).—International Prison Congress.
(London),—Imperial Exhibition (?)

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

MONDAY.

ODONTOLOGICAL SECTION (Hon. Secretaries—E. B. Dowsett, W. W. James, J. Howard Mummery): at 8 P.M.

Papers:
Mr. Frederick Sleep: Successful Surgical and Prosthetic Treatment of Excessive Hypertrophy of the Alveolar Processes of the Jaws.

Casual Communication:
Mr. H. A. T. Fairbank: (1) Endothelioma of the Jaw in a Child; (2) Cyst of Jaw (? Dentigerous).

TUESDAY.

SURGICAL SECTION (Hon. Secretaries—Jonathan Hutchinson, L. A. Dunn): at 5 P.M.

Adjourned Debate:
On the Treatment of Fractures in the Neighbourhood of Joints (Mr. Robert Jones's paper). Mr. H. J. Paterson, Mr. Douglas Drew, Mr. C. H. Fagge, Mr. J. Hutchinson, Mr. W. H. Clayton Greene, and others will take part.

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—G. F. Blacker, J. H. Targett): at 8 P.M.

Specimens:
Mr. J. Barris: Intestinal Obstruction caused by a Fibromyoma Uteri.
Mr. Douglas Drew: (1) Sarcoma of the Uterus; (2) A Case of Hermaphroditism.

Short Communication:
Dr. Louise McIlroy: Case of Hæmatosalpinx with Torsion.

Papers:
Dr. Archibald Leitch: The Pathological Bases of Operations on the Uterus.
Mr. Charles P. Childe: Twenty-three Cases of Wertheim's Abdominal Panhysterectomy.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—L. Hemington Pegler, W. H. Kelson), at 11, Chandos-street, W.: at 5 P.M.

Cases and Specimens
Will be shown by Dr. Scanes Spicer, Mr. C. A. Parker, Dr. L. H. Pegler, Dr. W. H. Kelson, Dr. H. J. Davis, Dr. A. Bronner, Mr. G. French, Dr. E. A. Peters, and others.

SECTION OF ANÆSTHETICS (Hon. Secretaries—R. W. Collum, Mrs. Dickinson Berry): at 8.30 P.M.

Paper:
Dr. Edwin Ash: Hypnotism in Relation to Surgical Anæsthesia.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Discussion on Dilatation of the Heart and Heart Strain (introduced by Dr. Goodhart). Sir Douglas Powell, Sir Lauder Brunton, Dr. S. West, Dr. W. Collier (Oxford), Dr. Davy (Exeter), and others have promised to take part in the discussion.

MEDICO-LEGAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

TUESDAY.—8.30 P.M., Dr. R. J. Collie, Mr. G. C. Gardiner, Mr. W. D. Knocker, Mr. A. S. Morley, Dr. F. J. Smith, and others: Notes on the Workmen's Compensation Act, 1906.

RONTGEN SOCIETY, 20, Hanover-square, W.

THURSDAY.—8.15 P.M., Dr. D. Butcher: Osmotic Growths.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Dr. Barnes: Motion—That Qualified Surgeon Dentists be admitted to the Society.—Clinical Cases.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersith.

FRIDAY.—8.30 P.M., Mr. J. E. R. McDonagh: Practical Experience with Ehrlich's New Specific for Syphilis.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. L. Bunch: Clinique (Skin). 5.15 P.M., Lecture:—Dr. J. H. Stowers: Drug Eruptions, their Nature and Varieties.

TUESDAY.—4 P.M., Dr. J. Taylor: Clinique (Medical). 5.15 P.M., Lecture:—Dr. T. D. Lister: Hæmoptysis.

WEDNESDAY.—4 P.M, Mr. J. Berry: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. F. W. Price: The Early Diagnosis of Pulmonary Tuberculosis.

THURSDAY.—4 P.M., Mr. L. H. McGavin: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. J. Galloway: On Arterio-sclerotic Degenerations of the Skin.

FRIDAY.—4 P.M., Mr. D. Mackenzie: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Dunn: Purulent Conjunctivitis in the Infant and Adult.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Medical Registrar: Gastric Ulcer.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Morton: X Ray Examination of the Urinary System.

THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.

FRIDAY.—10 A.M., Medical Registrar: Demonstration of Cases in Wards. Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. R. Lloyd: Anæsthetics.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Prof. Hewlett: Antitryptic Power of the Blood and its Variation in Disease.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 2.15 P.M., Special Lecture:—Dr. F. Taylor: Anæmia.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

MONDAY.—5.15 P.M., Demonstration:—Dr. J. H. Thursfield: Food and Food Diseases—Congenital Pyloric Stenosis. (Special Post-Graduate Course.)

WEDNESDAY.—5.15 P.M., Demonstration:—Dr. J. H. Thursfield: Food and Food Diseases—Tuberculosis in Infancy and its Causes. Treatment of Milk intended for Infant Feeding. (Special Post-Graduate Course).

THURSDAY.—4 P.M., Lecture:—Dr. Frew: Pathological Demonstration.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Dr. Perkins: Pneumothorax.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture —Dr. G. Stewart: Subacute Combined Degeneration of the Spinal Cord.

FRIDAY.—3.30 P.M., Clinical Lecture:—Sir Victor Horsley: Indications for Operative Treatment in Intracranial Disease.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY AND FRIDAY.—3.45 P.M., Lecture:—Dr. D. Grant: Methods of Examination.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Paratuberculides (due to Tuberculous Toxins)—I., Macular, II., Papular; III., Pustular; IV., Pigmentary.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. C. H. Melland: Epilepsy. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (30th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (1st).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 23rd, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Nov. 17	29·64	N.W.	...	44	41	32	32	33	Foggy
,, 18	29 63	W.	...	67	46	33	35	37	Cloudy
,, 19	30·10	N.W.	...	60	42	36	34	36	Fine
,, 20	30 04	W.	0·03	58	40	31	33	34	Raining
,, 21	30·02	N.W.	0·03	52	43	30	31	31	Foggy
,, 22	30·11	N.W.	...	43	42	30	31	31	Foggy
,, 23	30·04	E.	...	41	39	31	33	33	Foggy

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The Purbis Oration

ON

THE TREATMENT AND PROGNOSIS OF EXOPHTHALMIC GOITRE.

Delivered before the West Kent Medico-Chirurgical Society on Dec. 2nd, 1910,

BY W. HALE WHITE, M.D. LOND.,
SENIOR PHYSICIAN TO GUY'S HOSPITAL.

GENTLEMEN,—When I look down the list of those who have in previous years delivered this oration I feel much flattered by being asked to give it, and can assure you I thank you heartily for having invited me. It is a particular gratification to me, for the first orator was my teacher and friend, that fine surgeon and excellent man Arthur Durham.

The subject I have chosen, with the consent of your secretary, is one about which the teaching as to treatment is very various; if a surgeon writes about exophthalmic goitre he usually conveys the impression that most of the patients ought to have a considerable part of their thyroid gland removed or rendered functionless; on the other hand, the physician most often advises that this should not be done. Further, many authors leave us much in the dark as to what becomes of the sufferers from exophthalmic goitre. Nor is this surprising, for it is usually a chronic disease, and those who have it often pass out of the notice of those who first observed them. It is often forgotten that before we can tell whether any particular treatment is good or bad we must know what would happen to the patients if no treatment were adopted. Something may be learned about this if we trace the after-history of hospital patients, because after they have left the hospital and gone to their own homes in most cases very little systematic treatment is possible.

PROGNOSIS.

My clinical assistant, Dr. Jan Mahomed, kindly wrote to all the hospital patients, 148 in number, who had been in Guy's Hospital during the years 1888–1907 (both inclusive) suffering from exophthalmic goitre and who had been discharged. Many had moved, many did not reply to the letters, but 54 could be traced. Now of these 54 there were 12 who did not improve at all during their stay in the hospital, and yet ultimately got quite well or nearly well. This cannot have been due to the shortness of their stay in the hospital, for the number of days which each respectively remained in the hospital were 49, 14, 11, 36, 14, 95, 46, 58, 55, 45, 170, and 9, which gives an average stay of 50 days. I will not weary you with reading the history of each of the 12 cases, but let me mention a few.

CASE 1.—A woman, aged 20; in the hospital 49 days; no better on discharge but gradually got better; has worked hard for last 18 years. After leaving the hospital she married and had three children and is now a widow. Is quite well and has had no special treatment.

CASE 2.—A woman, aged 20; a severe case; in the hospital 58 days; no improvement; heard of five years after and is very much better and in a situation as a lady's maid.

CASE 3.—A woman, aged 42; was in the hospital 55 days; average case; had had the symptoms three years. No better on discharge. Heard of four and a quarter years after when she was wonderfully better.

CASE 4.—A woman, aged 34; was in the hospital 170 days; average case; had had the disease one and a half years. No improvement in the hospital; was able to work four months after discharge; heard of four years later when she said she was quite well.

CASE 5.—A woman, aged 19; was in the hospital 36 days; had had the disease one and a quarter years; average case; only slight improvement on discharge eight and a half years ago. Is now quite well and has been in service five years without a single day's illness.

CASE 6.—A woman, aged 42; in the hospital 46 days; mild case; no improvement on discharge. Came up to show herself five and a quarter years after; much better; hardly any signs of the disease left.

I have thus given you brief details of six of the 12 cases, and in the other six the story is the same. They certainly seem to show that in some persons at least there is a natural tendency for exophthalmic goitre to get well. No doubt this operates more often than these figures show, for it must have helped some of those who improved while in the hospital. We also learn that some who are afflicted with this disease recover without treatment. We rarely see death due to exophthalmic goitre, and we do not often see elderly women with it. These two facts illustrate the natural tendency of the disease to get well.

But it might be the reason why we do not often see elderly people with it is that although the malady itself does not often kill, yet sufferers from it are bad lives, inasmuch as they die more readily than most people from other diseases. About 25 years ago I published a few cases that I had followed up for some years which appeared to show that this was so; now I have tried to come to a more certain conclusion by following up a much larger number of cases. I shall at present deal only with cases which have not been operated upon.

I have been able to trace with the help of Dr. Jan Mahomed 49 patients who have been in Guy's Hospital during the 20 years 1888–1907 (inclusive), and I myself, with the hearty coöperation of their medical attendants, have been able to trace 53 private patients first seen between the years 1894–1909. Among the 49 hospital patients 8, and among the private 7, are now dead. I submitted my figures to my friend Mr. H. C. Thiselton and he has given me an actuarial report.

First, concerning the hospital cases. A comparison of the actual deaths was made with the expected deaths according to the Healthy Females Experience of 20 British offices amongst assured lives. The comparison shows that the total number of deaths was 8, as against 5 according to the experience of 20 British offices.

Secondly, as regards the 53 private patients the comparison shows that the total number of deaths was 7, as against 3 according to the experience of 20 British offices.

Putting the two groups together we see that the total deaths were 15, but the expected deaths among the same number of women of the same ages and followed up for the same time was according to the Healthy Females Experience table 8.

These figures suggest that if it were possible to obtain a great many more cases we should be able to prove that the expected mortality of sufferers from exophthalmic goitre not operated on who have been in a hospital and have been discharged and of sufferers from it in private practice who sought a second opinion (for all the private patients were referred to me by their usual medical attendant) would be about twice as great as it should be. In other words, sufferers from exophthalmic goitre are to some extent bad lives, but when we say that the mortality among them is about twice that of healthy women of the same age we must remember that those who have exopthalmic goitre are usually of such an age that the number of expected deaths among the healthy of that age for the next few years of their life is not great, therefore the increased number of deaths among those who have exophthalmic goitre does not represent a serious mortality. Too precise conclusions must not, however, be drawn from these figures, for all the cases here considered were either ill enough to come into hospital or to seek a second opinion. If all cases, and therefore many mild cases, of exophthalmic goitre were considered, the difference between the expected deaths among healthy women and those with exophthalmic goitre would doubtless be smaller. On the other hand, the comparison just made neglects those who died in the hospital with exophthalmic goitre; the inclusion of them would accentuate the difference between the expected deaths among the healthy and those among sufferers from exophthalmic goitre; but if we included in our comparison all those who in 20 years died in the hospital with exophthalmic goitre we ought to include all those who had been in the hospital and could not be traced, and the inclusion of them would diminish the difference between the expected deaths among the healthy and those with exophthalmic goitre which had been increased by the inclusion of those who had died in the hospital. It seems, however, a fair conclusion that the expected deaths among sufferers from exophthalmic goitre is somewhat, but not very much, greater than among the healthy—in other words, they are rather bad lives.

This conclusion leads us to our next inquiry—namely, the cause of death among those who have this disease. Still excluding those who were operated on I have notes of 18 cases of patients who died in Guy's Hospital. Eleven of these had either vomiting or diarrhœa, or both, and in many these were either the cause of death or contributed to it. For example, there is the case of a woman, aged 31, with special symptoms of palpitation, vomiting, and diarrhœa. These persisted, and after death gastro-enteritis was found. The next patient on my list was in the hospital 60 days.

Vomiting and diarrhœa set in, progressed, and killed the patient. After death gastro-enteritis was found. Both these cases had a rare symptom—namely, jaundice. This was no doubt catarrhal and due to the gastro-enteritis. I need not weary you with details of the other 9 cases. I know the cause of death in 7 private cases and in only 1 was it owing to diarrhœa and vomiting. This difference is no doubt due chiefly to the fact that private patients are more likely than hospital patients to seek treatment for vomiting and diarrhœa early. Both these symptoms are by no means uncommon in exophthalmic goitre, and the cases here quoted point strongly to the fact that the patient should be put to bed and be suitably treated directly vomiting or diarrhœa show themselves.

Combining the deaths among hospital and private patients, 6 died delirious, 1 became comatose, 2 had melancholia, and 1 had mania. We are thus reminded of the association of an unstable nervous system and exophthalmic goitre. Three had endocarditis, 1 had pericarditis, 2 died from rheumatic fever, and 1 attributed the disease to it. These illustrate the association between acute rheumatism and exophthalmic goitre. Two died from diabetes. It is well known that glycosuria occurs in association with exophthalmic goitre and so two deaths from diabetes hardly surprise us, but sometimes, as the exophthalmic goitre gets better, the accompanying glycosuria passes away. Thus I know a woman who nearly 20 years ago had glycosuria and exophthalmic goitre. The glycosuria passed away as she slowly recovered from her exophthalmic goitre and she is now perfectly well and has been so for 15 years at least. A smaller percentage of private than of hospital patients die, but that is what might have been expected considering that rest is the most important part of the treatment.

AFTER HISTORIES.

Let us now consider what becomes of those patients who are not operated upon and who do not die. I have been able to find this out with regard to 40 of the patients who were in the hospital from 1888 to 1907 and with regard to 47 of the private patients seen between 1894 and 1909. I have grouped them into three groups: (*a*) Those who have done well; (*b*) those who are moderately well or simply describe themselves as better; and (*c*) those who are not well. The following table shows the result:—

	Done well.	Moderately well.	Not well.
40 hospital cases	26	12	2
47 private cases	35	9	3

This is a very satisfactory result, especially as the cases have been traced for so long a period since they were first seen. Out of 87 cases 61 have done well and only 5 have not done well. In order to prove to you that the cases which are said to have done well really are well I will give you a few examples. Taking first the hospital cases—No. 1: The patient has required no treatment since he left the hospital 21 years ago. No. 4: This was a bad case; in the hospital 20 years ago; since has worked hard for 18 years, has married, has had three children, and is now a widow. No. 6: In the hospital 20 years ago; since then has worked as a district nurse. Subsequently married and has four children. No. 9: In the hospital 16 years ago; feels quite well; has not had a doctor for 12 years. No. 15: Was in the hospital 11 years ago, had had the disease for ten years; after leaving the hospital, since when she had had no treatment, she has married and has six children. No. 18: In the hospital 8½ years ago; is now quite well and has been in service for five years without a single day's illness. No. 24: The patient is included in this group as she is able to go to work. No. 25: Is working as a cook. No. 29: This patient does not know there is anything the matter. No. 32: Patient is now quite well and has been so since her discharge. No. 34: The patient is "wonderfully better." No. 35: The patient is perfectly well. No. 37: Patient has had no return of her old complaint and is married. No. 40: Was in the hospital 8¼ years ago; has been well ever since she left the hospital; went into service for four years, then married, has four children, and never needs a doctor, "although she pays into a club." No. 47: Was quite cured by an American goitre cure. No. 48: Patient attributes her improvement to pregnancy.

I will now briefly give you some examples from the private cases, and you will see that those which we have grouped among those that have done well have also really done well. No. 4, a severe case, although very nervous, has been very well and is still improving. No. 6: This case is of great interest, for the patient was very ill when I saw her, but now she does her household duties and goes for walks. No. 7: This patient also was very ill, but her pulse is now 80 and she is expecting her confinement daily. No. 8: Patient quite well. No. 9: Working as a schoolmistress. Nos. 10, 12, and 14: These patients are quite well. No. 15: Takes an average amount of exercise and is not debarred from any social functions. No. 17: Was very ill indeed. I have never seen greater exophthalmos, but that is now much less, and she can walk three miles and considers herself quite well. No. 18: Completely cured. No. 20: In seven months gained 28 lb. No. 21: A case of great interest. For seven years before I saw the patient she had had one lobe of the thyroid removed because of the disease. She got better for a time, but then the disease returned, and when I saw her she had most of the symptoms of exophthalmic goitre present in an extreme degree, and the remaining lobe of the gland was enormous, but after prolonged continuous rest she got quite well and can now walk to business and do a hard day's work. Her sister had the disease severely at the time the patient underwent the operation, but she was not operated upon; I saw her at the same time her sister was ill and she was well. Nos. 22, 23, 24, 25, and 26: These cases call for no comment. The patients are all in good health and apparently are cured. No. 29: Patient is in very good health and goes to dances. No. 30: This patient also says that she is in very good health and is busy from 7 A.M. to 10 P.M. No. 31: Patient has done very well. No. 34: Was very ill. She had a loud systolic murmur and great œdema of the legs, yet "she got practically well and went to New Zealand." No. 35: This case does not call for comment. No. 36: Patient can go for long walks. No. 39: A very severe case. Got quite well. No. 40: Got quite well. No. 41: This was a very severe acute case following influenza. The thyroid became much enlarged in 14 days, and when I saw the patient the restlessness and sleeplessness were so formidable and his pulse was so weak that it was thought he would die, yet within 12 months he was riding across country. No. 42: Got quite well. No. 44: Another severe case following influenza. Patient got quite well. No. 45: This case occurs in the list of those patients who died. The patient, however, recovered from her exophthalmic goitre, but some years later succumbed to diabetes. No. 48: Many years ago the patient had exophthalmic goitre and a fibroid of the uterus. When the fibroid shrank so did the thyroid. She got well (except for slight exophthalmos) of her exophthalmic goitre. I saw her for acute pneumonia, from which she recovered at the age of 67 without any return of the exophthalmic goitre. No. 49: Of interest as being a very severe case. No. 50: A very severe case, and when I first saw the patient 14 years ago she also had glycosuria. This disappeared in two years and had not returned since. Two years after she was first seen she could walk eight miles. She has for many years been perfectly well. No. 51: A very severe case. The exophthalmic goitre was attributed to influenza. A loud systolic murmur was audible. The patient had much œdema of the legs, but he got perfectly well. Nos. 55 and 56: These patients got quite well.

Most of those that are classified as having done moderately well are much better. Among the hospital cases No. 11 has had several attacks of mental derangement, but she is now considerably better and in a situation. No. 13: Patient says her health is fairly good. She was able to take a situation after leaving Guy's; then she married and has had two children. Nos. 16, 21, and 23: These patients are now much better. No. 26: Patient has a little breakdown occasionally but is much better on the whole. No. 36: Is now much better. No. 38: Has improved. Nos. 43, 44, 46, and 54: These patients evidently, from the words they use, are all considerably better. Of the private cases, No. 1 really seems to do well as regards her exophthalmic goitre. her chief trouble is arterio-sclerosis and granular kidneys. No. 2 underwent treatment irregularly but she is somewhat better. No. 5 has improved somewhat, but her case is complicated by the fact that she has a mild degree of Raynaud's disease. No. 11 is slowly improving. No. 28 is well except that she is highly nervous and easily excited. No. 32 is better but did not rest as advised. No. 37 is well of her

exophthalmic goitre, but has become an introspective neurasthenic invalid. No. 43 is much better and able to work, although she says she is not well. No. 54 is better and in fair health, but she was very ill and had to have the isthmus divided to relieve dyspnœa. It will be noticed that many of those who did only moderately well had some other disease besides exophthalmic goitre, or that they did not rest as they were told.

Two of the five cases that are grouped as not doing well are somewhat better and the other three refused treatment.

I think you will agree with me that these cases show that if we follow the after-histories of exophthalmic goitre they teach that the great majority of the cases do well. The private cases are seen by the table to have done better than the hospital cases, but really much better than the figures in the table show, for we have seen that the mortality is higher among the hospital than among the private cases. The private cases probably do better than the hospital cases because they are better able to rest.

I have classified my cases into (*a*) mild or average, (*b*) severe, and (*c*) very severe. The table of results shows that 26 hospital cases and 35 private cases had done well. Now of the hospital cases that had done well 18 were mild or average, 7 were severe, 1 very severe; and of the 35 private cases that have done well 18 were mild or average, 9 were severe, and 8 were very severe. These figures are of great interest, for they show that more severe and very severe cases get well in private than in hospital practice, thus quite confirming the conclusion we had previously reached that the outlook for sufferers from the disease is better in private than hospital practice.

TREATMENT.

The last part of the subject which I propose to discuss this evening is treatment. I have notes of 11 cases in which operations have been performed upon the thyroid gland with a view of benefiting exophthalmic goitre. Of these cases four patients died as an immediate result of the operation. The first, a woman aged 30, had the disease to an average degree, but was anxious for operation as the disfigurement prevented her from following her occupation as a barmaid. The right lobe of the thyroid was removed; the next day she became very excitable and nervous; the temperature rose to 103° F., the pulse became very fast, and she died. The second patient, a woman aged 19, had the right lobe and isthmus excised. She died on the day after operation. The third patient, a woman aged 29, had both superior thyroids tied. Later, under the attempt to tie the inferior thyroid, she suddenly died. The fourth case was that of a young woman who died on the operating table just as the operation of removing the left lobe was being completed. Seven patients who were operated upon did not die. The first had one lobe removed; she says (five years after the operation) that she is better. The second had the right lobe removed six years ago. Now she says that she is fairly well and is better for the operation. The third had the left lobe and isthmus removed. She says that she received great benefit, but that now she is "very bad at times." The fourth had the right lobe removed, and is now perfectly well. The fifth had the left lobe removed, and she reports herself as being better but by no means well. The sixth had the left lobe removed. She was then better for a time, but the right lobe began to enlarge enormously and she again had all the symptoms of exophthalmic goitre to an extreme degree. The seventh was better for the removal of the right lobe, but 16 years after the report is: "Distinctly better; no exophthalmos; some tachycardia and palpitation. Nervous symptoms much the same. Still odd mentally." Of these 11 cases 9 were of average severity and 2 were severe; of the latter 1 died and 1 recovered.

The above proportion of 4 deaths out of 11 cases operated on is about the same as that given by Dr. Hector W. G. Mackenzie for similar operations at St. Thomas's Hospital. It must be specially remembered that this serious mortality of nearly 40 per cent. is an immediate mortality, some of the patients even dying on the operation table, the others within 24 hours of the operation. If the patients are not operated on, we have seen that there is no immediate danger in the great majority of cases, that the disease frequently gets quite well, and that the actual deaths among those with exophthalmic goitre are not very many greater than among healthy females. A further argument against operation is, as we have seen, that in several cases the patient is not cured by the operation.

It must be admitted, however, that in the hands of some surgeons doing many operations on the thyroid the mortality has been gradually brought down very much lower than the figures I have given. But to get the best results after operation those patients are selected who have not had the disease long, who have no lesions of other organs, and who have no mental symptoms. We have seen that if we exclude patients who are so ill that they die while in the hospital (and therefore are quite unsuitable for operation) and follow for some years the patients who are discharged from the hospital and those who are seen in private practice, the actual deaths among sufferers from exophthalmic goitre ill enough to go into the hospital or seek a second opinion are 15 as against 8 expected among healthy females, although these patients afflicted with exophthalmic goitre include severe and very severe cases, those with other diseases in addition, and those with mental symptoms. As, on the other hand, the cases selected for operation are chosen mostly from among the mild cases and a few die as an immediate result of the operation, it hardly seems likely that operations on the thyroid can diminish greatly the deaths that might, if the patients were not operated upon, be expected among such sufferers from exophthalmic goitre as are likely to be selected as suitable for having operations performed on their thyroid. It is, however, quite possible that operation may hasten the cure; if so, the justification for doing it will be greater among wage-earners than among others.

It would be of great interest if a large series of cases which have been operated on could be traced for many years after the operation, so that we might learn more about the rapidity of the improvement, the duration of it, and the number of deaths as contrasted with those that might be expected among a similar number of healthy females. This is particularly important, for if the thyroid, which after operation consists of one lobe, shrinks, it may be that this leads after years to a mild degree of symptoms due to insufficiency of thyroid secretion. At any rate, the cases here recorded show that many patients, even those severely ill, recover and remain well for years without any operation; and that those who decline operation can hardly be considered unreasonable, especially in this country, where the mortality from such operations is higher than in some others. Further, we have to bear in mind that we may sometimes be in error in attributing benefit to an operation for exophthalmic goitre, for we have already seen that some patients recover without any treatment, and so some operated upon might have done well even if no operation had been performed.

We have just learned that in some patients there is a natural tendency for the disease to get well, and therefore it is difficult to come to a precise opinion about other treatments than the operative, but my belief is that the most important is absolute rest in bed for many weeks. During the daytime the bed should, whenever possible, be out of doors, and if the weather permits, the patient may be out of doors at night, at any rate she should sleep with her windows wide open. Recently a woman with exophthalmic goitre also had typhoid fever, and it was of great interest to notice how much her exophthalmic goitre improved during the progress of the typhoid fever, presumably because of the enforced rest in bed. If after the patient has rested in one place for a few weeks she is moved to some different scenery, say from inland to where she can see the sea, this appears to hasten recovery. When she begins to get up she must do so very gradually and must be very careful of undue exertion.

Next to rest, the most important feature of treatment is food; most patients with exophthalmic goitre are thin, and they will improve as they gain in weight; plain, simple food, and plenty of it, is needed. They must not be worried, the rest must be tranquil, they must be spared the housekeeping and other domestic duties, and it is because private patients can, so much better than others, rest quietly that they do better. It is extremely hazardous to try to estimate the value of drugs for this disease. Lately I have often given Moebius's anti-thyroid serum. It may be given in milk, five minim doses to begin with, but rapidly increased to 30 minims, three times a day. It has appeared to do good, and some patients think they are better for it, but certainly other patients do just as well without it. Its cost is an objection. Rodagen, a white powder consisting of the dried milk of goats whose

thyroid has been removed, is often prescribed; it probably acts, if it acts at all, in the same way as Moebius's serum. If the patients are very restless and excitable, it is of the utmost importance that they should be kept quiet, and in extreme cases hyoscine is certainly the best drug for this. I remember seeing a man, aged 30, who had acute exophthalmic goitre following influenza; he had great tremor, was extremely restless and sleepless, and so ill that it was thought he would die. After a subcutaneous injection of hyoscine, 1/100 grain, he slept for the first time for a long while, and ultimately got quite well. For less severe cases paraldehyde is very useful, and for still less severe cases I usually prescribe bromides. If there is much tachycardia it seems only natural to give digitalis, and sometimes the patient seems better for it. The anæmia from which patients suffer usually passes away as they improve.

(Readers who wish for the details of each of the cases here mentioned will find them in the *Quarterly Journal of Medicine*, Vol. iv., No. 13.)

A Post-Graduate Clinic

ON

RECURRING ARTERIAL HYPERTONUS IN GRANULAR KIDNEY AND IN MIGRAINE.

Delivered in the Royal Infirmary, Edinburgh, on Sept. 6th, 1910,

BY WILLIAM RUSSELL, M.D., F.R.C.P. EDIN.,

PHYSICIAN AND LECTURER ON CLINICAL MEDICINE, ROYAL INFIRMARY, EDINBURGH.

GENTLEMEN,—There are two patients in the adjoining ward whom you will have the opportunity of seeing and examining for yourselves after I have given you an account of the clinical phenomena which have been noted in them during the time they have been in the ward.

GRANULAR KIDNEY.

CASE 1.—The patient is 52 years of age. She has had a checkered life, has been in this infirmary and in the workhouse hospital on more than one occasion for various ailments, and she frankly acknowledges to having been "fond of a good big dram." The details of such a life do not require to be dwelt upon; the results of it at 52 years of age are illustrative of a large group of cases, not all, however, presenting a personal and social history of hard work, poverty, ill-treatment, and bad habits. The patient was admitted on June 10th, 1910. She stated that for some weeks she had been breathless, especially on going upstairs, while latterly it was continuous; she also suffered from attacks of dizziness; her legs also at times became weak and shaky, and she had difficulty with her speech at times—she stammered and could not get the words out. She sought advice at the Cowgate Dispensary, was recommended to the infirmary, and was admitted under my care.

On admission the pulse was 80, the respirations were 24, the temperature was 97° F., and the brachial pressure was 295 mm. Hg. She was kept in bed, put on milk diet, and was given a dose of Henry's solution at night. The radial artery was thickened, but did not give the impression of anything like the pressure given by the brachial. The heart dulness at the apex was in the nipple line; the sounds were clear and slapping, and there was no murmur. The lungs were emphysematous but otherwise normal. The urine had a specific gravity of 1017, and showed a faint trace of albumin. The blood count and the amount of hæmoglobin were normal. The bowels moved once or twice daily. By the 14th the pressure had fallen to 185 mm. Hg. She was then given 5 grains of potassium iodide three times a day. On the 18th the pressure had fallen to 165 mm. and she was allowed light diet, which includes chicken and fish. From that date to July 2nd the pressure varied from 165 to 210 mm.—the level being somewhat higher after the increase in her diet than before that. On the forenoon of July 4th she was not so well, and, when I saw her, her face was flushed, she was propped up in bed with pillows, she looked dazed, and when spoken to could not articulate; the pulse was rather over 100, the respirations were 24 and laboured, and the brachial pressure had risen to 268 mm. She was given erythrol at once, and at night had a dose of mannitol. She rapidly regained her ordinary condition, had a good night, and next morning the pressure had fallen to 190 mm., and she felt in her usual health. On August 12th, with her pressure only at 202 mm., she complained of headache, a tingling sensation in the right limbs, right side of the trunk, and in the corresponding side of the tongue. These sensations continued, and she was given erythrol. On the 14th the pressure was 186 mm. On the 30th the patient was noted to be particularly well in the morning, but at about 6 P.M. she became restless; at 7.30 she complained of violent pain in the head, was breathless, and had difficulty in articulation; at 8.15 the pressure was 258 mm. and she was given erythrol; and at 9.30 the pressure had fallen to 207 mm., and as she was drowsy she was not disturbed again, and she soon fell asleep. The following morning the pressure had fallen to 175 mm., and since then she has been in her usual condition, the pressure keeping about 200 mm.

The course of the pressure may be tabulated thus:—

June 10th	295 mm. Hg.	August 14th	186 mm. Hg
,, 11th	230 ,,	,, 30th (8.15 P.M.)	258 ,,
,, 18th to July 2nd	165–210 ,,	,, ,, (9.30 P.M.)	207 ,,
July 4th	268 ,,	,, 31st	175–185 ,,
,, 5th	190 ,,	Sept. 1st	204–207 ,,
August 12th	202 ,,	,, 3rd	208–212 ,,

June 10th, July 4th, and August 12th and 30th were the dates of the attacks.

This patient is suffering from the effects of granular kidney and extensive arterial change, and I bring her case before you to illustrate the clinical lessons such a case supplies, and to impress upon you some points which it is of the first importance for our patients that we should understand the true significance of and be able to treat intelligently, and then, happily, successfully up to a certain point.

You will note that this woman on admission had a vessel pressure of 295 mm. Hg, one of the highest pressures I have had in this ward, and that rest in bed, the administration of a saline purge, milk diet, and later 5 grains of potassium iodide thrice daily brought the pressure down from 100 to 130 mm. During the period she has been in hospital she has sometimes shown symptoms which are classed as uræmic, such as restlessness, incoherence, dyspnœa; at other times, symptoms that are regarded as premonitory of cerebral hæmorrhage or cerebral softening from local anæmia or thrombosis, such as tingling in one-half of the body, confusion of thought, difficulty in articulation, even loss of articulate speech. She has had several minor manifestations in one or other of those directions; but she has had two or three graver attacks, in the first of which I was fortunate enough to see her and at once to recognise its nature. In all these attacks I ask your attention to the fact that the pressure showed a great rise—a rise which would doubtless have risen still higher had it not been arrested by therapeutic interposition. With such interposition, however, the pressure fell, as on July 4th, from 268 to 190, and on August 30th from 258 to 175 mm. With the fall of pressure all the urgently alarming symptoms disappeared; in fact, the arrest of its upward movement, and a fall even of 15 or 20 mm. brought visible relief to the symptoms, and this was effected in a remarkably short space of time. The association of a marked rise in hæmomanometer reading with such symptoms as I have indicated is in my experience always to be noted.

Neither the ordinary pressure nor the rise in pressure in these cases can always be estimated correctly by the finger on the radial artery. None of you would guess from this patient's radial artery that the pressure would be as high as it is; indeed, those of you who study blood pressure by the finger will think that it is even lower than normal. I entirely agree with those of you who may think so. The finger, I hold, is the only means by which you can estimate true blood pressure. True blood pressure to the clinician means the power of the left ventricle, and nothing else, as that can be estimated by the finger on an artery. The hæmomanometer reading, on the other hand, is only in part the result of blood pressure. The patient we are considering has

a variation in her hæmomanometer reading from 295 to 165—a margin of 130 mm., and certain eminent persons would ask us to believe that this is the margin of power in this woman's left ventricle, a margin which no healthy man in this room possesses. But I do not propose to argue this point: I have done that in other places. I merely state that this great margin of pressure, that these great variations in pressure, indicate to us the condition of the arterial wall—the degree of hypertonic contraction, or of relaxation of it. The armlet being applied to the upper arm gives us the condition of the brachial artery, which every now and again differs greatly from the bit of radial artery to be felt at the wrist. This observation as to the state of the brachial artery, added to your examination of the radial artery and pulse, you will find a great help in estimating correctly the state of the circulation in your patients.

Let me repeat that in this patient we had, and will have again, symptoms of uræmia, and symptoms which presage cerebral softening or hæmorrhage; that when these threatenings are present the hæmomanometer reading is found to have risen many millimetres. My contention is that the raised reading is due to hypertonic contraction of the artery from which the reading is taken. The symptoms are associated definitely with this phenomenon, for the moment you arrest the constrictive action the symptoms begin to disappear, and altogether disappear with the cessation of the hypertonus and the consequent fall in the hæmomanometer reading.

To you as graduates in medicine I need not labour to prove the great value, therefore, of this instrument, if you use it aright and interpret its readings correctly. I shall only ask you to realise what the phenomena are which are commonly recognised as presaging paralysis, hemiplegia being the commonest, associated or not with aphasia. Very many of these cases are preceded for days or for longer periods by recurring sensations of numbness or tingling, by temporary slight loss of power in a hand, an arm, a leg, difficulty in articulation, temporary loss of speech, feeling of mental confusion, temporary loss of memory, and so on. All these you will find associated with arterial hypertonus and a high hæmomanometer reading. The nervous phenomena can only be explained by the participation of the vessels in varying parts of the brain in a constriction in which the whole systemic circulation is affected. These local angiospasms in the brain lead to anæmia of the areas involved, the clinical phenomena being referrable to the areas so affected. The angiospasm in brain areas favours thrombosis, and its consequent deplorable brain softening, or leads to hæmorrhage on the heart side of the region of spasm.

Now I unhesitatingly assert that if these phenomena are duly observed, correctly correlated and interpreted, you have it in your power in many instances to save your patients from disaster, preventing their being deprived of the power of locomotion, of speech, of mental power, perhaps for years longer than would otherwise be the case.

The patient who is the text of these remarks is but one of many similar cases I could describe to you. I am glad that a case of the kind happens to be in the ward at present, so that you may see the case and note the difference between the radial pulse and the high pressure required to obliterate the brachial artery, and realise that this simple instrument, the hæmomanometer, is really a great help in your every-day medical work if you use it as a guide to the state of the vessel wall more than as a guide to blood pressure, although in other classes of cases it can even help you in judging of that.

MIGRAINE.

CASE 2.—The second case to which I ask your attention is also of interest, although not of such urgent importance as the preceding one. The patient, a woman aged 49 years, was sent to me in May, 1909, by Dr. W. C. McEwan of Prestonpans as she was suffering from migraine, having an attack almost every week, the attack lasting three or four days. At that time the radial artery was small and wiry and the brachial pressure 150 mm. Hg. The bowels were constipated, the tongue coated, the breath offensive, and there was a trace of albumin in the urine, which also showed much indican. I advised that she should have a laxative pill nightly of cascara, belladonna, and nux vomica, and iodide of potassium thrice daily. Under this treatment she improved, but as the attacks returned she was again sent to see me and was admitted into the adjoining ward on August 12th, 1910. On admission the pressure was 205 mm. She was treated with enemata to unload the bowel and got a colocynth and hyoscymus pill to keep the bowels moving. Under this treatment and rest in bed the pressure fell and kept between 164 and 172 mm. On August 21st the pressure was 164 mm. On the 23rd, in the evening, she complained of headache, vomited twice, and she knew that one of her attacks had begun. She vomited several times during the night. On the 24th her condition was unchanged, she vomited twice, and the pressure was 192 mm. On the 25th her condition still remained the same, and the pressure was 194 mm., when she was given a quarter of a grain of erythrol, the hour being 12.25 P.M.; by 12.55 the pressure had fallen to 142 mm.; by 1.50 it had risen to 168 mm., and by 7.45 to 179 mm. On this date (the 25th) she vomited six times between 1.30 P.M. and 9 o'clock, and as her symptoms were not at all relieved by the fall of pressure produced by the erythrol the drug was not repeated. On the 26th the headache was much less and the vomiting had stopped. The attack had lasted part of three days. On the 27th there was neither headache nor sickness, and the pressure had fallen to 138. On Sept. 1st the pressure was reported as rising steadily and had reached 172. The patient thought she was to have another attack, as she had a feeling of fulness in the right arm, a symptom she had noticed previously as indicating the approach of an attack. On the 2nd, in the morning, headache began, and at 10.30 A.M., when I saw her, the pressure was 203. I ordered 10 grains of phenacetin every hour for three times. At 1 P.M., the pressure being still 203 mm., she was given the first dose; at 1.45 the pressure was 187 mm. and the headache was slightly relieved; at 2.30 she was given the second dose, and at 2.45 the pressure was 184 mm. and the headache continued relieved; at 3.30 she was given the third dose, and at 4 o'clock the headache was distinctly better and the pressure was 178 mm.; at 7 P.M. the headache was much better and the pressure was 178 mm. There was no vomiting and the patient had a good night, sleeping soundly. The following morning, Sept. 3rd, she expressed herself as feeling quite well and the pressure had fallen to 158 mm. She has remained well down to the present.

The course of the hæmomanometer readings may be tabulated thus:—

	May, 1909	150 mm. Hg.			
	August 12th, 1910...	205	,,		
	,, 13th-20th ,, ...	198-165	,,		
	,, 21st ,, ...	164	,,		
	,, 24th ,, ...	192	,,		
Attack	,, 25th ,, ...	194	,, ...	12.25 P.M., erythrol.	
		142	,, ...	12.55 ,,	
		168	,, ...	1.50 ,,	
		179	,, ...	7.45 ,,	
	,, 27th ,, ...	138	,,		
	Sept. 1st ,, ...	172	,,		
Attack	,, 2nd ,, ...	203	,, ...	10.30 A.M.	
		203	,, ...	1.0 P.M., phenacetin.	
		187	,, ...	1.45 ,,	
		184	,, ...	2.30 ,, phenacetin.	
		184	,, ...	2.45 ,,	
			,, ...	3.30 ,, phenacetin.	
		178	,, ...	4.0 ,,	
	,, 3rd ,, ...	158	,, ...	morning.	

August 24th and Sept. 1st are the dates of two attacks—the first treated with erythrol and the second with phenacetin.

This case raises various questions which cannot at present be discussed. Some of these questions are: Are the attacks primarily of nervous origin, and if so are they neurasthenic or epileptoid? Are they nervous manifestations of early cirrhotic kidney? Or are they the result of a primary auto-intoxication due to some error in metabolism, or to the retention of some product not being regularly excreted? We are engaged in the investigation of the urine with a view to the possible determination of this last question, but meanwhile we have not got far enough to entitle me to speak about it. I bring the case before you as showing the interest that is attached to hæmomanometer observations, and that the instrument is well deserving of a place in ordinary medical work. In this patient I have shown that her attacks are associated with a marked rise in hæmomanometer readings, but it would appear that the mere reduction of pressure, as in the attack beginning on August 23rd, did not modify the course of the attack in any way. It may be that had the erythrol been

given sooner and been persevered with the result might have been different. However that may be, the difference between that attack and the attack on Sept. 2nd, which was at once treated with phenacetin, is very striking; in it the symptoms were promptly arrested and aborted, and along with that there was in three hours a fall in pressure of 25 mm. By the following morning a fall of 45 mm. had occurred, accompanied by the relief of all the symptoms. In this attack headache was arrested and vomiting was prevented by the administration of phenacetin, the drug above all others that arrests migraine.

Since the above was written this patient has left hospital. She left on Oct. 15th, having passed nearly a month without an attack, although in that time she had two threatenings of attacks, which have been designated in the subjoined table "abortive attacks." These abortive attacks were characterised by a feeling of drowsiness and by urine changes as indicated below. The examinations of the urine which were being carried out as mentioned above have been completed. They are given below and form an interesting contribution to the question of chloride excretion in migraine; they show a relationship between the migrainous attack, the occurrence of polyuria, and the discharge of a large quantity of chloride followed by a big drop in chloride excretion.

Amount of Urine and Chlorides Excreted in relation to Attacks of Migraine in Case 2.

	Date.	Oz.			
	Aug. 29th	30			
	,, 30th	34			
	,, 31st	87			
Attack.	Sept. 1st	72	10·2 grammes total chlorides.		
	,, 2nd	87	16·2	,,	,,
	,, 3rd	48	None.		
	,, 4th	42	0·49 gramme total chlorides.		
	,, 5th	50			
	,, 6th	108			
	,, 7th	—			
	,, 8th	105	23·46 grammes chlorides.		
Attack.	,, 9th	34	0·286	,,	,, (vomit 44 oz.).
	,, 10th	17	0·376	,,	,, (vomit 11 oz.).
	,, 11th	38	1·60	,,	,,
	,, 12th	28	None.		
	,, 13th	69	0·34 grammes chlorides.		
	,, 14th	64	1·07	,,	,,
	,, 15th	100	7·76	,,	,,
Attack.	,, 16th	40	3·88	,,	,, (vomit 8 oz.).
	,, 17th	37	9·4	,,	,, (,, 7½ ,,).*
	,, 18th	24	1·07	,,	,,
	,, 19th	20	0·23	,,	,,
	,, 20th	29	1·8	,,	,,
	,, 21st	53	1·5	,,	,,
Abortive attack.	,, 22nd	124	11·2	,,	,, (no vomiting).
	,, 23rd	52	4·3	,,	,,
	,, 24th	56	3·6	,,	,,
Abortive attack.	,, 25th	120	13·9	,,	,, (no vomiting).
	,, 26th	78	8·2	,,	,,
	,, 27th	78	6·0	,,	,,

* Containing 6·5 grammes chloride.

The patient left the hospital on Oct. 15th, not having had any more attacks.

I have to express my indebtedness to my residents, Dr. R. W. Lang Todd, Dr. T. Welsh, and Dr. A. L. Taylor, for their watchful interest in these cases.

Bibliography.—Russell: Arterial Hypertonus and Arteriosclerosis, THE LANCET, June 1st, 1901, p. 1519; Arterial Sclerosis and Hypertonus in their Relation to Diet, &c., Brit. Med. Jour., June 4th, 1904; Arterial Hypertonus, Sclerosis, and Blood Pressure, Messrs. Green, 1907; The Clinical Estimation of Blood Pressure: The Finger and the Hæmomanometer, Brit. Med. Jour., Oct. 10th, 1908; The Clinical Value of Hæmomanometer Observations, THE LANCET, Feb. 13th, 1909, p. 448; Intermittent Closing of Cerebral Arteries, Brit. Med. Jour., Oct. 16th, 1909.

PROPOSED NEW HOSPITAL FOR AXMINSTER.

At the annual meeting of the subscribers of the Axminster (Devon) Cottage Hospital, which was held on Nov. 15th, Mr. W. Langran, honorary surgeon to the institution, stated that the hospital was now out of date, and as there was a substantial reserve fund he proposed that a new building fitted up to modern requirements should be erected. After some discussion it was decided to take steps for the erection of a new hospital.

An Address

ON THE

DIAGNOSIS AND TREATMENT OF CYSTIC DISEASE OF THE BREAST.

Delivered before the Harveian Society of London on Oct. 27th, 1910,

BY D'ARCY POWER, F.R.C.S. ENG.,

SURGEON TO, AND LECTURER ON SURGERY AT, ST. BARTHOLOMEW'S HOSPITAL.

MR. PRESIDENT AND GENTLEMEN,—When you invited me to select a subject for discussion here to-night I turned over in my mind the various cases which have come under my notice as a surgeon to one of the large teaching hospitals in London. I quickly arrived at the conclusion that cystic tumours of the breast often gave me trouble both to diagnose and to treat, and I was vain enough to think that what proved difficult to me might have proved equally difficult to others. I have therefore chosen to bring this subject before you in the hope of obtaining a full discussion. Such cases are not rare, and it is the essence of a good discussion that it should be upon a topic with which everyone is familiar.

CLASSIFICATION.

The classification of cystic disease of the breast is chaotic, and I would therefore submit the following classification for your consideration and approval, not because I believe it to be perfect but in the hope of obtaining some kind of order:—

(A) *Non-inflammatory.*		
(*a*) Innocent.	(I.) Adenoma.	(i.) Ducts.
		(ii.) Acini.
	(II.) Fibroma.	(i.) Pericanalicular.
		(ii.) Intracanalicular.
(*b*) Malignant.	(I.) Carcinoma.	(i.) Duct papilloma.
		(ii.) Duct carcinoma.
	(II.) Sarcoma.	(i.) Cystic.
		(ii.) Degenerating.
(B) *Inflammatory.*		
	(I.) Galactocele.	
	(II.) Mastitis.	(i.) Cyst simple and single.
		(ii.) Cysts multiple.
(C) *Congenital.*	Lymphangioma.	
(D) *Parasitic.*	Hydatid.	

(A) NON-INFLAMMATORY CYSTS.

(*a*) *Innocent cystic tumours.*—Everyone recognises the existence of cystic adenomata as one of the commoner forms of innocent tumour occurring in the breast. The actual structure differs in different tumours. It is sometimes, but rarely, pure glandular tissue of an imperfect type held together by a little areolar tissue, the glandular tissue being sometimes chiefly acinous and in other cases chiefly tubular. Much more frequently the glandular elements are scattered in a stroma of fibrous connective tissue and the tumour is then called a cystic fibro-adenoma. Here are two examples of such a tumour, the first of which is almost typical:—

CASE 1.—An unmarried woman, aged 21 years, had accidentally noticed a lump in her breast six months previously. It was small at first but had doubled in size before she sought advice. Her breast ached a little, but never enough to be troublesome. Examination showed that both breast and nipple looked natural. The hand laid flat upon the left breast felt a rounded swelling which measured about an inch in diameter. The swelling was hard and nodular, well defined, and painless. It floated, that is to say it moved freely, not only beneath the skin and upon the pectoral fascia, but in the substance of the breast itself. A small incision radiating from the nipple allowed the tumour to be removed with the greatest ease. The tumour appeared to the naked eye as an irregular mass of glandular tissue from the edges of which projected small cysts filled with transparent yellowish fluid. Microscopically it was a fibro-adenoma consisting of glandular acini in a stroma of fibrous tissue.

CASE 2.—A married woman, aged 30 years, had first noticed a lump in her left breast seven months previously, her attention being drawn to it by accident. The swelling had increased a little in size, but she came for advice because it was beginning to be painful after she had used her arm. Examination of the breast showed that it contained a rounded swelling measuring half an inch across and divided into two lobules. The swelling was freely moveable in the breast, and there was no enlargement either of the axillary or the supraclavicular glands. The tumour was removed by simple incision and proved to be a cystic fibro-adenoma.

The secret of removing these tumours lies in making the assistant press them up closely beneath the skin and then cutting down upon them until the capsule of the adenoma is reached. I have sometimes seen them very badly removed by those who have failed to appreciate the necessity for cutting cleanly through the breast tissue before any attempt is made to enucleate the tumour.

It is not necessary to remove every adenoma of the breast, but it is better to do so in those who are unable to bear with equanimity the thought of having a tumour in the breast, in those who have a strong family history of cancer, when the tumour grows rapidly and when it is really painful.

Cystic fibroma.—Cystic fibroma of the breast occurs in two forms, and the name of Sir Benjamin Brodie's disease of the breast is sometimes given to it. A more intimate knowledge of the pathology and microscopical structure has enabled us to subdivide Brodie's disease into an innocent form—cystic fibroma—and a malignant form—cystic sarcoma. Cystic fibroma of the breast may be further subdivided into pericanalicular fibroma and intracanalicular fibroma. Both forms are characterised by an overgrowth of connective tissue starting either in the stroma round the ducts and acini—the pericanalicular form—or in the subepithelial tissue of the ducts themselves—the intracanalicular variety. Both tumours are associated with the formation of numerous cysts which are filled at first with serous fluid. The cysts, therefore, are due in all probability to obstruction of the glandular tissue, although in some cases there is microscopical evidence that the glandular epithelium has itself undergone cystic degeneration. The cyst wall in the pericanalicular form is often invaginated by the new growth of fibrous tissue until the cyst becomes a mere slit, and the tumour appears to be solid on section until a probe is passed into the slits, when the invaginating growth can be turned out and the cyst demonstrated.

In the intracanalicular form the cyst remains obvious and the growth sprouts into it in the form of a duct papilloma.

CASE 3.—This is a section through a large and lobulated pericanalicular fibroma of the breast. The cysts are very large and are filled with a firm growth. It will be noticed that, although the growth fills the cysts in such a manner as to make the section appear solid, it is in each case a mere approximation of the cyst wall and it can readily be turned out to show its independence of the cysts. Microscopically the tumour is a true pericanalicular fibroma. The breast was removed from a married woman, aged 52 years, who first noticed a small lump in her breast ten years before amputation was performed. The tumour began to grow two years after it was first noticed, but during the last three years the rate of growth had increased rapidly.

CASE 4.—The following is a good instance of the intracanalicular cystic fibroma, which was recently under my observation. An unmarried lady, aged 55 years, came to see me in August, 1909, saying that six weeks ago she had first noticed a little blood-stained discharge coming from her left nipple. Three weeks later the discharge, which was clear and blood-stained at first, became thick and made her linen stiff when it dried. Careful examination showed the breast to be healthy except at one spot just to the outer side of the nipple where there was a slightly thickened patch which was not tender on pressure. There was no enlargement of the axillary glands. I made a diagnosis of duct papilloma, but rather dissuaded the patient from any operation as she had lately suffered from several attacks of angina pectoris. I told her to come and see me again in two months' time unless any marked change took place in the interval. She returned on Oct. 8th saying that the discharge had neither increased in quantity nor altered in quality, though my examination of the breast at the previous visit had been followed for a few days by a little more bleeding than usual. I again temporised, but on Oct. 25th the breast suddenly increased in size without any apparent cause. It became red and tender, so I determined to remove it at all risks. I amputated the breast on the 27th, and subsequent examination showed a papillomatous growth of about the size of a pea projecting into a cyst filled with blood-stained and purulent fluid. The cyst was surrounded by an extensive area of thickened tissue. The axillary glands were unaffected.

The following report was afterwards received from the Clinical Research Association: "This is an inflammatory lesion of the breast with much induration, as well as some recent and acute changes round the ducts. We may conclude, therefore, that it is a simple chronic infection as there is no evidence of tubercle. There is a fair-sized duct papilloma in one place, but it is well encapsuled and there is no evidence of malignant growth."

CASE 5.—A married woman, aged 45 years, first noticed a lump in her breast ten years ago. It was then as large as a pea, and there was an occasional discharge of a few drops of yellowish but inoffensive fluid. The swelling gradually increased in size, but during the last six years there had been no discharge. The increase in size was attended with pain. The patient had been married for 25 years, but had neither had children nor miscarriages. Examination showed a rounded and slightly lobulated swelling occupying the inner half of the left breast. The skin over the swelling was freely moveable and was not altered in character, except that it contained a single enlarged vein. The tumour was not attached either to the skin or to the deeper tissues. It gave the sensation of a tense fluid swelling. The right breast was normal. The swelling was removed on May 3rd, 1910, and the patient left the hospital on May 19th with the wound soundly healed.

The tumour is preserved in the Museum of St. Bartholomew's Hospital (No. 3146*b*) with the following description: "Part of a female breast showing a cystic duct papilloma with intracystic growths. A piece of skin, including part of the nipple, forms the anterior aspect of the specimen. Beneath it is a cyst measuring about half an inch in diameter. The cyst is thin-walled and was not adherent to the skin. Its inner aspect is roughened by a granular deposit of blood-stained débris. Two intracystic papillary growths are seen at one extremity of the cyst, to the wall of which they are attached by delicate pedicles. The cyst contained bloody fluid when it was fresh. Microscopical examination shows the intracystic growth to be a duct papilloma."

The connective tissue stroma in the intracanalicular forms of cystic adenoma may itself undergo secondary changes, as happened in the following case:—

CASE 6.—A married woman, aged 45 years, was admitted under my care at St. Bartholomew's Hospital on May 29th, 1910, complaining of a painful tumour in the left breast. The swelling had been noticed for the last 20 months. It was painless at first, but five months before she sought advice it began to grow and was painful. There was no history of any injury. Examination of the breast showed a diffuse and rounded prominence over the left nipple which proved on palpation to be a tense and lobulated swelling which was not attached either to the skin or to the underlying tissues. There was a small painless swelling in the left axilla which had only been noticed for three days. The breast was explored on May 20th and a thin-walled cyst filled with brownish fluid was dissected out. Subsequent examination showed that it contained a vesicular mass which seemed to be of a colloid nature.

The specimen was sent to the museum where it is preserved (No. 3146*k*) with the following description: "A cystic papilliferous fibro-adenoma. The tumour is globular and multilocular, measuring 2 inches in diameter. A quantity of gelatinous papillary growth springs from the inner wall of the main cavity of the cyst, which it fills completely. Microscopical examination shows that the gelatinous outgrowths are composed of myxomatous tissue covered by flattened epithelium. The cyst wall is fibrous and contains spaces lined by epithelium similar to that which covers the papillary growths."

(*b*) *Malignant cystic tumours.*—Malignant cystic disease attacks the same parts of the breast as cystic fibroma. It occurs, therefore, in the two forms of cystic sarcoma and duct cancer, the sarcoma corresponding with pericanalicular cystic fibroma, duct cancer being the correlative of the intracanalicular non-malignant forms.

Cystic sarcoma of the breast is at first a well-circumscribed swelling which grows in the same manner as sarcoma in other parts of the body. The cysts, however, are constituent parts of the growth and are not mere degeneration products due to retrograde changes in the newly formed sarcomatous tissue. The cases are not very common, but here is a good example which came under my observation when I was acting as house surgeon to Sir William Savory, who spoke of it by the name under which it was known to Sir Benjamin Brodie himself as a sero-cystic sarcoma.

CASE 7.—A married woman, aged 37 years, the mother of nine children and four months pregnant, was admitted into Lucas Ward at St. Bartholomew's Hospital on March 12th, 1883, with a tumour rather larger than an egg in the upper part of the left breast. The swelling had been first noticed three months previously and it was then the size of a walnut. On examination it was found to occupy the upper segment of the breast near the periphery. It was moveable and bossed; fluctuation could be felt distinctly. The swelling did not extend to the nipple, but was connected with it by indurated bands. There was no serous discharge from the nipple and there were no enlarged axillary glands. One of the fluctuating parts of the tumour was punctured with a grooved needle on March 13th and about two ounces of clear fluid escaped. An incision was made into the tumour on March 24th and clear fluid again escaped. The incision never closed and there was a constant oozing of serous fluid from it. The patient left the hospital at her own wish on April 13th and was readmitted on May 15th, saying that she had suffered much pain in her breast, which was always wet, and that something had grown out of the wound. Examination showed that the left breast was much larger than before, the skin over it was tense and red, whilst the whole gland was harder than natural. A large fungating mass was growing from the site of the incision and there was a constant oozing discharge of clear serous fluid. The patient otherwise was in excellent health. The breast was removed on May 19th and the patient left the hospital with the wound soundly healed on June 8th. Subsequent examination showed that the breast contained a cyst as large as an orange embedded in a mass of sarcomatous tissue.

These cystic sarcomata of the breast must not be confused with sarcomata in which cysts are produced as a result of degenerative changes. The following is a good example of a case of degenerating sarcoma:—

CASE 8.—A married woman, aged 51 years, was admitted under my care on June 2nd, 1907, complaining of a painful lump in her left breast.

The swelling had been noticed for eight weeks, and during this time it had increased from the size of a Barcelona nut to that of an egg. Examination showed a tumour as large as a hen's egg in the upper quadrant of the left breast. The nipple was not retracted and there were no enlarged glands in the axilla or above the clavicle. The patient was extremely unwilling to have the breast removed, and I was only allowed to operate upon condition that the tumour was removed locally, whatever its nature. I cut into the breast, therefore, and removed the mass, which seemed to be well encapsuled, and with it I removed a wide margin of healthy tissue. Subsequent examination of the tumour showed it to be a spindle-celled sarcoma with no evidence of any cystic formation.

The patient returned to the hospital in June, 1908, saying that she had noticed a lump in the breast beneath the scar in the previous April, ten months after the operation. Examination showed the recurrent mass to be a hard and fairly well-defined swelling, measuring 4 inches by 2 inches. It was moveable, and the skin over it was not adherent. There were one or two enlarged glands in the axilla. The whole breast was removed with the contents of the axilla and the superficial fibres of the pectoralis major. The growth in the breast proved to be so well encapsuled that it could be dissected out of the breast tissue with comparative ease. It was lobulated, and in many cases it was excavated into ragged cavities which contained degenerating new growth. Microscopic examination showed the growth to be a spindle-celled sarcoma.

Duct carcinoma is not very uncommon. It is always cystic, the cysts being either simple or multilocular. The following case is an example of the multilocular cystic form:—

CASE 9.—A woman, aged 68 years, was admitted into St. Bartholomew's Hospital under my care complaining of a lump in her left breast. She had first noticed the swelling 18 months previously, when it was as large as a pigeon's egg. It grew slowly but painlessly. There had never been any discharge from the nipple. Examination showed a large, irregular, and fairly well-defined swelling in the left breast to the outer side of the nipple. It was not tender and it was not fixed to the deeper structures. It moved freely with, but not in, the breast. The patient had been married 48 years and was the mother of seven children. She had bruised her left breast very severely 30 years previously by falling against a door. The breast was removed on Feb. 22nd, 1910, and the patient left the hospital on March 10th.

The specimen was sent to the museum where it is preserved (No. 3146*a*), with the following description: "Part of a female breast containing a multilocular cystic duct carcinoma. Embedded in the adipose tissue of the breast is a globular tumour measuring about two inches in diameter. It lies close beneath the skin, which is nowhere adherent to it. The tumour is encapsuled for the most part, but here and there it cannot be defined from the surrounding fat. The tumour is partly solid and partly cystic. The cut surface shows the interior of the largest cyst which, like the smaller ones seen upon the reverse side of the preparation, contained a bloody fluid. The solid parts of the tumour consist of a number of rounded ingrowths from the periphery. Microscopical examination shows the growth to be a duct cancer."

(B) INFLAMMATORY CYSTS.

Cystic disease of the breast connected more or less directly with inflammatory changes is of greater diagnostic interest and may present greater difficulties in treatment than the non-inflammatory forms which have just been discussed. Foremost amongst these cysts, and in many ways the simplest, is galactocele. A galactocele is generally the result of inflammatory changes occurring in the breasts of married women. The following case shows that it may be produced as a result of injury to a virgin breast:—

CASE 10.—An unmarried governess, aged 31 years, was sent to see me because she had been complaining of pain and swelling in her breast. She said that five months previously she had been struck upon the breast, a bruise had resulted from the blow, and the breast had become tender. Examination showed that she had a small and freely moveable swelling in the lower and outer quadrant of the right breast. The tumour was in the breast substance and moved when the breast moved, but it was not independent of the mammary tissue and did not give the sensation of floating which is so often felt in the cystic adenomata. The swelling was slightly tender. There was no discharge from the nipple and there was a single enlarged gland in the axilla. The history of the case and the bruising which had followed the injury led me to make a diagnosis of a circumscribed hæmatoma in the glandular tissue. I incised the swelling under a general anæsthetic and found a cyst containing a milky fluid. The swelling therefore was a galactocele. The interior of the cyst was swabbed out with a solution of zinc chloride, 40 grains to the ounce. A drainage-tube was left in for 24 hours and the small incision was sutured. The wound healed by first intention.

Chronic mastitis leads to the formation of a most interesting group of cystic tumours. The cyst in these cases may be single and simple or the whole gland may present the appearance of a sponge when it is examined after removal. The following case is a good example of a single and simple cyst:—

CASE 11.—A married woman, aged 43 years, was admitted into St. Bartholomew's Hospital under my care complaining that she had a lump in her right breast. Twelve months previously she had noticed that her right breast was harder than the left, but she took no particular notice of the fact until Oct. 2nd, 1908, when the breast became more swollen after two days' hard work. She had never suffered any pain. Eighteen months ago she had fallen heavily against a bedpost and had struck her breast. Examination showed a tense lump limited to the upper half of the breast; it was freely moveable upon the pectoralis major and was definitely circumscribed. Careful manipulation yielded a sense of fluctuation. It was not tender, the skin over it was not adherent, and there was no retraction of the nipple. Two or three enlarged glands could be felt in the axilla, and the patient said that she had lost weight. There were some grounds, therefore, for thinking that she might be suffering from a scirrhus. I made a vertical incision into the swelling on Nov. 2nd and clear serous fluid squirted out. The incision was enlarged and a simple cyst was removed. The cyst wall was thickened, fibrous, and firmly adherent to the glandular tissue surrounding it. The cyst measured 1½ inches in diameter when it was distended. The patient left the hospital on Nov. 11th.

CASE 12.—A married woman, aged 48 years, was admitted into St. Bartholomew's Hospital under my care with a lump in her left breast. She said that she had first noticed it nine weeks previously when her attention was directed to it by pain. It had increased steadily in size. She was the mother of nine children; at various times and repeatedly she had been struck on the chest and her nipple had often been chapped. Examination showed the existence of a very hard and craggy lump in the lower and outer quadrant of the left breast. It was about as large as a hen's egg and was freely moveable. There were a few enlarged glands in the left axilla. The right breast and its axillary lymphatic glands were natural. The history of the injury and the fact that she had felt pain in the breast led me to incise the swelling, which proved to be a cyst filled with clear yellowish fluid under considerable pressure. Frozen sections of the indurated tissue round the cyst were made at the time of the operation. They showed that the thickening was due to chronic inflammation. The wound healed by first intention and the patient was discharged on August 14th, ten days after the operation.

CASE 13.—A very nervous married lady, aged 49 years, was sent to see me on account of a painless tumour which she had noticed for the previous three weeks in her right breast. The swelling only occupied a part of the breast. It felt densely hard and there was a slight irregularity at the lower and outer part of its circumference. There was a single enlarged gland high up in the axilla. The patient said that many years ago she had suffered from an inflammation of the breast when she was suckling. I had no doubt in my own mind that she was suffering from a scirrhous carcinoma, and I advised her to go to a nursing home as soon as possible with a view to removal of the breast, if after incision the tumour was found to be solid. At the same time I told her doctor that it would be advisable to cut into the swelling before the breast was removed because she had previously suffered from mastitis and because the axillary gland seemed to be rather softer than is usually the case in cancer. She was persuaded by her friends to see another surgeon before following my advice. He put a trocar and cannula into the tumour and drew off two or three ounces of clear fluid. The swelling no doubt was a simple cyst originating in the ducts or acini of the breast tissue. The cyst had become enlarged as a result of long-standing inflammatory changes brought into prominence by the retrograde processes taking place in the breast at the menopause. I ought, of course, to have recognised the cyst by its elasticity as well as by the slight irregularity of the circumference which pointed to a patch of localised mastitis such as is not common in cases of cancer. But I should have discovered the cyst at the time of the operation without removing the breast and perhaps in a safer way than was actually done, although it seemed much more satisfactory to the patient to have it tapped there and then and thus to be relieved of the swelling at once. The moral of the case is not to give too decided a prognosis in cases of doubtful mammary tumour, for a cyst may simulate very closely a solid tumour.

There is another group of cases in which a chronic inflammation of the breast is associated with a formation of cysts which may be single but are much more frequently multiple. The following case is a good example of the type and is unusually complete as I had the opportunity of watching it for a long time:—

CASE 14.—A female patient, aged 34 years, and unmarried, came to me on March 11th, 1906, complaining of a painful swelling in the right breast. She said that she had first noticed "something wrong" with her right breast in December, 1904, and that in April, 1905, the breast contained a definite swelling of about the size of a peanut. The swelling remained stationary in size until November, 1905, when it began to grow. A month later it was painful for the first time. There was no loss of weight. She was a healthy woman when I saw her in March, 1906, and her breast looked natural. Examination showed that there was a hard mass in the upper and inner quadrant which measured an inch and a half in length by an inch in breadth. The mass was slightly tender and there was no enlargement of the axillary glands. The swelling was definitely limited in outline and was freely moveable in the breast tissue as well as upon the underlying structures. It did not fluctuate. The swelling was explored on March 12th and was found to be a small cyst surrounded by chronically inflamed tissue. The cyst was removed and the wound was stitched up, a drainage-tube being left in position for 24 hours. The wound healed by first intention. The pathological report which reached me subsequently says:—"Description: Thick-walled cyst of the breast. Histological examination. Chronic mastitis."

The patient came under my care again late in the year 1906. The note states that she is a well-built and well-nourished woman with a scar one inch above and within the right nipple. There are two tense and circumscribed swellings in the upper part and outer quadrant of the right breast. The swellings measure about half an inch in diameter. They are freely moveable under the skin and in the breast tissue. There are four or five similar but smaller swellings in the lower and inner quadrant, and three swellings of a similar nature in the upper and inner quadrant, so that the right breast contains at least nine separate cystic swellings, whilst in the left breast there is one similar cyst measuring about a quarter of an inch in diameter and situated in the upper and inner quadrant. The patient said that her right breast was always painful, and the anxiety which it caused her prevented her from following her occupation of teaching. At her earnest desire, therefore, I excised her right breast on Dec. 27th, 1906. An incision was carried round the lower half of the circumference of the right mamma. The skin and

subcutaneous tissues were dissected off the whole of the mammary gland, which was then removed, leaving the nipple and the skin untouched. The cyst in the left breast was afterwards removed. The wounds healed by first intention. The pathological report upon the right breast states, "Chronic interstitial mastitis with cysts and much overgrowth of the acini. There is no intracystic growth."

The patient wrote to me in December, 1907, nearly a year after this operation: "Since July I have been much better than before, and I certainly feel that there is no further development either in the breast itself or under the arm. I have had much less pain, at least it is not so continuous as it was before, and I believe that the lumps are decidedly smaller." A few months later, in April, 1908, she wrote: "I have been troubled again about my breast as I have had a good deal of pain. The lumps under the arm are no worse, nor, so far as I can tell, is there any noticeable change in the breast itself, except in the matter of pain. About five weeks ago it was very bad, but for the last ten days it has been better." When I saw her a few days after this letter I found that she had lately had influenza and was depressed by the attack, so that she had felt the pain more acutely than usual. Examination showed that her left breast was free from nodules and was soft, but that there were two enlarged glands in the axilla. I reassured her, ordered her a belladonna plaster, and gave her a prescription for a mixture containing iron and nux vomica.

She wrote again on Jan. 30th, 1910: "I cannot answer your questions quite so satisfactorily as I could wish, and yet I feel that I am no worse than when I last saw you—in fact, I think that I am better. To all outward appearance the breast is quite normal. I am never entirely free from pain for many days together, but it is as much in the shoulder and under the shoulder-blade as anywhere. I have occasionally what I may describe as a neuralgic pain in my arm and then I resort to aspirin. The glands under the arm give no pain or discomfort now, and unless I actually seek for them I forget their existence. They are still present, but I fancy that they are smaller. The little soft lump which has always been near the nipple is also there. I think it varies in size from time to time, but if it grows at all its growth is very slow and it seems a little harder."

This is an interesting case because it belongs to a difficult group of breast tumours, and I have been able to follow the course of the mastitis for six years, from a time when the breast was healthy until the inflammation has become chronic. The inflammation began slowly, without pain, and from no known cause. One breast became affected and a single cyst was formed. This was followed by a period of acute inflammation with the formation of many cysts attended with so much pain that the breast was removed by a plastic operation. Both breasts were affected at this time and the axillary glands became enlarged. This period of activity was followed by the present state of quiescence. I do not know whether this is a common history in cases of chronic cystic mastitis, nor do I know the relationship which this form of inflammation bears to carcinoma at some later period.

(C) CONGENITAL CYSTS.

Lymphangioma.—The last group of cystic tumours of the breast to which I wish to call attention are the congenital cysts, for of the hydatids I have no experience. The congenital cysts occur in very young children, and they are usually of the nature of lymphangioma. The following case is an excellent instance:—

CASE 15.—A boy, aged 3 years, was admitted into the Victoria Hospital for Children under my care with a swelling of the left breast. His mother said that his breast had been increasing in size for the last 18 months until it had grown to the size of half a Tangerine orange, but it had never been painful. I removed the breast, which is preserved in the Museum of St. Bartholomew's Hospital (No. 3142*d*), where the catalogue states that, "It shows a cystic growth in the tissues beneath the breast, probably originating in dilated lymph spaces. Besides the large multilocular cyst which is visible, a number of small cysts are scattered through the fat. The nipple and the breast itself are normal." The tumour, therefore, is a cystic lymphangioma of the same type as that which is not uncommonly seen in the necks of children, though it is rare on the trunk.

These cases are examples of some of the forms in which cystic disease of the breast presents itself to our notice. The fact that all but one have come under my own observation shows that they are by no means rare, whilst the mistake that I made in the recognition of one of them shows, perhaps, that they are not always easy to diagnose. The lessons to be learnt seem to be, in the first place, that our minds must not be filled with the idea of scirrhus to the exclusion of every other form of tumour when we examine a breast which contains a tense swelling in a woman of middle age, even though there be some enlargement of the axillary glands. A careful examination should be made in such cases to ascertain whether the swelling is more tense, more elastic, and more circumscribed than is usual in carcinoma. A patient with a tumour of the breast is generally examined whilst she is sitting in a chair, because she walks into the consulting room. It is better, I think, to examine her when she is lying upon the couch in every case where there is any doubt. The recumbent position allows the breast to lie upon the chest wall instead of hanging away from it, whilst the pectoral muscles are relaxed, and the exact conditions existing within the mammary gland can thus be determined more accurately. There is no great difficulty in making a correct diagnosis when fluid can be squeezed out of the nipple, nor when there is a weeping discharge from it; nor can a cyst be easily overlooked when it is thin-walled and superficial, nor when there is evidence of chronic mastitis in one or both breasts. The really difficult cases are those where the cyst is single, not very large, thick-walled, and surrounded by glandular tissue in a state of chronic inflammation. Instrumental exploration alone will reveal the cyst with certainty in these cases, and I prefer incision to aspiration or puncture with a needle, because the cyst wall may lie so deeply or may be so tough that it is not readily punctured; or the contents of the cyst may be too thick to pass along the needle or cannula; or worse still, there may be an intracystic growth or a nodule of commencing cancer in its immediate neighbourhood. Due attention, also, must be paid to the history given by the patient. We are a little too apt to think that cancer occurs more often than is really the case in breasts which have been damaged by long antecedent inflammation. In a certain proportion of cases it is so, but such an inflammation may also be followed by chronic mastitis and the formation of a thick-walled cyst about the time the breast undergoes the physiological changes of the menopause. In some cases, too, it happens that a cystic tumour may disappear, or at any rate become smaller for a time, and if there is such a history it may be accepted as confirmatory evidence, although patients with undoubted carcinoma sometimes bring themselves to believe that the tumour varies in size.

The outcome of what I have said is to show that cystic disease of the breast is not a distinct entity. It is associated with almost every variety of disease of the mammary gland, and requires careful investigation which is best carried out by a combination of clinical and pathological research.

HEART STRAIN AND DILATATION.[1]

BY J. F. GOODHART, M.D. ABERD., F.R.C.P. LOND.,
CONSULTING PHYSICIAN TO GUY'S HOSPITAL, ETC.

IN opening this discussion to-night will you allow me first to say, in explanation of what follows, that I am not here at my own instance, but by the kindly pressure exercised by the President upon an old and unwilling friend.

The subject is a very intricate one if fully considered; I hardly appreciated how much so till, after I had put my notes together, I began to criticise myself from out of the mouth of some most illuminating literature from certain of the giants of our day. I will confess that I went as far as anathematising your President's powers of persuasion, and I tremble still as I venture to put thus thinly before you an entirely clinical aspect of the case as it has come before me. But I do not think it will be waste of time to put the matter thus, for the subject is a very discussable one, and the paper will serve as the peg upon which to hang the remarks of subsequent speakers, which will be much more valuable than anything I have to say.

I shall consider both strain and dilatation more or less together. I feel compelled to do so, because strain, although it may be very real, is to my mind an intangible sort of thing and needs to be stiffened by some definite change of structure, although the two may not necessarily occur together. Now strained hearts, so called, are constantly in evidence; I surely do not exaggerate in speaking thus. With what body do they thus come before the physician? They have usually been where some muscular exertion has been undertaken, by male or female mostly young, and often apparently of a very insignificant character. The symptoms appear to be unnatural sensations of illness: perhaps nausea; perhaps fainting; the breath sighing; irregular action of the heart; collapse; sensation of impending death, perhaps, in some few cases. Then there come pains of various degrees and kinds over the region of the heart, and other sensations of general decrepitude such as extreme lassitude on the smallest exertion. The heart is then examined, and the impulse is found a little outside the normal;

[1] A paper read before the Medical Society of London on Nov. 28th, 1910.

the beat wants in decision and varies in force; not infrefrequently, I should say, it intermits. There may be no murmurs of any kind, or if there be, there is a systolic bruit at the base, usually over the pulmonary valves, and, or, a systolic murmur towards the apex which alters considerably in area and intensity as the subject changes from the erect to the recumbent posture, when it is likely to spread all over the region of a line drawn from the impulse to the pulmonary valves. Rest of a prolonged and more or less rigid kind is generally ordered. Here is my text:—

A boy, aged 18 years, at one of our public schools two and a half years before I saw him had taken part in a steeplechase and sports, and came home with "a big heart, a systolic murmur, and a questionable friction sound." He was kept in bed and got well. He was kept quiet afterwards, but he still had pain in his heart region if he ran much, and also under such circumstances would feel faint. His nerves were upset; he would have been in the eleven, but he got too nervous. He was a fine healthy fellow with phosphatic urine and a trace of albumin, but otherwise without discoverable fault. Eighteen months later he came to know if he might row at college. His medical adviser there had said he might, but Dr. C. D. Bowdich Hale, his doctor at home, who knew him better, had said some time before that he might not. He was still a most splendid fellow in physique, and I really could not say he must not, but I said take it easy. Well, he did row, and went to pieces, and a localised systolic murmur again developed. A consultation was held, and he was ordered to do nothing for a long time, my note says for three years, and I understood that this was because of the condition of his heart. Some four years later I saw this young man again. He had been overworked at a mission and had suffered from dyspnœa, and pain in the cardiac region, and faintness. Llangammarch being near his home he was given there a modified Nauheim course. When I examined him afterwards his heart appeared to me to be still perfectly sound. There is one other point in the case that seems of importance—viz., that some few years before I had seen this patient's father suddenly taken with ptomaine poisoning, and what was supposed to be a most alarming cardiac failure. He had been tremendously overworked, and was seized suddenly with a bad faint, but by the time I arrived there could be no doubt that the then condition was essentially nerve and not heart.

Another case is that of a healthy man, aged 35 years, certainly coming of gouty, and probably of nervous, stock, who some years ago suffered from nervous dyspepsia. He was a man of intellectual pursuits, working anxiously, and giving little heed to his physical development. He took a holiday and commenced it with a bicycle ride of excessive length, and not long after, impelled, I suppose, by the invigorating air of the Swiss mountains, he overwalked himself. After a few days, without apparently feeling much amiss, he suddenly fainted, and after a few days he had another faint, and he subsequently came under notice, with some pain about one shoulder, a systolic murmur at the base of the heart, and a feeling of the necessity of deep inspiration which came on especially at night, and which made him feel, he said, that if he did go to sleep he would never wake up again. But what was the more noticeable to his friends was an excessive decrepitude in walking, and the impression that he gave of being so very weak and really ill, and this two to three months after the original strain. There was no increase of dulness, a little only of varying force in the several beats of the heart, an occasional systolic murmur—nothing pointing to disease with any certainty.

Of dilatation of the heart it may perhaps be said that there are two sorts of cases met with, or indeed three, like the three Johns of the "Autocrat of the Breakfast Table." But of one of them (the real John) I do not propose to speak otherwise than incidentally. Of the first class there are two briefly stated. Both are women; both are very stout; both are nervous. The one of about middle age lost her husband a year ago, and has "felt mouldy" ever since, and, not unnaturally, wants to be better. She has been told that she has a dilated heart, but that there is no organic disease. The strain of the natural processes of life appears to have proved too much for it. Her symptoms of this are entirely general. She is not well, "so tired." She is so stout, that it is impossible to obtain any reliable information as regards her heart by percussion, but the sounds are perfectly natural; they are not unduly conducted into the axilla; the action is quite regular, and the pulse tension is under, rather than over standard, 110–120 R.R.

The second case is a woman, aged 39 years, who has had much out-of-health-ness in her life. Her nerves went to pieces after influenza, and again after a course of thyroid extract for the relief of her extreme obesity. Some years ago she went to Nauheim for baths, but they were too much for her, and she only had a few. She came for degeneration of her heart and vessels and to know if it were worth her while to undergo another Nauheim course. That she is an unsafe life is clear, and an unhappy one also, for she is always in misery, but so far as her heart was concerned to my ear it was perfectly sound. There was no murmur; no palpable impulse; the heart's action was quite regular; and the pulse tension only 120–130.

Of the other class I must add a little more, for although much the same forerunning conditions may be at work, added thereto are illnesses of many trivial sorts, more especially ephemeral fevers in young people, but all sorts of temporary disturbances, leading to feelings of general malaise, which in sensitive people lead them to consult a medical man. When so doing the heart's rhythm is found to be disturbed in some way or another, the impulse of the heart is found to be outside its ideal limit; quite possibly a murmur is heard, such as has been already shortly described, and according to some there is an increase of the præcordial dulness. For all these cases rest, and generally prolonged rest, is ordered, combined with one form or other of treatment directed to remedying the dilatation, and in my experience by far the most important sign of improvement or recovery is judged to be the movement inwards of the visible or palpable impulse of the heart, which is anxiously looked for day by day as it provokingly varies, now in, now out.

It is, I think, almost entirely upon this position of the impulse and upon the præcordial dulness that the diagnosis of heart strain and dilatation is so commonly made, but they are surely quite insufficient of themselves. Increase of dulness, fairly reliable as it is for enlargements of the right side of the heart, is of very little value when dealing with the apical section of the organ, and I hold that, except perhaps by radiography, it is impossible to obtain much reliable evidence of the lower and outer limits of the heart when it comes to attempting to estimate variations of relatively small size taking place within short intervals of time. I do not believe radiography can do it, when you come to consider the moving heart and the rapidly changing conditions of the environment—the lungs, the thoracic walls, and the diaphragm.

As regards the impulse in relation to the chest wall. No doubt in general terms it is a fairly constant anatomical landmark, all things considered. But what of the several conditions that tend to alter it when we come to try to precisely fix its limit and to judge of its value as an indication of dilatation? Suspended as is the heart between the lungs, and resting upon the diaphragm, it must vary in position constantly, with the varying *substance*, *distension*, and *position* of these surroundings. Again, we are dealing with a *muscle* and therefore the position of the impulse upon the surface will vary with the tone and precision of the muscular contraction. The ventricular muscle in systole twists up into a tight spiral. But does this constitute the complete history of any living muscle? Examine your own heart after dinner, and in bed at night when lying on your left side, and I shall be surprised if it does not tell to many quite a different tale. I cannot imagine any living fibre acting hour in and hour out, through days and weeks and years, with any rigid mechanical machine-like precision such as this. Could it last if it did? A very considerable latitude must be allowed to contraction, and contraction in the healthy physiological play of any muscle. The general result is accomplished truly, but not always with a vigour of equal value; and unless this vitality —this individuality of muscle fibre—so to speak, be allowed for, I cannot imagine how all the varieties of sound and murmur that we hear are to be explained. How is one to explain, for instance, some of those very common murmurs at the apex that are produced in a moment on suddenly shifting the position of the body? Muscular distension or

relaxation has a mean but healthy excursion on either side, must by no means be neglected, and in a series of cavities linked together thus the shape of the organ will vary somewhat in accord, and beat by beat. This is another reason why percussion can be no adequate or reliable gauge of what I will venture to call the *physiological play* of the healthy heart. Of the existence of such play there can surely be no doubt. To what extent this variation reaches I do not think that at present we have any accurate knowledge. It is easy to see that information is very hard to obtain; but my own observations lead me to say that the considerable alterations in size that have been supposed to be indicated by percussion and to become reduced at once by bath or exercise can have no real existence and no bearing upon any dilatation that I understand. Then the shape of the chest is over and over again ignored when judging of the value of the position of the impulse, and a heart is said to be enlarged and dilated because from this cause also its beat is more diffused and external than it should be. But what else is to be expected in the narrow, miserably-shaped chests that one is meeting with so often? The heart is almost certain, in such circumstances, to occupy more of the front of the thoracic cavity than it otherwise would.

When one comes to speak of murmurs as evidence of dilatation, I am then perhaps upon a more debatable ground, for there are many cases in which anyone must own to considerable doubt as to their cause. Starting from the fact, long well recognised, that there are many cardiac murmurs that are not valvular and are of little importance, I myself would go further, and say that many murmurs that seem to be regarded as evidence of valvular or, perhaps still worse, of muscular disease are, from the absence of symptoms of ill health, of some other source of production not to be explained with certainty, except that they are *functional*, if we may use that term to exclude organic changes in the valves or muscle. I say this in face of the admitted fact that many of such murmurs, though variable, are of great persistency. It is usually supposed that functional murmurs indicate some deterioration of blood or tissue, the which, as soon as it is removed or repaired by tonic or rest, will disappear. This has not been my usual experience, however. I should say some follow the rule, but many will continue for long, sometimes for many years. Yet there will be no indications of heart failure. These things are common in boys at school and in young men who will take as much exertion as others and who have no distress or knowledge of any incompetence in their daily undertakings. I have known a large number of such conditions first discovered in an examination for life insurance, and which have led to refusal or postponement in consequence. Many are in nervous subjects, who suffer from "the heart in the mouth" of the embryo orator or cricketer or performer in public of any kind, and I have little doubt that a large number of these murmurs are the result of the physiological play that I have alluded to. Long years ago we were shown and taught—oh! physiologist, think leniently of me when in my mellow years I call up the shade of Wilkinson King—that on the right side of the heart there is a safety valve apparatus that allows of regurgitation, and by so allowing it fulfils a necessary function. Surely, also, under appropriate conditions regurgitation is to be expected, and looked for upon the left side of the heart, for it seems to me unreasonable to suppose, as I have already said, a nervous muscular organ with a throbbing vitality such as the heart possesses to be always in tone. And to this purely physiological up and down—I will not call it either failure or imperfection—may be attributed many of the muscular rumble murmurs, many of the systolic souffles, many of the purely postural murmurs. Many of these last must, I think, be true mitral leaks, although not due to disease. One is entitled quite consistently thus to speak of *valvular* leakage without disease.

I willingly admit, however, that as regards their origin in many cases of this sort it is quite permissible to remain in doubt, all I maintain being that it is very necessary to keep the various alternatives in mind and that one must not conclude in favour of dilatation without very careful consideration. I have often wished in regard to these conditions that it may be so much a matter of nervous impulse—and it would not be difficult to arrange, I should think—that some ingenious mind would devise a simple stethoscopic apparatus, electric or other, by which to examine the heart at a distance while the patient sleeps. Methinks that many a sound or action that now causes doubt might be more certainly relegated to the region of the unimportant.

One more argument may still be adduced against the too prodigal use of the term dilatation, which is often neglected: it is that the symptoms for which men and women apply for treatment are not such as are found in cases where dilatation is beyond dispute. Fainting is perhaps one of the commonest of all symptoms in these cases of spurious dilatation. It is a prevalent belief amongst men and women that fainting means jeopardy because of "weakness" of the heart. There is no doubt that the same idea is pretty deeply cut into the medical mind also. Why not? It seems so reasonable. Yet there is no idea more absolutely contradicted by experience. Do people with well-marked disease of the heart associated with dilatation faint? Surely they of all cases ought to, if fainting be a sign of heart disease. What does your experience teach you? I will hazard a guess that it tells you this: that fainting, as a symptom of pronounced heart disease, is so rare that probably few here to-night have ever seen it happen. And there is good reason why. The vascular mechanism prevents it, and a dropped beat in the pump is taken no instant account of in the capillaries, or in the nutrition of the brain upon which function depends. Faints are peripheral phenomena, and due to peripheral spasm, or relaxation, to nerve storm, and so on, and with them the pump has little to do. Thus, by the way, it is that an intermission of the heart beat, if unassociated with any obvious disease, is one of the most unimportant of cardiac aberrations, and a weak pulse, made so much of too often, has but seldom any sinister meaning *quâ* heart.

Another very common complaint of these people is that they are dreadfully tired; the least fatigue is too much for them. Is this a symptom of pronounced disease of the heart? By no means. Systemic fatigue, as Clifford Allbutt happily calls it, is no indication of heart failure.

And what of all the other signs—the pain in that region, for instance, is that a definite sign of a damaged muscle? What sufficient evidence is there that the heart shows more than a dull muscular sense? Is there not plenty to indicate that that surface area is a neuralgic one like the sciatic region—the shoulder, the face? What of the sighing respiration, the collapse, the experience of dreadful illness, and so on? Is it unwarrantable to say, as an encouragement to one who thus suffers—I don't dispute the suffering, only the cardiac origin and the danger to life—"If you are able to appreciate your sensations so acutely you may be pretty sure your nervous centres and your heart are still much too vigorous to be anywhere near the point of death." Heart disease (within the confines of which I emphatically include dilatation of its muscular wall) produces the very opposite of this; it leads to congestive stagnations, and therefore to somnolence and mental hebetude; to that Crossing of the Bar, of which but the one in a thousand, perhaps not that, thank God, is able to recognise the signals when actually passing over it.

Now what do I suppose to be the condition of strained or dilated hearts at their onset, under such exertion as may have happened? As I try to picture them I see first of all a presumably healthy heart, strung for a life of, say, 60 years of wear and tear. Is dilatation so easy a thing to bring about under such conditions of temporary stress as have been laid upon it? Can it be admitted that it is so frequently the cause as to explain the many cases that one sees? Take the young man after a well-contested race, and what is the actual condition of his heart? He looks bad enough, certainly, and temporarily there is, no doubt, often a considerable over-distension of the right side of his heart—a condition I should suppose for which Dr. Gee years ago suggested the term asystolism. But I take it there is little evidence of mischief on the left side, and the man is simply played out from excitement and physical expenditure; his nerve current has for the moment ceased to run; and the heart is therefore, as all the other viscera, running on its own, the engine being for the moment shut off. If it were possible to force it, then and there, to fight its battle o'er again, death or irreparable damage would be sure to follow. But is the muscle there and then *ever stretched*, that is dilated? This is, of course, possible for a few cases, but for the many that *powerlessness in living*, that cardiac atony that

looks so ill, is the sign of the heart's health, and in a few minutes, a few hours, a few days, it will be working as well as ever. In some few there will remain those signs and symptoms of doubtful meaning of which I have already spoken.

The question in my mind is whether even true heart-strains, by whatsoever evidence it is possible to locate them, are not due to defective innervation—abortive messages—rather than to failure of response on account of damaged (over-stretched) muscle. But in saying this one would not wish to dispute, for one cannot doubt, that a place must be reserved in cardiac pathology for the sometimes result of actual and progressive morbid changes starting from early conditions such as these, and Dr. R. W. Michell's observations at Cambridge on the initial and later stages of what appears to have been genuine cases of the strained heart are very suggestive. But it interested me much to read that as regards *dilatation* that persists he had never found it, except in such who had in addition to strenuous exercise suffered from diphtheria or rheumatic fever. I take it that in general medicine we have a good illustration of what chronic strain *will* do in some of the many cases that one meets with of the dilated heart of chronic renal disease. But spread over so long a time, this is probably an adequate cause; certain strenuous muscular occupations will, no doubt, do the like, but I doubt if such chronic processes give any justification to the term "dilatation without disease," which I confess to cordially disliking, because it is just here that over-anxiety is likely to step in and do harm, and where the true measure of the physiological capacity of the heart for labour needs to be correctly appraised. Errors must, of course, be made on either side. I do not doubt that any of us may underestimate the risks of exertion in a weakling's heart. Still, on the whole, one cannot but come to the conclusion that the heart muscle has a magnificent power of resisting strain, and that dilatation is seldom, indeed, other than a *result*, and *late stage* of real *disease*. Primary dilatation is surely very infrequent, except perhaps as senility advances and degeneration has taken place.

Whether after all this is said we can entirely do without some term such as acute or temporary dilatation for some few cases of sudden overstretching of the muscle wall I hardly feel inclined to decide. There are, of course, cases where, as the result of heavy work, *something* suddenly happens and the heart dilates, and perhaps this may be more often than I may seem to allow. To guard against that possibility I certainly hold it to be necessary that would-be athletes should be carefully selected, and boys graded and inured by gradual training, as is done now in most of our large schools; but in true dilatation I think one may fairly expect some special indications to suggest caution in the particular case. A sudden rupture of a valve is to the point. In such cases the symptoms are usually immediate and severe, and it does not take long to find out that something untoward has come to pass. In the cases of which I have been speaking, this is seldom or never the case, and therefore I have come to think that dilatation, as a condition easily caused, is more often in our thoughts than the frequency of its occurrence would seem to justify, and that by over-nursing it we prolong the state that we set out to cure.

But I have yet to give a still wider application to these remarks by including within their scope a large group that belongs to the decadent period of life. I may, perhaps, designate it as "the irregular heart of the over-fifties." The heart in such a case seems to tumble about in a most erratic fashion—if so I may speak when Dr. James Mackenzie has in this region rendered such distinguished service by his attempts after reduction of chaos to order; yet there may be no murmur and no signs of cardiac failure. These people will do a good day's work, yet they sometimes faint; they are sometimes giddy; the heart at times will quite suddenly change its rhythm and become quite regular, and then again relapse. One may see a like phenomenon in certain cases of tachycardia, the rapid action ceasing suddenly and being replaced by a slow movement. Often have I wondered, as you must have done, how the circulation could be carried on in such circumstances. There can be no doubt about the absence of all signs of cardiac failure. Indeed, when these occur my case fails, and dilatation has probably occurred. It is, I should think, not unfair to argue that the muscle cannot be of so very inferior a quality if it is able thus to perform its duties when acting at such a disadvantage in this higgledy-piggledy fashion. And thus questioning, I fancy that there may be a still deeper root to the matter than an essential muscle fault; that some of these cases are early signs of a *nervous centre growing old*; and that the faintness, giddiness, and irregularity of the heart may be, not cause and effect one way or the other, but special sense centres and heart both giddy together as the result of some deep-seated central nerve storm or degeneration. Many a time have I seen this condition come on in men and women who have lived a hard life of mental stress; several times, too, have I known it associated with the vertigo and loss of consciousness that has sometimes been called senile epilepsy; I have seen it come and go with an attack of gout; and I incline to link it with some cases of Stokes-Adams disease, which in like manner I have seen come and go in obedience to a similar toxic state and to the dictates of an epileptic storm. Some of these cases are no doubt cases of degenerate muscle, but I have doubts about many of them, and it has seemed to me that they do better if allowed to take moderate exercise and to live in conformity with the time of life to which they have attained than if, as cases of fatty muscle, they were condemned to bath-chair and bed.

To sum up, then. True heart strain—by which I understand a state of muscle that, if not dealt with by retreat from all active exercise for long periods, leads to dilatation of the heart—is a rare condition. Personally I cannot remember to have ever seen it, but then I should not do so. Dr. Collier, Dr. Michell, and those who have to supervise athletic exercise in its home are the men to determine both its frequency and its signs and whose opinion one would be glad to hear to-night. Dilatation of the heart, in its beginning, is evidently not easy to determine with certainty, for it may share signs and symptoms in common with many emotional and other nerve disturbances of which the heart is a past-master of expression. Cases of doubt one must admit to be common, and they call for circumspection as regards their management, but one must beware of timidity, and I cannot but think that this has of late years been much abroad to account for the frequency and the looseness with which the term dilatation of the heart seems to have been applied.

Portland-place, W.

FURTHER REMARKS REGARDING THE MOTOR FUNCTIONS OF THE STOMACH.

By H. M. W. GRAY, M.B., C.M. ABERD., F.R.C.S.EDIN.

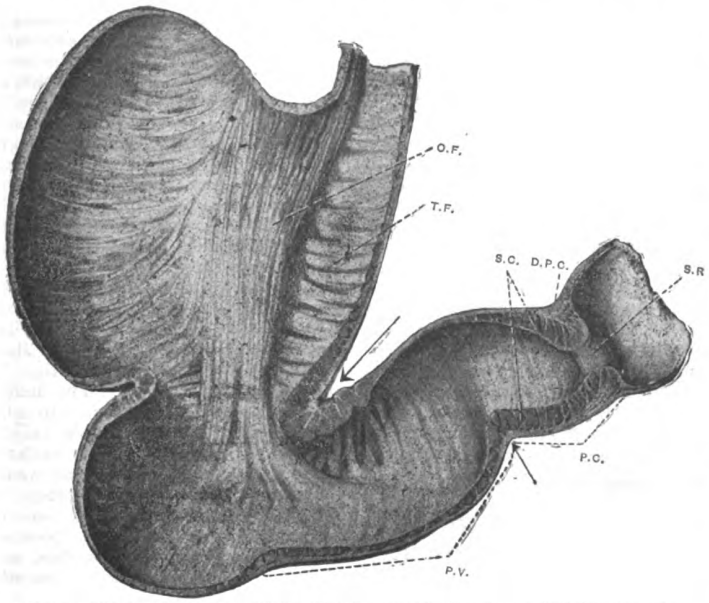
SURGEON AND LECTURER ON CLINICAL SURGERY, ROYAL INFIRMARY, ABERDEEN; SURGEON TO THE ROYAL HOSPITAL FOR SICK CHILDREN, ABERDEEN.

IN 1908 I published papers[1] in which I urged the importance of the "middle sphincter" of the stomach. Since then there have been many statements made, due chiefly to the interpretations of radiographers, which require criticism, because there is a danger of these statements being accepted as facts, whereas they seem, in absence of proper confirmation, to be more fanciful than truthful. These observers are seemingly unwilling to accept the presence of a "middle sphincter" of the stomach merely because it cannot be always demonstrated post mortem. Many observations, however, show that such a physiological "middle sphincter" does exist, and that in normal stomachs the parts of the organ on each side of this "sphincter" must be regarded as acting separately. The "middle sphincter" can be likened in some manner to the pylorus in that it holds back the stomach contents in the cardiac portion until they are in proper condition for being passed into the pyloric tubular portion, just as the pyloric sphincter acts in retaining the pyloric contents till they are in proper physical and chemical condition to be treated in the duodenum.

Several recent radiographers and others assert that the pylorus during gastric digestion descends naturally below and to the left of the umbilicus. I beg of them to ask their surgical friends to note in how many cases, when the abdomen is opened, the pylorus can be pulled by the hand

[1] THE LANCET, Feb. 22nd (p. 549) and July 25th (p. 224), 1908.

of the surgeon *from* the situation in which we are accustomed to look for it *into* the position which these radiographers make it assume. One must regard the muscular coats of the stomach as being less vigorous than the prehensile muscles of the average surgeon. Here in the North, at all events, there are not more than 20 per cent. of the stomachs thus examined which possess a pylorus capable of being pulled even down to the umbilicus, and one must remember that many of these stomachs are likely to have an *abnormally* mobile pylorus. When one thinks of the matter it is difficult to explain why the more or less longitudinal fibres of the gastric wall, even although assisted by the weight of the food in the stomach, should pull the pylorus into a position below and to the left of the umbilicus. The circular fibres cannot do it. It must be remembered that even *if* the pylorus is not so limited in movement as has hitherto been described, yet no one has challenged the fact that the cardiac orifice is the most fixed part of the stomach. The longitudinal muscular fibres would naturally tend to draw a less fixed part in that direction. The observations of these radiographers, to my mind, confirm my own, and I still prefer my own interpretation. They say that carbohydrate food begins to pass through the pylorus (displaced as described) in 15 to 20 minutes, and proteid in 30 to 45 minutes. These are the times when I observe food beginning to pass through the "middle sphincter." I think that these gentlemen mistake the "middle sphincter" for the pylorus. My interpretation is strengthened by the observation that food is not seen to pass this point any sooner where the stoma of a gastro-enterostomy is properly placed in the pyloric part of the stomach, nor does the cardiac part of the stomach completely empty itself in a shorter time in such a case.



The anterior half of a formalin-hardened stomach after removal of the mucous membrane. The lettered references need not be explained. (Kindly lent by the late Professor D. J. Cunningham to illustrate previous articles.)

The clinical symptoms of an ulcer in the pyloric end of the stomach give further support to the probability of activity of this physiological "middle sphincter." In a large number of such cases there is a fairly well-defined interval of relief after the patient takes food. This is apt to give rise to the diagnosis of duodenal ulcer, but the two may be differentiated by the fact that the interval of relief is shorter in a case of pyloric ulcer and the site of both pain and tenderness, as well as the reflection of the pain, differ from those of duodenal ulcer. This interval of relief cannot be explained satisfactorily by neutralisation, by the food, of irritating acid which may be present. If this were so one ought to have a similar relief in the case of an ulcer of the cardiac end, but here the pain follows immediately the swallowing of food and must be due to mechanical irritation of the food. Radiographers observe that food, when swallowed, passes to the lower part of the stomach. If there were no "middle sphincter," and especially if the pylorus were displaced as they describe and therefore formed the lowest part of the stomach, then one would expect an ulcer in the pyloric end to give rise to immediate pain, but it does not, unless the stomach is dilated and the "sphincter" therefore obliterated.

Before leaving the question of the "middle sphincter" one may repeat that it is possible that the action of the "middle sphincter," plus the general good tone of the pyloric portion distal to it, is responsible for the prevention of regurgitant vomiting of bile, which occurs most frequently in stomachs which were atonic before operation, and which also occurs occasionally during the atonic period of convalescence after a gastro-enterostomy and disappears completely, often without any special treatment, as the patient generally, and the stomach particularly, gains strength and tone. In such cases, however, a habit may soon be formed, and it is well to stimulate "tone" by lavage and tonics which will act on the gastric muscle.

I think there is no doubt that food, when swallowed, goes directly to the lowest part of the stomach, which part, at the beginning of digestion at all events, is immediately proximal to the "middle sphincter." It is not apparently a question of ordinary filling up of a bag. Gravity has, to my mind, little to do with what goes on. I think that too little regard is given to the remnants of the alimentary tube along the lesser curvature of the cardiac portion, which were so clearly shown in some of the drawings of the late Professor D. J. Cunningham (see Figure). This tubular remnant is probably responsible for the carrying of the swallowed bolus to the most dependant part of the normal stomach, whether the person is in the upright or horizontal position. This occurs in spite of the fact that food is already present in the organ. Some radiographers have demonstrated "blobs" of food passing along this part—surely due to segmentation similar to that which takes place in the small intestine. Further, it is possible that the action of this tubular remnant may explain the phenomenon which occasionally occurs after gastro-enterostomy has been performed—namely, vomiting of pure bile mixed with food swallowed but a few minutes before. The bile, having regurgitated through the abnormal and improperly placed stoma, collects in the cardiac end of the stomach in such quantity that the taking of food (carried to the lowest part of the stomach) is sufficient to stimulate vomiting in an organ already irritated by the excess of bile present. The bile being nearest the cardiac orifice is ejected first while the food, being retained, may keep up the patient's nutrition. It has impressed one how such patients can complain of most persistent and voluminous vomiting and still be in such good condition. The explanation I offer is at least a feasible one. The action of this tubular remnant would further explain the immediate and uniform pain which occurs, whatever may be the position of the patient, in ulcer of the lesser curvature in the cardiac portion when food has been swallowed. One would expect, if gravity alone acted on the food, even although aided by the propulsive power of the œsophagus, that when the sufferer lay, for example, on the left side some amelioration of the pain after swallowing would be experienced, but this is not the case.

We shall, I think, as time goes on, hear less and less of closure of the stoma after gastro-enterostomy. In the few cases which I have had the opportunity of examining when the abdomen has been opened, even years after the operation, I have never found any indication of this having occurred. Modern careful technique in making the stoma, which practically ensures "first intention" of the wound at its margin, obviates any such closure. Examination of such cases with X rays after a "bismuth feed" has invariably shown that food continues to pass out through the stoma in certain, but possibly variable, proportion. The persistence of the stoma ensures a safety-valve action when necessary.

It has been very freely stated by surgeons throughout the world that if gastro-enterostomy is done in stomachs in which no pyloric stenosis exists the patients are frequently worse after the operation than before. This is said to be the case, especially, if no other demonstrable gastric lesion is present. The neurotic condition of the patients, instead of the inefficiency of the surgeon, has been blamed for the bad result. I have had such bad results, and I have taught according to the usually accepted ideas, but have never been quite satisfied that the statement is a correct one. In a case where gastro-enterostomy is done for duodenal ulcer where no organic pyloric stenosis exists the ulcer heals, the pyloric spasm disappears, and then results a patient with a gastro-enterostomy stoma present in a stomach which is otherwise normal, yet it is only the rare exception in such cases to have trouble. I believe that such so-called neurotic patients with prominent gastric symptoms are subjects of some lesion distal to the pylorus, whether it be in the gall-bladder, appendix, or other part of the alimentary system, and the gastro-enterostomy will undoubtedly make many of them worse than before because the "check action" of the pylorus will then be done away with, and food, probably undigested, allowed to go where it is not wanted. (If there is irritation in any part of the alimentary tract beyond the pylorus there is apparently a "message" sent to the pylorus to hold food back. In such cases digestion is therefore upset even to the extent of causing vomiting, when relief is obtained usually at once. If a gastro-enterostomy is done in such cases without removal of the cause of the symptoms, it is more than likely that the symptoms will be aggravated because this check action is rendered inert by food passing through the stoma.) I believe that as the principles exemplified in the valuable writings of the Mayos, Moynihan, and H. J. Paterson become more widely known and appreciated we shall hear correspondingly less of this "bogie." I think that the acceptance of the view I wish to combat has been rather pernicious in that it has led surgeons to take an unnecessary risk by excising gastric ulcers in cases where this is unduly difficult so as to avoid the performance of a gastro-enterostomy, which of itself will, I am convinced, cause healing of the ulcer. Gastro-enterostomy should be done as a routine in such cases in order to remove permanently the local conditions which have led to the formation of the ulcer and therefore to prevent further trouble. It matters not whether gastric ulcer is due to purely local causes or whether it is the result of a more general alteration in metabolism resulting in a vciious circle which brings about the breakdown in the stomach.

Aberdeen.

INTRA-MEDULLARY LESION (? GUMMA) OF THE SPINAL CORD WITH BROWN-SÉQUARD PHENOMENON AND RECOVERY.

BY ALFRED BERNSTEIN, M.B., B.S. LOND.,
RESIDENT OBSTETRIC ASSISTANT, LATE HOUSE PHYSICIAN, WESTMINSTER HOSPITAL.

A FEMALE, aged 18 years, was admitted to Westminster Hospital on Dec. 8th, 1909, under the care of Dr. F. de Havilland Hall, to whom I am indebted for permission to publish this case. The patient was admitted complaining of pain in the back of the head and neck with stiffness and weakness of the right arm and leg. She first noticed stiffness in the neck about three years ago. About two months ago (October, 1909) there was slight pain in the back of the neck radiating over the back of the scalp, especially on the right side. There was also some numbness on the posterior right scalp. This had continued till the present. In the second week in October there was some weakness in the right arm first noticed in the shoulder, which gradually got worse, and by Nov. 8th the weakness had extended down to the hand. About the same time there was weakness in the right leg, which also got steadily worse. There was no numbness, but some slight tingling in the finger-tips. The patient was a packer. She had an attack of influenza a year ago (December, 1908), and 10 months ago was greatly shocked by her father's death, and "had not been the same since." The father died from phthisis. The mother and the other children had excellent history—no syphilis, cancer, or tuberculosis.

The patient was a well-developed, intelligent, bright girl. Dec. 10th: Pupils dilated, equal, and react normally. External ocular movements normal. Fundi normal. Face, palate, tongue, muscles of mastication normal. No cutaneous anæsthesia to cotton wool. Diminution to pin-prick, heat, and cold on left side of trunk bounded by the middle line, and extending as high as the second left rib in front. Includes also left lower and upper limbs. There is a slight patch of anæsthesia on right lower scalp behind. Marked weakness right upper limb at all joints. No movement impossible except extension of interphalangeal joints. Weakness more marked in distal part of limb. Moderate atrophy of interossei, thenar, and hypothenar eminences of right hand. Diaphragm, intercostals, and abdominal muscles normal. Moderate weakness of right lower limb at all joints against resistance. No movements impossible. Wasting of right arm and leg, especially deltoid and hand muscles. Gait: slight dragging of right leg. Supinator jerks: R. > L. Knee-jerks: R. ++; L. = normal. Right patellar clonus and ankle clonus. Plantar reflexes and abdominal reflexes not elicited. Sphincters normal. No spinal rigidity or tenderness. Other systems normal.

Progress of case.—During the next week the physical signs became more marked, and by Dec. 17th there was ankle clonus on the left side but less than on the right. Likewise left knee-jerk became exaggerated, but not so much as on the right. The atrophy of the muscles increased, especially the hand muscles, which were extremely wasted, giving well-marked "claw-hand." About the last week in December there began to be an improvement, which steadily progressed. On Dec. 31st she had gained 2 pounds 10 ounces in weight. Right arm was slightly stronger and the fingers could be slightly extended. On Jan. 7th right arm and hand much stronger. Thenar and hypothenar eminences filling out and movements improving. No reaction of degeneration. Good reaction to faradism. K.C.C. > A.C.C. Jan. 14th: Sensation in left leg normal. There is now no ankle clonus on left, while that on right is much less sustained than before. Jan. 21st: Still steady improvement. Now only the slightest wasting and weakness of interossei. The other muscles almost normal. Walks quite well. At end of the month patient quite well, and when seen two months later showed no signs of disease and said she never felt better in her life. Lumbar puncture on Dec. 28th gave 25 c.c. of fluid under increased pressure. The fluid was normal, containing only one or two lymphocytes to 1-6 inch field, and cultures were sterile. Wassermann's reaction on Jan. 6th was negative. Unfortunately this was not done until antispecific treatment had been used some weeks, but there was never any reason to suspect either congenital or acquired syphilis, and there was little hope that the use of mercury would be followed by recovery. The treatment was inunctions of mercury together with massage, and internally potassium iodide. The mercury and iodides were well borne.

Remarks.—The lesion in this case was evidently situated in the right half of the substance of the cord, especially the anterior horn in the upper dorsal region. But the nature of the lesion is more difficult to determine. Tumours of the cord, tubercle, &c., a plaque of disseminated sclerosis, would hardly have cleared up so rapidly after advancing so far and so quickly. Neither would anterior poliomyelitis account for all the physical signs. Hysteria is excluded by the marked rapid wasting of the intrinsic muscles of the hand and the absence of other hysterical stigmata. The rapid development of all the symptoms followed by as rapid a recovery after anti-syphilitic treatment seem to point to the specific origin of the lesion, which is supported by the fact that mercury was so well borne.

Spinal gummata are very rare. Gowers and Williamson have described them in the posterior horn. They usually start in the membranes or roots, much more rarely in the substance of the cord, and there is as a rule some associated meningitis manifested by numbness and tingling in the limbs and perhaps some stiffness and pain in the neck. Unfortunately in this case lumbar puncture was not performed till more than two weeks after mercurial treatment was started. It was then quite normal fluid, though in excess and under pressure. Armstrong has reported a case of crural monoplegia with anæsthesia of opposite limb and Mott a similar case.

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A CASE OF INTESTINAL OBSTRUCTION CAUSED BY AN ENTEROLITH SPONTANEOUSLY CURED BY EVACUATION THROUGH AN UMBILICAL FISTULA.

BY DAVID M. GREIG, M.B., C.M. EDIN., F.R.C.S. EDIN.,
SURGEON, DUNDEE ROYAL INFIRMARY; LECTURER ON CLINICAL SURGERY AND SURGICAL DISEASES OF CHILDREN, ST. ANDREWS UNIVERSITY; SURGEON, ROYAL VICTORIA HOSPITAL; HONORARY CONSULTING SURGEON, ARBROATH INFIRMARY.

THREE reasons justify the publication of the following isolated case—viz.: enteroliths are not common; they are specially rare in children; and enterolith obstruction is seldom recovered from by spontaneous evacuation through an abscess.

A scholar, aged 12 years, was admitted to my care in the Dundee Royal Infirmary on Dec. 23rd, 1909. He was the third of five children, one of whom had died aged 45 days from congenital icterus. His mother was well and the other children were said to be "fairly strong." His father had died three years previously from locomotor ataxia. The patient had never been a very robust child. Immediately after birth there seems to have been some inflammation about the stump of the cord and this culminated in an abscess which was incised, but it gave no trouble after that and healed well and completely after six weeks. He was solely breast-fed until he was nine months old, and though troubled with flatulence as a child, was fairly healthy during the first nine years of his life. During that time he was very difficult to please with regard to his food, and seemed to have a special objection to liquid in any quantity, and a predilection for dry food. There is no history of indulgence in porridge. At the age of 9 years he had two "convulsion fits" within a fortnight, apparently hysterical, on hearing of his father's death, and since then, his mother thought, there had been greater difficulty in pleasing him with his food. During the six months preceding his admission he had three attacks of colic or "cramp in the stomach," which came on from no obvious cause and lasted about 24 hours. Each attack began with pain in the region of the umbilicus, and was followed after a couple of hours' duration by vomiting. The bowels were not affected in any way, neither constipation nor diarrhœa being noted or complained of. The attack for which he was brought to hospital had come on ten days previously to admission. The usual pain occurred, was followed by vomiting, and was treated by hot applications. The expected relief in this instance, however, was not obtained by the usual remedies. The bowels were constipated, and the pain was not constant, though it varied much in severity. In many ways the attack simulated appendicitis.

On admission the child looked very ill; the tongue was dry and covered with thick brown fur and the lips with sordes. The temperature was normal, the pulse was 96, and the respirations were 20 per minute. The abdomen was scaphoid and symmetrical, and there was a pointing abscess at the umbilicus which was protruding, inflamed, and fluctuating. It was about this area that the pain seemed to culminate, and elsewhere the abdomen could be palpated pretty easily. There were no tumour, however, and no abnormal dulness. On the day following admission, though sick and vomiting, he was easier because the umbilical abscess had burst and was discharging offensive pus. Then for six days he had less pain and no sickness, and there continued a copious foul-smelling discharge which necessitated frequent dressing, but the boy did not seem to make progress. Two days later, after an increase of pain, the vomiting recommenced and he was unable to retain any food during 24 hours. He seemed thinner and weaker and there was still a large amount of pus pouring from the umbilical sinus. On Jan. 3rd, 1910, 11 days after admission, the sinus was cautiously enlarged under general anæsthesia and a drainage-tube was inserted. This was followed by a diminution of the discharge, but it was noticed on the 5th that there was some fæcal matter mixed with the pus. The slight improvement was maintained for a few days, but by the 10th he was again ill, and thereafter seemed from day to day to be losing flesh and strength. The sinus gradually drew together and appeared to be inadequate for the evacuation of the cavity it led to. Consequently, on Feb. 14th the sinus was enlarged by dressing forceps, and an attempt was made to provide more efficient drainage. This was successful to some extent. On March 5th, while the wound was being dressed, a rounded calculus-like mass presented in the sinus and was easily removed, its escape being accompanied and followed by an unusually large quantity of pus. From that moment the wound healed rapidly and the boy's condition materially improved, and he was discharged healed and looking well and stout ten days later. His general improvement was as striking and remarkable as the improvement in the local condition.

The structure which was discharged proved on examination to be an enterolith. It was globular, measured 2½ inches in circumference, rather larger than an ordinary marble, being smooth for the most part but not polished, and when dried its most striking feature was its lightness. It weighed 24 grains, and, indeed, was considerably lighter than a pith ball of equal size. It bears a striking resemblance in miniature to the concretions commonly found in the colon of the horse.

With the history this child presented, the imperfect health he had enjoyed, and the poor physique he had attained, even in the absence of a history of alternating constipation and diarrhœa, it is not to be wondered at that on admission the diagnosis of tuberculous peritonitis with perforation and the formation of a fæcal fistula was formed; indeed, it is probable that had it not been for the dangerous proximity of a fœtid sinus he would have been operated on under this supposition. Still less is it reprehensible that before admission the previous history, the sudden onset, the constipation, vomiting, and pain, should have led to the diagnosis of appendicitis.

The enterolith was of the light-coloured variety, and as above noted, there was no history of special indulgence in porridge, which is supposed to predispose to the formation of such avenoliths, or oat-stones. It is almost contrary to what one would expect, but characteristic of the condition, that the intestinal obstruction to which the "stone" gave rise should be of a chronic character and spread over years before the condition becomes acute. Where the enterolith lay in this case it is impossible to say. The sinus led from the umbilicus backwards into the right loin, but the obstruction must have been in the small intestine, for a foreign body of its size could not cause obstruction in the great.

There is a considerable, though scattered, literature on the subject, and its perusal and of that of intestinal obstruction from foreign bodies, suggests that in some cases of "gall-stone intestinal obstruction," where there is a history of years of recurring colic and vomiting but no jaundice, the "gall-stone" might prove to be an enterolith on investigation. In the above case the enterolith felt solid and heavy, almost stone-like, when first extruded and was quite as solid and firm as many a single gall-stone. It was only after drying that it assumed its pale yellow colour and showed its peculiar lightness.

Dundee.

NOTES UPON AN OUTBREAK OF ILLNESS DUE TO TINNED MEAT IN THE CITY OF CARLISLE.

BY JOSEPH BEARD, F.R.C.S. EDIN., L.R.C.P. LOND., D.P.H. CAMB.,
MEDICAL OFFICER OF HEALTH, CITY OF CARLISLE.

ON August 26th last I received information of an outbreak of sudden and suspicious illness in the Denton Holme district of Carlisle, which upon investigation was found to have occurred in a number of persons who had partaken of the contents of a tin of American corned beef; 21 persons in all were affected, of whom several were said to be suffering somewhat severely. The illness appears to have manifested itself without any premonitory symptoms by the occurrence of vomiting, diarrhœa, pains in the stomach, and collapse, but fortunately the outbreak was not attended with any fatal result, and all those affected are now well.

I secured what remained of the suspected meat and divided it into two portions, one of which together with the tin I forwarded to the city analyst, Dr. R. Hellon, to examine

the specimen for irritant metallic poisons and any evidence of faulty tinning or accidental punctures in the tin; the remaining portion was forwarded in a sterile bottle to Professor S. Delépine of Manchester for the purpose of a complete bacteriological examination.

Having obtained a list of all who had purchased portions of the meat investigation was then made at each house, which resulted in information being obtained that ten families had made purchases of the meat in quantities of from two ounces to half a pound. In the 10 families 21 persons partook of the meat and in each instance the effect was practically the same, although in some cases the symptoms were more severe than in others. It will be observed that only a small quantity of meat in each case was purchased and the severity of the attack appeared to vary in direct proportion to the amount of the meat eaten, the worst case being that in which one person (a male adult) consumed a quarter of a pound. The earliest symptoms of the disease manifested themselves at periods varying from 15 minutes to 4½ hours after the consumption of the meat, but in the greater number of the cases the interval was about an hour, and in some of the cases in which the symptoms were said to have been severe medical men were called in. The meat was purchased by the shopkeeper from a firm of first-class American packers, and the particular brand of meat to which the tin in question belonged is a brand which has a good reputation for quality and packing.

It would perhaps be advisable here briefly to outline the information obtained with regard to the distribution of the individual portions of meat purchased.

A. purchased a quarter of a pound of the meat on the morning of August 25th, which was partaken of at breakfast by three persons, aged 24, 18, and 15 years respectively; all three were shortly afterwards seized with vomiting, diarrhœa, with collapse, and some loss of power in the lower limbs.

B. purchased a quarter of a pound of the meat in the early morning of the 25th, some of which she partook of and shortly afterwards exhibited the same symptoms as the previous cases.

C. purchased a quarter of a pound of the meat on the night of the 24th, which was taken by her husband to his work and which he ate at 3 A.M. on the morning of the 25th. He was shortly afterwards seized with violent pains in the abdomen, vomiting, diarrhœa, and collapse. He also lost the power of both legs and was removed from his work to the house of a relative who lived near, where he remained for about 24 hours in a dangerous condition.

D. purchased a quarter of a pound of the meat on the morning of the 25th, which was eaten at mid-day by her husband and two children. At 3 P.M. in the afternoon one of the children returned home from school, the husband had to leave his work, and at 5 P.M. the second child became ill; all exhibited symptoms of vomiting, diarrhœa, and collapse.

E. purchased a quarter of a pound of the meat on the morning of the 25th, which was partaken of by her husband and herself. The husband had to leave his work through vomiting and diarrhœa, and later in the afternoon she was attacked with vomiting, diarrhœa, and collapse.

F. purchased a quarter of a pound of the meat on the morning of the 25th, some of which she took for her midday meal, and within an hour she was seized with vomiting, diarrhœa, and collapse.

G. purchased one pennyworth (2 ounces) of the meat on the night of the 24th which she made into a sandwich for her husband. The husband ate this at 3 A.M. the following morning and was shortly afterwards seized with vomiting, diarrhœa, and collapse. The wife whilst making the sandwich ate a piece of about the size of a hazel nut and was seized with diarrhœa shortly afterwards but no other symptom.

H. purchased half a pound of the meat on the night of the 24th, which was eaten for breakfast next morning at 7 A.M. by her husband, two sons, and a niece. At 8 A.M. one son was seized with vomiting, diarrhœa, and collapse, shortly followed by the father, brother, and cousin exhibiting similar symptoms, with the exception of the younger brother, who had no vomiting.

J. purchased a quarter of a pound of the meat on the night of the 24th which she made into a sandwich for her husband, during which process she ate a small piece about the size of a walnut. At 1 A.M. the husband ate his sandwich, and at 3.30 A.M. he was seized with pains in the abdomen, vomiting, diarrhœa, and collapse. He managed to get home, and on arriving there found his wife in a similar condition. His wife was quite well in 24 hours but he was not fit for work for five or six days.

K. purchased a quarter of a pound of the meat on the night of the 24th, part of which she and her father-in-law partook. They were both seized shortly afterwards with vomiting, pain in the abdomen, and some collapse.

On August 29th I received the following provisional report from Dr. E. J. Sidebotham, assistant to Professor Delépine in the Public Health Laboratory, Manchester:—

> The specimen showed no appearance of decomposition, but it is extensively infected with micro-organisms. These can be seen with a low magnification forming colonies on the surface, and they have been obtained by cultivation from the interior of the meat. The forms so far isolated are not ones usually associated with cases of food poisoning. Further investigations are being made, and a report will be sent as soon as possible. The specimen is unfit for human consumption.

I also received the following provisional report dated Sept. 1st from Dr. Hellon upon the chemical examination of the meat:—

> In compliance with your request I have made a most careful chemical examination of the American corned beef which I received from you on 27th ultimo. My search has been directed chiefly to the discovery of the presence or absence of arsenic, tin, and lead, and incidentally to that of other metallic poisons. The result of my investigation has been to show conclusively the absence of any poisonous metal which could have caused the illness you have described to me. I am therefore convinced that if (as appears probable from the symptoms) this illness was caused by an irritant poison, the poison was not a metallic one.

On August 31st I received a further report from Dr. Sidebotham as follows:—

> The meat had no unpleasant smell and there were no signs of decomposition. On inspection with a low magnifying power numerous colonies could be seen on the surface. These were examined microscopically and found to consist of cocci and small bacilli. On cultivation numerous organisms were obtained both from the interior and the outer surface of the meat. These consisted of cocci of two sorts and a yeast. By anaerobic cultivation two sorts of bacilli were obtained. None of these organisms were of the sort usually associated with cases of the gastro-intestinal form of food poisoning.
>
> The following experiments were carried out. Three guinea-pigs and three mice were fed with portions of the meat; one of the guinea-pigs died in 48 hours, but post mortem there were no signs of gastro-intestinal irritation and no obvious cause of death was found. The other guinea-pigs and the mice were unaffected. Two guinea-pigs were inoculated subcutaneously with a watery extract of the meat and were unaffected.
>
> A substance was obtained by the chemical method used for isolating toxins. This was tested by subcutaneous inoculation of a guinea-pig and caused no ill-effects. The meat is extensively contaminated and quite unfit for food, but we have not succeeded in isolating the organism or substance which has rendered the meat pathogenic.

Whilst waiting for the report of the city analyst upon the condition of the tin, I wrote to Dr. Sidebotham asking him if he would supply me with further information relating to the morphological and other characteristics of the bacilli under observation seeing that they were, in his opinion, unclassified varieties, in reply to which I received the following report:—

> 1. A staphylococcus which produces yellow colonies on agar and gelatin, liquefies gelatin somewhat slowly.
> 2. A staphylococcus which produces white colonies on agar and gelatin, liquefies gelatin rapidly. These two organisms were very abundant, and in about equal numbers.
> 3. A small yeast which was present in very small numbers.
> 4. Bacilli of two varieties which were obtained by anaerobic cultivation of the meat, of which the relative numbers were not obtained. As none of these organisms showed any pathogenic action on guinea-pigs and mice it was not thought necessary to carry the investigations further.

Dr. Hellon's report upon the tin is as follows:—

> In compliance with your request I have returned to you the tin which contained the corned beef suspected of having caused the illness in Denton Holme, also the label which I detached from the tin. I have carefully examined the tin with a lens but have been unable to discover any perforation or opening through which air might have leaked in. As a test I filled the tin with boiling water, and after the water had cooled I carefully searched the outside of the tin with a lens for minute drops of water but found none. The loose top of the tin could not be subjected to this water test, but the lens showed no flow in the soldering through which air might have entered. I am therefore of opinion that the tin was sound and airtight.

The last two reports conclude the bacteriological and chemical investigation. The report of Dr. Hellon showed pretty conclusively that the meat could not have been infected after leaving the packers as a result of faulty tinning or subsequent accidental punctures; furthermore, it must be remembered that the principal organisms under observation were of the anaerobic variety. The questions for me to decide were: (1) at what period the meat became infected; and (2) whether the infected meat was responsible for the outbreak of illness.

With regard to the first question, the meat might have been infected at some period either before or during the process of tinning or after the meat was opened at the shop, but the latter theory is negatived by the fact that the principal organisms present were of the anaerobic group, that the portions of meat were purchased by the several householders so shortly after the tin was opened and eaten within a very short interval following—so short, indeed, that the amount of the growth of the organisms present in the meat would have been impossible, even assuming that they had been of the aerobic variety. Therefore, upon the evidence I am convinced that the meat was contaminated previous to, or at the time of, tinning at the factory in America.

In deciding the second question due regard must be given to the fact that not only was the history as to the consumption, onset, and other clinical features the same in each case, but also (*a*) that the vomiting, diarrhœa, and other symptoms came on suddenly and acutely within a very short interval of eating the meat; (*b*) that every person who partook of the meat was ill; and (*c*) that the meat in question was the only article of food eaten in common by the several persons affected.

Outbreaks of food poisoning are not altogether uncommon and do not always terminate so favourably as the one under review. In this class of poisoning the ill effects are due to the ingestion of pre-formed poisons which are elaborated by the micro-organisms in the infected food. The poisonous agent does not undergo any further bacteriological change in the human system, and thus, there being no period of incubation, the symptoms come on suddenly, which constitutes an important comparison to that class of cases in which the illness is due to the development or proliferation of the micro-organisms within the blood or tissues of the body.

In criticising the bacteriological reports, which were to the effect that neither the feeding nor the inoculation experiments upon the guinea-pigs and mice gave rise to a fatal issue, it must be remembered that the effect of all toxins is proportionate to the virulence of the toxin and the amount received into the system, and as there appears to be no doubt that the portion of the tinned meat eaten in each case was the cause of the illness, the experimental results by Dr. Sidebotham, together with the non-fatal result of the outbreak, confirms me in my opinion, as expressed to my committee in a report dated Sept. 2nd, that the toxins at the time the meat was eaten were in all probability not of a very virulent nature.

Carlisle.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF THERAPEUTICS AND PHARMACOLOGY.

Action of Sulphur as Intestinal Antiseptic.—Experimental Administration of Drugs of the Digitalis Group.

A MEETING of this section was held on Nov. 15th, Professor A. R. CUSHNY, the President, being in the chair.

Professor R. B. WILD (Manchester) read a paper on the Action of Sulphur and Certain of its Compounds as Intestinal Antiseptics. In addition to its action as a mild purgative, sulphur has a definite antiseptic action in the intestine owing to the formation of H_2S when bacterial decomposition takes place in its presence. To this action may probably be attributed the traditional efficacy of sulphur and of sulphurous waters in chronic gout and rheumatism, and in certain skin eruptions. The superiority of sulphates as purgatives is in part due to their reduction to sulphides in the bowel. The preponderance of plants containing sulphurous volatile oils among those used dietetically is remarkable. Long-continued administration of sulphur causes depression. Sulphur is tasteless, insoluble in the stomach, without action on digestive enzymes, forms in the intestine antiseptic substances which penetrate to all parts of the bowel, has valuable laxative properties, and is cheap.

Dr. H HUME TURNBULL gave a further account of the Experimental Administration of Drugs of the Digitalis Group under Dr. James Mackenzie and Professor Cushny, which the latter dealt with in his presidential address. Strophanthus was only about one half as active on man as digitalis, B.P. tinctures being used in both cases. Cases of rheumatic disease were most distinctly benefited, and especially those with auricular fibrillation. For the latter class of case the pushing of digitalis was the essential treatment. The drug was given in full doses until "physiological" effect (nausea, vomiting, headache, giddiness, &c.) appeared, then stopped and recommenced in smaller doses till the minimum amount which would control the heart was found. The intelligent patient could then be left to dose himself by his own sensations. In cases with partial heart-block great care was necessary.

A lively discussion followed, in which the following took part: Dr. HARRINGTON SAINSBURY, Dr. E. I. SPRIGGS, Dr. J. GRAY DUNCANSON, Professor WILD, Dr. H. H. DALE, Dr. CAMERON, and the PRESIDENT.

Dr. TURNBULL replied.

MEDICAL SOCIETY OF LONDON.

Heart Strain and Dilatation.

A MEETING of this society was held on Nov. 28th, Mr. CHARTERS J. SYMONDS, the President, being in the chair.

Dr. J. F. GOODHART read a paper on Heart Strain and Dilatation, which is published in full on p. 1607 of this issue of THE LANCET.

Sir R. DOUGLAS POWELL, in the course of the discussion that followed, said that he agreed with Dr. Goodhart that a large number of cases of dilated heart existed in the imagination of the observer. In regard to cases of so-called heart strain the most important point was that of diagnosis. It certainly was his experience that many of the cases in which the condition was brought about by excessive athletic exercises in which symptoms were attributed to the heart were cases in which there was a very great amount of anæmia. He had observed that people who had overtaxed their muscular system for a long time were apt to become anæmic. He had the utmost respect for the importance of X ray photography in certain conditions of the heart and aortic disease, but he did not think X ray photography was of much value in estimating the minute shades of differences in cardiac dilatation.

Sir LAUDER BRUNTON thought that there was much similarity both in pathology and treatment between strain of a joint and strain of the heart. If the strain of a joint was slight it was best treated by gentle movement from the first, but if it were severe perfect rest was required at first and gentle exercise afterwards, and the same was the case with cardiac strains. Cardiac dilatation might sometimes be due to causes in the central nervous system, but one of the most typical cases he had seen was in a healthy young officer who carried a heavy man on his back round the barrack yard for a wager. In disordered heart of advancing years one had to remember the importance of the general nutrition in which the heart shared, and exercise was often very beneficial for that.

Dr. HENRY DAVY urged the great importance of recognising the connexion of decayed teeth with the condition under discussion. He narrated the facts of a case of a patient of his of about 63 years of age, who was a teetotaler and never had syphilis nor any other disease, and yet had manifest atheroma of all his arteries and a hypertrophied heart with the apex beat well outside the nipple and a feeble unsatisfactory pulse, with an occasionally soft mitral systolic bruit after much exertion. He had always been athletic, had captained the cricket team at a public school, and was a university "blue" in cricket and football. He was said to have suffered from "heart strain" when at college and was just one of those cases which might be put down to over-athleticism. But that clearly was not altogether the explanation of his condition. A few months after seeing the patient his sister came under Dr. Davy's care in precisely the same condition as her brother; if anything, the atheroma and feebleness of the heart muscle were worse. That lady had never done any muscular exertion in her life; she had, on the contrary, always led a sedentary life, and the chief point in which she agreed with her brother was in having very bad teeth; in fact, neither her dentist nor Dr. Davy himself had ever seen teeth in a worse state of decay. It was clear, therefore, that the condition in the man was not due altogether to his former

athletic life, and Dr. Davy was still looking for a case in which muscular exercise had damaged a perfectly healthy heart.

Dr. W. COLLIER (Oxford) said he was often consulted in the case of athletes with definite dilatation of the right side of the heart, and occasionally mischief on the left, concerning the advisability of these patients indulging in hard athletic exercises, and in such cases he had vetoed such exercise. The physical signs and symptoms upon which he relied were abnormal epigastric pulsation and a definite murmur running up the left side of the sternum systolic in time.

The debate was adjourned until Monday, Dec. 5th.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

President's Address on Some Recent Clinical Experiences.—Locomotor Ataxy.

A MEETING of this section was held on Nov. 11th, Sir JOHN MOORE, the President, being in the chair.

In his introductory address the PRESIDENT embodied notes of a number of cases, perhaps of every-day clinical experience, but which, in his opinion, threw more or less light upon obscure features in diagnosis and pathology or illustrated some practical points in treatment. Speaking of lobar distribution of pneumonia in childhood, he said that nothing was more remarkable in the epidemic history of Dublin during the last quarter of a century than the steady decline in prevalence of enteric fever, the all-but disappearance of typhus fever, and the ominous increase of acute pneumonia—a disease which was much more appropriately termed "pneumonic fever." This acute infection had, in fact, taken the place of the old classical continued fevers in the nosology of the Irish capital. Many of their pneumonia patients in recent years had been children of quite tender age. According to the old teaching one would have expected to meet with a lobular rather than a lobar distribution of mischief in the lungs in such circumstances. But the reverse was the fact. This point was illustrated by a series of eight cases of pneumonia in children aged from 6 months to 4 years. A further case of acute pneumonia was quoted to show that apical fibrinous pneumonia resolved slowly. And in yet another case lumbar puncture was performed with immediate benefit to the patient. Two examples of ataxic typhoid fever were described, recovery taking place in each instance. The President laid stress on the extreme therapeutic value of camphor as a stimulant, antiseptic and sedative. Two other cases were given in illustration of the diagnostic value of Widal's test. One, in which the test was negative, proved to be acute general tuberculosis. The address concluded with reports of a case of amyotrophic lateral sclerosis and of a remarkable staphylococcic infection causing a six months' fever and controlled by vaccination with an antistaphylococcic vaccine.

By permission of the President, Dr. W. BOXWELL showed another case of Amyotrophic Lateral Sclerosis. The case was an early one, giving a history of weakness and wasting in the hands and arms of only two months' standing. The patient was a woman, aged 20 years, who on admission to hospital showed the typical wasting and paresis of the hands and forearms. Her legs were also partially paralysed, with well-marked "dropping" of her right foot. There was no wasting of the legs, however, and the jerks were increased in all four limbs. There was slight increase of the "jaw-jerk," but no other evidence of bulbar involvement. When the patient came to hospital she could scarcely stand, and could not walk at all without assistance. She had, however, much improved, and could now walk pretty well, though the dropping of the right foot was still noticeable.—Dr. T. G. MOORHEAD said that this was the most marked and youngest case of the kind he had ever come across. He thought it was rather the exception than the rule to find an increase in the reflexes in the lower extremities.

Three cases of Locomotor Ataxy were exhibited as follows:—

Dr. J. F. O'CARROLL said the odd thing about his case was that up to two months ago the man was driving a car. While still driving he noticed himself staggering a little in his walk about August 1st. His sight had been failing since the beginning of September, and he could now see practically nothing. He had a primary atrophy of both optic discs. He had well-marked myosis, and there was no accommodation for distance other than the slightest in the right eye. He had anæsthesia and slow perception of sensory stimuli. Now and again there had been some slight incontinence of urine, which he was able to stop when he perceived it. He had had a good deal of constipation, and when he had a purgative his bowel prolapsed six or eight inches with little or no distress. He was also insensitive to retained urine, as 15 ounces had been taken away after he thought he had finished passing water. He was insensitive in the middle division of the fifth nerve to pain and touch. He had no history of lightning pains, but spoke of pains like rheumatism. He had no knowledge of having had syphilis, but he acknowledged that he had been in the way of contracting it.

Dr. J. B. COLEMAN showed a case of six or seven years' standing, the ataxy being badly marked. There was a history of lightning pains. There were Argyll Robertson pupils, loss of knee-jerks, and Romberg's sign. The patient had perforating ulcer of the foot. The ulcer began in a corn, which he cut. About six months ago a small sore appeared, which had gradually deepened. There was some suppuration but little or no pain. The ulcer was on the ball of the little toe.

Dr. M. DEMPSEY exhibited a case in a man 41 years of age. Twenty years ago he had contracted some venereal disease, followed by a slight rash on the skin. About four years ago he became dizzy and had to take to bed. As long as he was in bed he felt he had good power over his limbs, but he was unsteady when out of bed. Shortly afterwards his external rectus became paralysed. When he looked towards the right he saw two images. This was operated on and relieved to some extent. He had suffered from pains, which he described as boring in character, below the knee, not shooting but stationary. The pupil dilated when the neck was pinched. One was a little eccentric. His sensory phenomena were moderately marked. He had a little subjective anæsthesia. The fluid from a lumbar puncture taken that day showed a lymphocytosis. He had loss of heel-jerk and knee-jerk. His epigastric reflex was well marked; so was the umbilical.

NEWCASTLE-ON-TYNE CLINICAL SOCIETY. — A meeting of this society was held in the Geographical Institute on Nov. 10th, Dr. E. Napier Burnett, the President, being in the chair.—After an exhibition of cases to a large gathering, Dr. D. Wells Patterson read a paper on the Treatment of Certain Diseases of the Skin by Solid CO_2. At the outset he showed that the idea of treating certain skin diseases by means of cold applications such as ethyl chloride and liquid air was not a new one, but that in solid CO_2 we had an agent which was much more easily handled and therefore could be used in many different ways. He deplored the fact that as a rule extravagant claims were made for new remedies. He sketched the actual history of the use of solid CO_2. He then described the method of production of the snow, its moulding into pencils, and its application to patients. He noted that the aim of the treatment was to produce a certain reaction in the tissues, which reaction might be something between a slight erythema and a complete superficial necrosis of the skin. He urged the necessity of great care in its use because of the possibility of subsequent trouble arising, especially in tissues the vitality of which might be impaired—e.g., those of alcoholics, diabetics, and arterio-sclerotics; and further in those tissues which immediately overlay bone with little subcutaneous tissue. Another point which he raised was that in this process tissue cells, both normal and abnormal, were undoubtedly damaged and that in so far as they were still in the dark as to the etiology of malignant disease greater care should be taken. He here quoted Ribbert that the proliferative power of the various component cells of a tissue is regulated by "tissue tension," there being in health a condition of equilibrium among the various tissue elements; any pathological disturbance of such an arrangement might conceivably lead to the weakening of some inhibiting power

on the part of the less resistant tissue elements, and that this weakening might lead to a vegetative proliferation of these elements with the result of the formation of a neoplasm. Time alone could prove this possible danger to be real or imaginary, and while not wishing to be considered an alarmist, he urged the necessity of carefully choosing cases and as carefully noting the results. Preliminary antiseptic treatment of the skin was not generally carried out, but in view of the fact that many pathogenic bacteria could be exposed to very low temperatures without impairment of vitality Dr. Patterson considered that it would be profitable so to carry it out. The classes of cases in which he had used the method and obtained satisfactory results were: 1. Nævi of the pigmented mole and capillary types. 2. Certain cases of lupus vulgaris, though for the majority of cases of lupus he was doubtful of its value. 3. Lupus erythematosus, in which he had obtained very satisfactory results. 4. Rodent ulcer; small and soft rodent ulcers were satisfactorily treated by solid CO_2. He advocated in these the additional use of scraping with the curette in the frozen tissue under strict antiseptic precautions, and later treating the raw healing surface with the X rays. 5. Warts. The disadvantage here was the increase of time necessary for the application. 6. Hypertrophic scars and true keloids also reacted satisfactorily. Dr. Patterson concluded by pointing out the advantages of the method and its easy use, adding that in the latter there might lurk danger. The paper was illustrated by a series of cases.

Reviews and Notices of Books.

Hereditary Characters and Their Modes of Transmission. By CHARLES EDWARD WALKER, M.Sc., &c.; Director of Research in the Glasgow Cancer Hospital, &c.; Author of "Essentials of Cytology." London: Edward Arnold. 1910. Pp. 239. Price 8*s.* 6*d.* net.

THE appearance of this book, as well as that of two others noticed below, testifies to the increasing interest taken in the subject of heredity by workers and thinkers in many fields. The importance of this subject is scarcely greater than the difficulty of its study, and such an exceptionally lucid and thoughtful book as that now before us should meet with the welcome and command the consideration that it so fully deserves at the hands of all serious students. The author, already well known as an able worker in the field of cytology, emphasises, with justice, the importance of the study of cell phenomena in connexion with the problems of heredity, and devotes the first two chapters to a description, with good illustrations, of this aspect of the subject. The accounts given of current knowledge and of the author's own observations regarding the changes occurring in the fertilised ovum are remarkably clear. These chapters form an introduction to the rest of the book, which is written throughout with equal ability and clarity.

Although this work may certainly be regarded as an exceptionally good and critical compendium of the various views concerning heredity, and, as such, a highly instructive introduction to this study, it is specially marked by the setting-forth of a new theory concerning the "modes of transmission" of hereditary characters. The author states in the preface that, in attempting to apply recent discoveries, as well as experimental work upon cells, to some of these problems, he believes he has arrived at a satisfactory harmonising of the results of the Mendelian experiments with the observations of the biometricians. This, he says, has been done by showing that some parts of the cells involved in fertilisation are "distributed" in an alternative manner, while others simply divide in bulk. He thus puts forward a theory, dividing characters into "individual" and "racial," and attributing to each set of characters a different mode of "transmission." The so-called *individual* characters are transmitted, in the "Mendelian" or alternative manner, by the chromosomes; while the *racial* characters are blended and transmitted "by the potentiality of the whole fertilised cell."

It would be impracticable to enter fully within the limits of this review on the reasons which seem to throw some doubt on the soundness of this new hypothesis, and on the author's claim to have harmonised the results of the two biological schools which he mentions. However, a few difficulties and obscurities may be indicated. "Individual" characters are defined (on p. 184) as "either individual variations or characters inherited from a parent, which are not common to the race, but are confined to individuals that have inherited a variation from a near ancestor." This seems to be somewhat vague, and scarcely a definition in the strict sense, but rather a description of the meaning of the word as used by the author himself in setting forth his theory. Again, while holding that "individual" characters are recent, and that racial characters are ancient, the author has to admit that sex, which he regards as an individual character and as transmitted alternately, differs widely from other individual characters in this respect. Once more, the author in several places seems not to recognise any difference between "transmission" and "reproduction." Indeed, when discussing Mendelian views he suggests that the contention of Dr. Archdall Reid, that there is no real alternative inheritance in the case of "Mendelian" characters, but only alternative reproduction—or alternative patency and latency—is only a play on words. But the "character" of sex is not always produced "alternately," and an admittedly racial character may reappear in a cross when both parents lack this character; and thus a valid difference between inheritance and reproduction becomes apparent.

A very close agreement with the views and arguments of Archdall Reid, as set forth both in his earlier works and in his recent and important treatise on the "Laws of Heredity," may be noted in this volume. This is especially remarkable in Chapter IX., which deals with the Lamarckian view of the inheritance of acquired characters and the persistent misunderstanding or misrepresentation of "Darwinism" which pervades the writings of the present followers of Lamarck and Herbert Spencer. In many parts also of the chapter on Mendelism, and on the function of sex, as well as of the final chapter of conclusions, the author's line of argument is almost the same as that of Reid. In making this comparison we do not imply any disparagement of the extremely able and suggestive book which is the subject of this notice. The book bears every mark of independent thought and conviction. The author has evidently read widely and has made his own every conclusion which he has endorsed. He has produced a valuable contribution to the study of heredity, which will certainly take a serious place among writings on the subject, whether or not the special hypothesis which is set forth in it may fail to withstand the application of further tests.

Phases of Evolution and Heredity. By DAVID BERRY HART, M.D. Edin. London: Rebman, Limited. 1910. Pp. 259. Price 5*s.* net.

THE first five chapters of this book consist of short accounts and slight criticisms of some theories of heredity, leading up to a speculation on the origin and transmission of variations. In setting forth the speculation, which is termed "An Intrinsic Theory of Variation and Its Transmission," the author mainly relies on the observations and hypotheses of Mendelians, Mutationists, and Biometricians, and apparently takes no account of the views held by the majority of biologists who belong to none of these schools. In speaking of the inheritance of acquired characters, for instance, he seems to imply that all biologists, other than

those whose views he adopts eclectically as the foundation of his hypotheses, are "looking about for some mechanism that will make the actual somatic variations or injury causal in the germ-cells."

To put it briefly, the "theory" suggested by himself is that "the gametes, before combination to form a zygote, do not contain the complete outfit of determinants necessary to form an adult and its progeny"; that changes in the zygote make up the necessary complement; and it is these zygotic changes which produce the results known as "Mendelian." There is, according to him, a "propagative" and "somatic" part in each zygote, the former being the "primitive germ-cell mass" from which the future gametes will spring, while the latter gives rise to the body of the future individual. In the propagative part lie the determinants for the race; in the somatic part the determinants for the individual. In another place the author, in effect, sums up as follows his statements on Variation: the primitive germ-cells, which give rise to the gametes, arrive at the sexual gland without variation. In the gland they undergo variation in the determinants of the "unit characters," according to the Law of Probability. After the union of the gametes to form a zygote the "phenomena of Mendelism" arise, by which the unit characters are distributed in the zygote, again according to the Law of Probability. The author adds: "What biometricians may make of this speculation I do not know." What other biologists might make of it appears also a little problematical. While there is evidence in this book that the writer has read much and thought deeply round some of the problems of heredity, we cannot help missing a comprehensive grasp of the subject, such as would have given the critical power necessary to treat the various hypotheses and observations which he seeks to harmonise in the establishment of his own views.

The latter part of the book consists of more or less disconnected, though often interesting, essays.

The First Principles of Heredity. By S. HERBERT, M.D. Vienna. London: A. and C. Black. 1910. Pp. 199. Price 5*s.* net.

THE purpose of this book is to supply what is "desirable for the average intelligence to know" about heredity without assuming any previous knowledge of the subject on the reader's part. The author makes, therefore, no claim to originality, but he has achieved his stated purpose as well as could be expected considering the small space to which he has confined his compendium of various teachings on this very complex subject. The absence, however, from this book of sound critical leading must leave, we think, very indefinite impressions on the reader's mind, and we incline to the view that all those who really desire to understand the subject, or, still more, to pursue it further, should begin their study with one of the larger treatises, which deal more thoroughly and comprehensively with the problems of heredity.

The chapters on "Reproduction," "The Germ-Cells," "The Inheritance of Acquired Characters," and "The Inheritance of Disease," show that the author is well acquainted with the best literature on the subjects and deserve very high commendation. One pronouncement which the author makes in his final chapter seems to us to be dangerous doctrine, especially in a book which deals with problems of which few solutions are universally accepted. It is stated that "a science, in order to become a real science, must contain certain leading principles, serving at the same time as a unifying bond of the organised knowledge and *giving us working ideas for our guidance in practical life.*" Surely science is science still, in the full meaning of the word, even when inquiry duly conducted is unable to arrive at the goal indicated in this quotation. Scientific inquiry, as such, has no such goal, however imperative it may be for us to direct all practical action, as far as possible, on principles which are indicated and justified by science.

Practical Physiology. Edited by M. S. PEMBREY, M.A., M.D. Oxon. Third edition. Illustrated by 256 diagrams and tracings. London: Edward Arnold. 1910. Pp. xviii.-480. Price 14*s.* net.

FIVE years have elapsed since the second edition of this work was issued and eight since the first. Instead of five contributing authors there are six, and though the number of pages has been reduced from 503 to 480, the volume is a thicker one than its immediate predecessor. In the former editions the subjects were classed into four parts and were arranged as elementary and advanced. A much better method is adopted by keeping experimental and chemical physiology apart. Wisely, we think, the experiments on muscle and nerve have been reduced, and the observations which can be made upon man have been increased. A short contribution of eight pages on X rays for the investigation of motor functions of the alimentary canal is made by Dr. A. F. Hertz.

The chief changes are those of transposition and rearrangement of the subject matter. The first 50 odd pages are identical with those in the previous editions; 10 pages are transferred from the advanced part, a few pages being omitted, such as those dealing with isometric and paradoxical contraction and Pflüger's law, and the effects of some drugs, and the result is that 92 pages are given to nerve-muscle physiology instead of 106. To the circulation 79 pages are devoted instead of 72. The *a.-v.* bundle is figured, and a few additions are made in the text, while there are some omissions, such as cardio-pneumatic movements and the tortoise heart (Chapters XXV.–XLII.). Under the head of the Pulse we do not find an account of Pachon's sphygmometer, which seems to us a very sensitive instrument. Fig. 140 is named "the kymograph," while in the former edition it is given as "the Hürtle kymograph," perhaps a needful term as there are so many varieties of kymograph. About 25 pages are devoted to respiration, to which a few additions have been made. There is no very material change in the chapters on the central nervous system and the special senses. From the latter there are a few commendable omissions.

About 200 pages are devoted to "Physiological Chemistry," some of the chapters previously assigned to Dr. J. J. R. Macleod being relegated to Dr. Martin Flack. The chapters on carbohydrates and proteins are brought up to date. The photographic spectra of hæmoglobin appear to be omitted, while new chapters are added on inorganic acid radicles of urine, on lactic acid (J. H. Ryffel), and on hæmolysins and precipitins. Milk can hardly be called an "opalescent solution" (p. 326). In the experiment (p. 332) it might be well to state which "salted plasma" is used, and the clotting of blood might be compared with that which occurs in muscle as well as with milk clotting. In the chapter on blood we do not find Katyama's test for HbCO, which, whatever its precise value, gives a very striking reaction; nor is Rubner's test included. The bands of Soret in the ultra-violet spectrum seem to be omitted. It would be useful to add a simple test for the detection of iron in the bile. For the somewhat dubious statement in the second edition "a diet containing it (proteid) alone can serve as an efficient food" (p. 209), we have "a diet containing protein and salts alone can serve as an efficient food." Additions have been made here and there to the chapters on digestion; "Grutzner" on p. 386 should be "Grützner." Autolysis seems to be omitted.

This edition will certainly prove as useful to students as its predecessors, and our little criticisms, which may seem meticulous, are made with the idea that a fourth edition will be called for, when the indications furnished may be serviceable. The price is raised from 12*s.* 6*d.* to 14*s.* net.

Military Hygiene. By ROBERT CALDWELL, F.R.C.S. Edin., D.P.H., Lieutenant-Colonel, R.A.M.C.; Specialist Sanitary Officer, Pretoria, Potchefstroom, and Natal; late Specialist Sanitary Officer, Western Area, Southern Command, &c. Second edition. With 80 Illustrations. London: Baillière, Tindall, and Cox. 1910. Pp. 580. Price 12*s.* 6*d.* net.

THE reception accorded to the first edition of this book has encouraged the author to hope that a second venture on a somewhat more ambitious scale might not be out of place. Lieutenant-Colonel Caldwell, while addressing the present edition primarily to officers of the Royal Army Medical Corps, expresses a hope that it may also prove useful to all branches of the service, and therefore conveys his information in the simplest language consistent with the subject.

The book opens with a chapter on "The Work of the Microbe" in relation to armies in the field, and many interesting references are made to the prevalence of disease from early times down to the South African war. Then follows a dissertation on immunity which acts as an introduction to the discussion of the subject of inoculation against enteric fever by antityphoid vaccine, the method of preparation and dosage of the vaccine, and some statistics are quoted to prove the advantages of inoculation. Enteric fever, the relation of its propagation to camps, personal contact, food, carriers and other sources, form the subject-matter of the following chapter, which closes with a further list of statistics connected with the results of antityphoid inoculation. The next seven chapters are devoted to the discussion of the following diseases—dysentery and diarrhœa, malaria, plague, pneumonia, contagious ophthalmia, dengue, jaundice, cholera, Malta fever, barrack-room sore-throat, and parasitic diseases. The portion dealing with animal parasites will prove useful, notwithstanding that the descriptions of the parasites themselves and their ova have been purposely omitted, the author assuming that his readers have a sufficient knowledge of their characteristics. Sanitary organisation is the subject matter of Chapter XII., and the medical departments of both the United States and our own army come in for a fair amount of comment. Stress is laid on the necessity of including the principal medical officer of a division on the staff of the general officer commanding; at present he is not included, and we have before now pointed out that the omission is regrettable. The physical training of the soldier is dealt with in the succeeding chapter; the methods of carrying equipment are well illustrated by clearly produced photographs of soldiers in the "marching out" kit of different armies, including our own. In the next chapter sanitary matters connected with the maintenance of good health amongst soldiers, such as water, air, food, clothing, &c., are treated in detail. The author in passing (p. 288) very rightly draws attention to the unsound procedure of the authorities in detailing any available medical officer, without any regard to particular qualifications, for boards for the purpose of inspecting and reporting upon the sanitary condition of newly-constructed quarters: an officer skilled in sanitary science should rather be selected.

The sections dealing with meteorology, climate, and geology are all well compiled, and a geological map of the United Kingdom (in colours), which has been very creditably prepared by Messrs. Longmans, Green, and Co., is an attractive feature which may be of service in the selection of camping grounds. Chapters XXV.–XXVII. deal with the methods of sick transport (special prominence being given to the methods of Colonel H. G. Hathaway, A.M.S.), routine duties of medical officers, infectious diseases, alcohol, buildings, and tents, all these subjects being treated in an interesting way and well illustrated by diagrams and photographs. The last chapter, on Physical Degeneration in its Connexion with the Army, containing as it does a contrast between military and civil life, forms a good conclusion to a good book.

Lieutenant-Colonel Caldwell is to be congratulated on his painstaking efforts; he has evidently worked hard to collect facts connected with the hygiene of the soldier, and the references he makes to the published writings of his brother officers indicate a generous loyalty to their work, while greatly adding to the value of his own, which thus affords a ready reference to original sources. From his own experiences the author is able to add to the value of these writings by personal observations and views. The book is well indexed; great care has apparently been exercised in the reproductions of diagrams and photographs, the latter especially being excellently reproduced.

Urgent Surgery. By FÉLIX LEJARS, Professeur Agrégé à la Faculté de Médecine de Paris. Translated from the sixth French edition by WILLIAM S. DICKIE, F.R.C.S. Eng. With 20 full-page plates and 994 illustrations. Vol. II. London: Simpkin, Marshall, Hamilton, Kent, and Co., Limited. Bristol: John Wright and Sons, Limited. New York: William Wood and Co. 1910. Pp. 580. Price 25*s.* net.

THE favourable opinion which we expressed in reviewing the first volume of this excellent translation of Lejars' well-known work on the surgery of emergencies is fully confirmed by the examination of this, the second and concluding volume. It deals first with the genito-urinary organs, and includes such subjects as curetting the uterus, renal decapsulation, rupture of the urethra, and the treatment of distended bladder. The surgery of the rectum and anus and of strangulated hernia follows. Dislocations naturally are described and fractures also, and the volume ends with urgent amputations, wounds of tendons and joints, and acute osteomyelitis.

The prodigality with which the illustrations are provided enhances greatly the value of the work to the reader, for suitable diagrams or illustrations frequently explain much more clearly than many words. We gladly bear witness to the value of the work and wish it in its English dress the success which the original has attained.

JOURNALS.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XLI., Nos. 3 and 4. London: C. F. Clay, Cambridge University Press. Nov. 9th, 1910. Price 8*s.* 6*d.*—The articles contained in these numbers are: 1. The Secretion of Urine, by Joseph Barcroft and Hermann Straub, from the Physiological Laboratory, University of Cambridge. The authors find that the diuretics they have studied fall into two groups—(1) those which produce urine without alteration in the gaseous exchange of the kidney (Ringer's solution and NaCl in hyper- and hypo-tonic solutions); and (2) those which cause increased gaseous exchange (urea, caffeine, sodium sulphate), to which may be added phloridzin. They find also that clamping the kidneys for 15 minutes after washing out the vessels with Ringer's solution does not abolish its power of secretion. 2. On the Governing Influence of Environment on Enzymic Action, by F. W. Pavy, M.D., LL.D., F.R.S., with the collaboration of H. W. Bywaters, D.Sc., Ph.D., F.I.C., from the Physiological Laboratory of the University of London, South Kensington.

The authors show that the inverting power of an aqueous extract of yeast is increased ten to fifteenfold by the addition of a boiled extract of yeast, which is essentially due to the acidity of the boiled extract. After desiccation treatment with alcohol or grinding up with kieselguhr greatly enhanced enzymic action as shown in the aqueous extract. 3. The Mode of Union of Certain Poisons with Cardiac Muscle, by H. M. Vernon, from the Physiological Laboratory, University of Oxford. The effects of perfusing the tortoise heart with oxygenated Ringer's solution, containing alcohol, ether, hydrocyanic acid, sodium chloride, and formaldehyde, are given. 4. The Action of Atropine, Pilocarpine, and Physostigmine, by Arthur R. Cushny, M.D., F.R.S., from the Pharmacological Laboratory, University College, London. 5. The Composition of the Gases of the Blood in Chloroform Anæsthesia, by G. A. Buckmaster and J. A. Gardner, from the Physiological Laboratory, University of London. 6. Visual Phenomena Connected with the Yellow Spot, by F. W. Edridge-Green, M.D., F.R.C.S., Beit Medical Research Fellow. 7. The Influence of Carbohydrate and Fat on Protein Metabolism, by E. P. Cathcart and M. Ross-Taylor, University of Glasgow. This article gives the effect of phloridzin glycosuria. These numbers contain also the proceedings of the Physiological Society for Oct. 15th, 1910.

ST. MARYLEBONE GENERAL DISPENSARY.—A festival dinner to commemorate the 125th anniversary of the foundation of this charity was held at the Langham Hotel on Nov. 24th. The company consisted of nearly 100 friends of the dispensary, with Lord Howard de Walden in the chair. The list of speakers included Sir R. Douglas Powell, Mr. Andrew Clark, ex-members of the medical staff, the Rev. Dr. Morrison, rector of St. Marylebone, Mr. Ernest R. Debenham, the Mayor of St. Marylebone, Mr. James Boynton, M.P., Lieutenant-Colonel Hon. G. H. Windsor Clive, Dr. A. G. Auld, and Dr. Eric Pritchard. The long and useful history of the dispensary was strongly emphasised by Lord Howard de Walden, who remarked that in many ways dispensaries, such as the St. Marylebone General Dispensary, had claims on the public equal to those of the larger general hospitals, for they dealt with the prevention of disease or its treatment while it was still capable of cure, and in this connexion he referred to the invaluable work done by the dispensary in the treatment of tuberculous patients and in the prevention of infant mortality by the operations of the infant consultations carried on at the institution. The funds collected as the result of this special appeal amounted to over £1200.

GLASGOW UNIVERSITY CLUB OF LONDON.—Lord Curzon of Kedleston, Lord Rector of the University of Glasgow, presided at a dinner of this club at the Gaiety Restaurant, Strand, on Nov. 25th and proposed the toast, "The University and the Club." He said that the main source of pride to a Lord Rector was that during his term of office he felt he was brought into contact with an important section of the youth of the country and was able to learn something of the ideals and aspirations by which they were moved. They heard a good deal nowadays of the distinction between the old and new universities. There was no rivalry between them; they each gave a system of education which was necessarily different. The older universities of England could not cover the whole field, and those who spoke for them regarded with pleasure the creation of new universities. There was no such contrast and diversity of function in Scotland, however, where the four ancient universities held the field in an unassailed and impregnable position. The toast of "The Guests" was proposed by Sir Donald MacAlister and responded to by Lord Lamington and Mr. Harold Cox. Among those present were Canon Hensley Henson, Sir Thomas Barlow, Sir Henry Craik, Mr. G. L. Craix, Sir John Batty Tuke, Dr. D. N. Knox, Sir Charles Ball, Dr. George Heron, the Hon. N. C. Rothschild, Sir David McVail, Sir John Moore, and Sir Christopher Nixon.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

WEDNESDAY, NOV. 23RD.

THE Council resumed its sittings at its offices, 299, Oxford-street, W., Sir DONALD MACALISTER, the President, being in the chair.

Penal Cases.

The whole of the sitting was occupied with the hearing of penal cases.

The first charge against a practitioner was dismissed.

The second case to be considered was that of James Dalziel, registered as of Auckland, New Zealand, Lic. R. Coll. Phys. Edin. 1867, Lic. R. Fac. Phys. Surg. Glasg. 1867, who had been summoned to appear before the Council on the following charge, as formulated by the Council's solicitor:—

That you unlawfully used an instrument or other means with intent thereby to procure the miscarriage of one Jennie Barraclough, of which offence you were on August 14th, 1907, convicted at Auckland, New Zealand, and sentenced to four years' imprisonment. And that in relation thereto you have been guilty of infamous conduct in a professional respect.

Mr. DALZIEL did not appear, nor was he represented.

Mr. WINTERBOTHAM (the solicitor to the Council) said that this was not a case of conviction within the British Islands. The result was that the case had to be dealt with as one of infamous conduct in a professional respect. He handed in a certificate of conviction.

The PRESIDENT announced the decision of the Council as follows: The Council have judged James Dalziel to have been guilty of infamous conduct in a professional respect, and have directed the Registrar to erase from the Medical Register the name of James Dalziel.

The Council then considered the case of George Gray Wilson, registered as of 23, Duncan-terrace, Islington, N., Lic. R. Coll. Phys. Edin. 1898, Lic. R. Coll. Surg. Edin. 1898, Lic. Fac. Phys. Surg. Glasg. 1898, who had been summoned to appear before the Council on the followihg charge, as formulated by the Council's solicitor:—

That you abused your position as a medical man by committing adultery with a Mrs. Moore, with whom you stood in professional relationship, of which adultery you were found guilty by the decree of the Probate, Divorce, and Admiralty Division (Divorce) of the High Court of Justice, dated March 15th, 1910, in the case of Moore *v.* Moore and Wilson, in which you were the co-respondent. And that in relation thereto you have been guilty of infamous conduct in a professional respect.

Mr. Wilson appeared in person and was accompanied by Mr. E. W. Fordham, his counsel.

Mr. WINTERBOTHAM (the solicitor to the Council) briefly indicated the circumstances in which the charge came to be brought against Mr. Wilson. The case was brought to the notice of the Council through the proceedings in the Divorce Court, and the fact of the adultery after its decree could not be denied. The question with which the Council had to deal turned on whether there was the professional relationship of doctor and patient existing between the parties. Mr. Wilson had been employed as surgeon on board vessels of the P. and O. Company. He first met the lady and her husband on a voyage from Aden to Bombay, and he had been medical man on the vessel in which she had returned to England. He (Mr. Winterbotham) would contend—although this was disputed by Mr. Wilson—that he in his ordinary course of duty attended the lady, advised treatment, and supplied medicines. It was admitted that he had had her removed for a time to the hospital cabin which was under his control.

Dr. T. H. A. CHAPLIN, medical inspector of the P. and O. Company, who gave evidence, stated that the lady's name did not appear in the book of the medical man as having been ill. A surgeon in the service of the company was paid by it. He was not allowed to ask for a fee from passengers whom he attended. If anyone out of gratitude offered a surgeon a fee he was not prohibited from taking it.

The PRESIDENT asked whether there was anything in the regulations of the company to the effect that the medical man was to be regarded in a professional relation to all on board.

Dr. CHAPLIN: No. That is a point on which I would like to have a ruling.

Two other witnesses were heard in relation to the allegations on which the charge was based.

Mr. GEORGE GRAY WILSON gave evidence on his own behalf. He stated that he did not make arrangements that the lady would return in the same vessel as he. He never attended her or her husband in a professional way. There never had been any professional relationship between him and the lady at any time. She had been accommodated in the hospital cabin on account of the heat in her own cabin. He had not visited her there, and he emphatically denied that there had been improper relations whilst he was the ship's doctor.

Mrs. MOORE also gave evidence and denied that there had been the professional relationship of medical man and patient between her and Mr. Wilson.

Mr. FORDHAM then addressed the Council on behalf of Mr. Wilson and argued that the professional relationship did not exist. If the Council were to hold that every passenger and every member of the crew was a patient of the ship's medical man it would be a most dangerous precedent. The law regarded with great jealousy the relation between medical man and patient, particularly as regarded gifts. The rule was particularly stringent, because of the fear or presumption that there might be undue influence as between medical man and patient. If it was to be held that every member of a ship's company and every passenger was a patient of the ship's surgeon the presumption would have a very far-reaching effect. He would venture to submit that the rule could only be intended to apply to the actual cases where the ship's surgeon was in actual attendance on persons who were suffering from illness. A Christian Scientist, for example, might be on board ship and would object to call in the assistance of a ship's surgeon as against his belief. Could it be said that in such a case the relationship of medical man and patient would exist? He (Mr. Fordham) would submit that the relationship did not exist in this case. As a matter of fact, there was nothing to show that the lady was a patient of Mr. Wilson. Indeed, both of them denied it. In these circumstances he asked the Council to dismiss the charge against the accused practitioner.

The Council then adjourned.

THURSDAY, NOV. 24TH.

The Council resumed its sittings at its offices, 299, Oxford-street, W., Sir DONALD MACALISTER, the President, in the chair.

Penal Cases.

The Council considered in private the case of George Gray Wilson, which had been heard on the previous day.

The PRESIDENT, after the public had been readmitted, said: Mr. Wilson, the charge against you was:—

That you abused your position as a medical man by committing adultery with a Mrs. Moore, with whom you stood in professional relationship, of which adultery you were found guilty by the decree of the High Court of Justice in the case in which you were the co-respondent. I have to inform you that the Council have judged you to have been guilty of infamous conduct in a professional respect, and have directed the Registrar to erase from the Medical Register the name of George Gray Wilson.

The Council then took up the consideration (adjourned from May 27th, 1910) of the case of James Forrest, registered as of 60, Gordon Mansions, Gower-street, London, W.C., M.B., Bac. Surg. 1897, Univ. Edin., who had been summoned to appear before the Council on the following charge, as formulated by the Council's solicitor:—

That you have associated yourself as a member of its committee and also as one of its surgeons with an institution called the "Eye and Ear Clinique," and also the "National Eye Hospital," and the "National Eye, Ear, Nose, and Throat Hospital" of 123, Oxford-street, London, W., which advertises by pamphlets and in the public press for paying patients. And that in relation thereto you have been guilty of infamous conduct in a professional respect.

Dr. FORREST did not appear nor was he represented by solicitor or council.

The British Medical Association, who were the complainants, were represented by Mr. Cox, assistant secretary to the ethical committee, who was accompanied by Mr. Hempson, solicitor.

The PRESIDENT asked those members of the Council who were not present when the case was previously before the Council, and also those members who were also members of the British Medical Association, to retire from the hearing of the case.

This request was complied with by the members concerned.

Mr. BODKIN (the legal assessor) said that this case was before the Council on May 26th last. In May Dr. Forrest gave a considerable amount of evidence and answered questions put by the Council. In the course of these questions it was thought desirable that the books and the minute books of the "Eye and Ear Clinique" should be produced before the Council. Mr. Washington, the solictor of Dr. Forrest, agreed to have an adjournment until the next day in order that he might bring forward some of the members of the committee of the institution in question and produce the books for the inspection of the Council. Accordingly, there was an adjournment until the afternoon of the following day. Mr. Washington said that he was not sure that he would be able to get his witnesses to the Council at that time. Before that time came Mr. Washington had ceased to act on behalf of Dr. Forrest. When the case came again before the Council Dr. Forrest did not attend, nor did anyone on his behalf. Then came the discussion as to what steps should be taken, and it was decided that the matter should stand over until the next session.

The SOLICITOR to the Council intimated that a letter, addressed to the General Medical Council, and dated Nov. 15th, had been received from Dr. Forrest as his defence to the charge. It was in the following terms:—

I enclose documentary testimony in proof of my statements made before you, at your last meeting, with regard to the administration of the Eye and Ear Clinique. As the case was concluded at the last meeting and judgment was postponed solely for the production of the above documents, I do not propose attending personally, but I beg leave to controvert certain statements made by the prosecution.

Their solicitor stated that no inquiries were made with regard to the financial position of the patients attending the Clinique. This is true; but we contend that such inquiries do not prevent abuse, and so offer no protection, for a patient who has determined to prostitute his sense of truthfulness to gain some slight monetary advantages will not be deterred by the inquisitorial methods adopted by many hospital authorities.

The plan in vogue at the Clinique was only resorted to after much deliberation, and consists in an exposition—by the nurse—to each patient of the objects of the institution, and particularly of the class to which it appeals.

With reference to T. W. Tyrell's account of his visit to the Clinique, I wish you to note that his description of the conversation he had with the nurse is both contradictory and incongruous. His statement that a copy of THE LANCET was lying on the table is a lie. It is unnecessary to refute in detail his narration of my conversation with him, as most of it is irrelevant to the case; but his departure from the truth is perhaps largely attributable to a desire to present a good case for his employer, who, I note, is the solicitor for the prosecution.

With regard to our advertisementss to which exception has been taken, we only followed the precedents set by other institutions. I enclose an incomplete list of those which advertise either overtly or covertly for paying patients, and a perusal of their reports (which I also submit) shows that the money derived from the payments of patients is from 60 to 100 per cent. of the total income of the institution. As such notices have appeared regularly for years, the inference that the underlying principles were approved by the medical authorities appeared to us the only logical one, especially as the advertisements appear in those papers which appeal chiefly to the working classes. We inserted a public notice in the press once only, and then I am charged with infamous conduct in a professional sense; yet these other institutions are advertising regularly every week with impunity. These gross anomalies which are allowed to prevail with regard to public notices in the press have been largely created by the inactivity or tacit approval of the prosecuting body, who affect to protect the interests of the medical practitioner; and so strongly do I feel in relation to these irregularities that their continuance will compel me, from conscientious motives, to have my name voluntarily erased from the Register.

In conclusion I reiterate that if my conduct be infamous, then many other men on the staff of various London institutions ought to be arraigned before you on the same charge. JAS. FORREST.

The following statutory declaration was also read by the Solicitor:—

IN THE MATTER OF THE COMPLAINT AGAINST JAMES FORREST, M.B., F.R.C.S.E., OF THE EYE AND EAR CLINIQUE, LONDON.

Statutory Declaration by Alfred Ernest Yates, dated Nov. 15th, 1910

I, ALFRED ERNEST YATES of 30, Brown-street, Manchester, do solemnly and sincerely declare as follows: I provided funds (without interest) for the foundation of the above institution, and furthermore guaranteed it against loss for a period of five years. The administration of the Clinique and the management of finances are under the control of an honorary committee, whose addresses are as follows:—

A. E. YATES (Engineer), 30, Brown-street, Manchester.
ELLEN MITCHELL (Independent), South Shore, Blackpool.
F. WESTCOTT (Shipper), Thorners Chambers, London.
P. PHILLIPS (Tobacco Manufacturer), Metherall-gardens, W.
JAMES FORREST (Surgeon), 1, Duke-street, Manchester-square, London.
W. HARRISON (Stockbroker), Gresham House, E.C.

The late Dr. RAMMAGE was also a member.

Amongst the many resolutions passed by the committee the following two are germane to this case:—

1. That any excess of income over expenditure shall be devoted in the first place to the provision and full equipment of an in-patient department, and afterwards to the repayment of the donor.

2. That no salary be given to the surgeons for their services until the donor be reimbursed, and that such salary shall not exceed £100 per annum.

This small honorarium was not intended to represent an adequate remuneration for the surgeons' services, but given with the view of excluding purely honorary service.

This closed the case for Dr. Forrest.

The PRESIDENT announced the decision of the Council as follows: I have to announce that the Council have judged James Forrest to have been guilty of infamous conduct in a professional respect, and have directed the Registrar to erase from the Medical Register the name of James Forrest.

The Council took up consideration of the case of Herbert Llewellyn Porteous, registered as of Wickham Grange, Chalford, Gloucestershire, Mem. R. Coll. Surg., Eng. 1898, Lic. R. Coll. Phys., Lond. 1898, who had been summoned to appear before the Council on the following charge, as formulated by the Council's solicitor:—

That you were on your plea of guilty convicted on June 21st, 1910, at the Gloucestershire Assizes before the Honourable Mr. Justice Lawrence, of certain misdemeanours, and were ordered to enter into your own recognisances in the sum of £10 to appear to receive judgment upon your said conviction if and when called upon so to do, such misdemeanours being contraventions of the provisions of the Lunacy Act, 1890: (*a*) in that you in December, 1909, and in January, 1910, whilst you were the medical attendant of two lunatic single patients named Evelyn Mary Whish and Irene Henrietta Anne Linthwaite, residing in the house of one Sarah Fisher, did contrary to Orders dated April 10th, 1907, made by the Lunacy Commissioners in respect to such patients under the Lunacy Act, 1890, and the rules made thereunder to the effect that such patients should be visited by you as such medical attendant once in every six weeks, and that you should make in the medical journals respectively relating to such patients entries relative to their condition at such visits, did make default in complying with such Orders; and (*b*) further in that you being the medical attendant of the said Evelyn Mary Whish and subject to the requirements of the said Order did unlawfully and knowingly on Dec. 24th, 1909, make in the medical journal relating to her a false entry implying that you had then visited her and had made the said entry as the result of your personal examination of her, contrary to Section 318 of the Lunacy Act, 1890; and (*c*) further in that you being the medical attendant of the said Evelyn Mary Whish and Irene Henrietta Anne Linthwaite, and subject to the requirements of the said Orders, did unlawfully and knowingly on Feb. 3rd, 1910, make certain false entries and certain wilful mis-statements of material facts in the medical statements relating respectively to the said patients, such false entries and mis-statements implying that you had on the said Feb. 3rd, 1910, seen and examined the said patients, whereas you had not then seen and examined the said patients, contrary to Sections 317 and 318 of the Lunacy Act, 1890; and (*d*) further in that you failed on Jan. 10th, 1910, to make a report as to the state of bodily and mental health of each of such patients to the said Commissioners. And that in relation thereto you have been guilty of infamous conduct in a professional respect.

Mr. Porteous appeared in person, and was accompanied by Mr. Hempson, solicitor.

Mr. WINTERBOTHAM made a statement to the Council concerning the particulars of the charge.

Dr. COUPLAND, a Commissioner in Lunacy, was called as a witness. He said that the reason why the Commissioners in Lunacy did not think it incumbent on them to bring the case under the notice of the Council was because although the breach of the law was grave and might have had serious consequences, Mr. Porteous had pleaded guilty and the circumstances under which the offence was committed showed that it was not done wilfully, but at the instigation of another. The conduct of Mr. Porteous showed that he did not realise his personal responsibility to the patients. However, the Commissioners thought that taking the circumstances into consideration it would be vindictive on their part to take the further step of reporting the case to the General Medical Council. At the same time the Commissioners hoped that the prosecution would have the effect of making all members of the medical profession recognise that their duties were of a most responsible nature.

Answering the President, Dr. COUPLAND said that there might be cases where the Commissioners themselves would think it incumbent to take a case before the Council.

Mr. PORTEOUS gave an assurance to the Council that in future he would do everything in his power to give no cause for complaint on professional grounds.

Mr. HEMPSON submitted to the Council testimonials from local members of the medical profession, and gentlemen of standing in the neighbourhood in which Mr. Porteous practises, testifying to the high regard and esteem in which he was held. Mr. Hempson went on to say that the facts in this case were beyond dispute. Mr. Porteous had not sought in any way to withhold from the Council the full facts of the case as known to him. Dr. Coupland had given unexpected testimony towards the defence in this case. He said that he would have considered it hard and harsh to have reported the matter in order that proceedings might have been put on foot. He (Mr. Hempson) would submit that it was a hard case. Mr. Porteous had not made a single penny out of what he did, and fortunately no harm was done by his errors. Mr. Justice Lawrance considered that the case showed errors of judgment rather than acts of design. He therefore permitted Mr. Porteous to be discharged with kindly words of admonition, and assuring him that if there was nothing against his conduct in the future he would hear nothing more in the future.

The PRESIDENT announced the decision of the Council as follows: Mr. Porteous: The Council has found the conviction alleged against you in the notice proved, but it has not decided to pronounce judgment on the conviction at this meeting, but you will be called upon to appear before it at the May session on a day of which notice will be given you, when you will be required to produce evidence as to your conduct in the interval.

The Council proceeded to the consideration (adjourned from May 27th, 1910), of the facts proved against Edward Joseph Regan in regard to whom the Dental Committee, at its meeting on Monday, Nov. 21st, 1910, drew up a supplementary report. In the course of the report it was stated that Mr. Regan had attended personally and presented as evidence his own oral statement, but produced nothing in support of it.

At the close of the proceedings on May 27th, 1910, the PRESIDENT, addressing Mr. Regan, said: "Mr. Regan: The Council have considered the facts proved in the report of the Dental Committee but have not proceeded to pronounce judgment in your case, and have postponed the further hearing of your case till the November session, when you will be required to produce evidence as to your conduct in the interval, with special reference to your having ceased all relations with unqualified practitioners and advertising."

The complainants were the British Dental Association, represented by Mr. R. W. Turner.

Mr. REGAN attended and addressed the Council on his own behalf. He said that he had done his best to remove the cause of complaint against him, and he wished, if his name was permitted to remain on the Register, to continue to obey the rulings of the Council.

The PRESIDENT announced the decision of the Council as follows: "Edward Joseph Regan: I have to announce that on the facts found in the report of the dental committee you have been judged to have been guilty of infamous or disgraceful conduct in a professional respect, and that the Registrar has been directed to erase from the Dentists Register the name of Edward Joseph Regan.

The Council then directed its attention to the case of Alexander Peel Patterson, in regard to which the Dental Committee had made a report. In that report it was stated that the committee found that the following facts were established by the evidence:—

The said Alexander Peel Paterson was registered in the Dentists Register on Oct. 14th, 1878, as "In practice before July 22nd, 1878." His address in the Register for the current year is 63, Bradshawgate, Bolton. The said A. P. Patterson admitted that the four persons mentioned in the notice of inquiry are in his employ and are all unqualified, but stated that he has given all of them notice and in future intends to employ no unqualified persons. He further stated that the circular complained of was issued by him and had been in use for about 14 years, that with this exception he has never advertised, that he had discontinued the circular, and he undertook not to advertise again. The said A. P. Patterson has employed collectors who have distributed the said circular at their discretion, and if any practice resulted it would be of advantage to the collectors. The said A. P. Patterson stated the particulars in which he considered his system of dentistry to be superior to others. The said A. P. Patterson never saw Mrs. Clarke. None of his unqualified assistants know the constituents of the eucaine used in the practice. Their instructions are to use it carefully, not to waste it, and not to exceed two syringefuls. They have no instructions as to examining the heart, and they are not capable of doing it.

Amongst the evidence before the committee were depositions of witnesses taken touching the death of one, Mary Ann Clarke.

Mr. Patterson attended and was accompanied by his counsel, Mr. Barrington Ward.

The British Dental Association were the complainants and were represented by Mr. W. R. Turner.

Mr. BARRINGTON WARD addressed the Council on behalf of Mr. Patterson and said that his client did not know what he was doing was wrong. Clarke's case was that of a woman who died after dental treatment. There was no undue injury present and the cause of death was apoplexy. His client gave a most solemn undertaking that he would not employ

any unqualified man so as to allow that unqualified person to take part in any dental operation.

The PRESIDENT in addressing Mr. Patterson said: I have to announce that on the facts found in the report of the Dental Committee it has been proved that Alexander Peel Patterson has been guilty of infamous or disgraceful conduct in a professional respect, and that the Registrar has been directed to erase from the Dentists Register the name of Alexander Peel Patterson.

Examinations for the Services.

The report by the Examination Committee on the returns as to examinations for the services received since the last session of the Council was received.

The Apothecaries' Hall, Dublin.

The reports by the Examination Committee on the Final Examinations of the Apothecaries' Hall, Dublin, held in July and October, 1910, were also received.

The Assistant Examiner to the Society of Apothecaries.

On the motion of Mr. NORTON it was agreed that the temporary appointment of Mr. V. Warren Low, F.R.C.S. Eng., as Assistant Examiner to the Society of Apothecaries of London during the illness of Mr. Collier, which was sanctioned by the Executive Committee, be extended till such time as Mr. Collier might be able to resume his duties.

An Admission to the Medical Register.

The Council agreed to adopt the recommendation of the English Branch Council that Mr. Lewis Fabien should be registered. Mr. Lewis Fabien, Mem. R. Coll. Surg. Eng. 1876, is a medical practitioner entitled to be registered under the Medical Act (1858), but who neglected to effect such registration until after the "appointed day" (June 30th, 1887) under the Medical Act (1886).

Mr. FABIEN in making his application for registration supplied a statutory declaration giving the reason why he omitted to register before the Medical Act (1886) came into force—viz., that immediately after qualifying he proceeded to the colony of Trinidad, where he joined the Government Medical Service, and where he had been in regular practice ever since.

The Anæsthetics Committee.

The report of the Anæsthetics Committee was received and entered on the minutes, but discussion of the recommendations of the committee was deferred until a convenient opportunity later in the session.

The Council adjourned.

FRIDAY, NOV. 25TH.

The Council resumed its sittings at its offices, 299, Oxford-street, W. Sir DONALD MACALISTER, the President, was again in the chair.

Charge against Medical Man Dismissed.

The Council took up consideration of the case of William Peart-Thomas, registered as of 21, Portman-street, London, W., M.B., Mast. Surg. 1891, M.D. 1898, Univ. Edin., who had been summoned to appear before the Council on the following charge, as formulated by the Council's solicitor:—

That you have by your presence, countenance, advice, assistance, or coöperation, knowingly enabled an unqualified and unregistered person—namely, one Andrew Miller—to attend and treat patients as if he were duly qualified and registered. And that you have by your presence and coöperation with the said Andrew Miller, whom you knew to be an unqualified and unregistered person, during the course of his treatment of certain patients, enabled the said Andrew Miller to attend and treat such patients under such circumstances, and with the intention that in the event of the death of any of such patients, you should be in a position to give certificates of death in respect of them as if you were the medical practitioner who had been really in responsible attendance upon them. And that in relation thereto you have been guilty of infamous conduct in a professional respect.

The complainant was Dr. Hugh Woods, acting on behalf of the London and Counties Medical Protection Society.

Dr. Peart-Thomas appeared, and was accompanied by his counsel, Mr. R. W. Turner.

Dr. WOODS explained to the Council the grounds on which the complaint was made. He said that in August, 1909, the Duke of Manchester became interested in the mode of treatment by one Andrew Miller, a man without medical qualification and registration, who professed to cure the disease of phthisis. In September, 1909, Mr. Miller came to this country to demonstrate his treatment under the auspices of the duke. To this end Miss Dempster, a hospital nurse with a nursing home in Upper Montagu-street, was approached with a view to her allowing some patients to undergo treatment by Mr. Miller there. This lady refused to allow this unless a properly qualified medical man was in charge. Dr. Peart-Thomas ultimately agreed to take charge. His duty, it was alleged, was to stop the treatment if dangerous symptoms supervened, and it was further alleged that in the event of the death of any of the patients he would be in a position to give a death certificate. It was contended that the action of Dr. Peart-Thomas in regard to this matter laid him open to the charge now made against him. Dr. Woods proceeded to read extracts from notes of evidence given in the county court with regard to the claim of Dr. Peart-Thomas for professional fees.

Mr. TURNER objected to the reading of these notes on the ground that they were neither official nor were they full and accurate.

The PRESIDENT said that the Council would keep in mind the character of the notes, and would only accept them subject to correction.

The Duke of Manchester was called as a witness.

Sir CHARLES BOXALL, his solicitor, stated that the duke did not wish to take any part in advancing the charge. He was quite prepared to assist the inquiry, but he was not a party to any attack on Dr. Peart-Thomas.

The Duke of MANCHESTER, in the course of his evidence, stated that so far as he was concerned in this matter he considered that everything was being done under medical supervision from the fact that a very highly respected committee of medical men had been taking a scientific interest in the matter. All that he had got Mr. Miller to come to this country for was to get his treatment tested by thoroughly scientific methods. When Dr. Peart-Thomas was brought in the contingency of his having to give a death certificate was far from his (the duke's) mind. He could not say if the matter was even mentioned. He understood that Dr. Peart-Thomas was to see that nothing dangerous took place, and to stop the experiments if anything like death was likely.

Dr. WOODS: Did he interfere with Mr. Miller's treatment.

The Duke of MANCHESTER: I am not quite sure.

Cross-examined by Mr. TURNER, witness said that he got a committee of English medical men to interest themselves in the treatment. They knew the nature of the drug. His idea was that Dr. Peart-Thomas should be a check, if necessary, against any dangerous treatment.

This closed the case for the complainants.

Dr. A. C. LATHAM was then called as a witness by Mr. Turner. He said that the duke came to him in September, 1909, and told him that Mr. Miller's treatment had been successful in cases of consumption. He also mentioned his desire to have it tested. Mr. Miller was prepared to tell what the treatment was, and if he was successful he would take care that every medical man should have the use of it. He told the duke that the best way to test the treatment was to go to the Brompton Hospital and ask those in authority there to do it. Mr. Miller objected because his nurse would not be admitted to the hospital. Dr. Latham told the duke that he and other medical men were prepared to investigate any cases brought to them. They would see their condition before and after treatment and would report to the duke. He (Dr. Latham) said that it was necessary that there should be a medical man in attendance, and he told Miss Dempster not to take the cases in until she had an assurance that there would be a medical man in attendance.

Mr. TURNER: So far as you know, was Dr. Peart-Thomas taking charge of these cases?

Dr. LATHAM: I was under the impression that Dr. Peart-Thomas was in charge of the cases as if he were a house surgeon in charge of them in a hospital.

In answer to the PRESIDENT, witness said that at the end of the treatment a report was presented to the Duke of Manchester. In the opinion of those medical men who made the report there was no evidence to encourage a more extended trial of the treatment.

Mr. F. F. BURGHARD spoke as a witness to Dr. Peart-Thomas's professional and private character.

Dr. PEART-THOMAS gave evidence on his own behalf. When he came to an arrangement with the Duke there was nothing said about death certificates. He knew the drug and the amount of the injection employed in the treatment. A nurse gave the injection. He had control of the patients. He was sent for on the temperature of one of them rising.

He approved of the regulation of their diet. So far as he could remember, the injections were used for four or five days, and in the case of one patient there was a second treatment. It would not harm the patient.

Mr. TURNER: Exercising your skill and judgment as a professional medical man, you permitted that to be done?

Dr. PEART-THOMAS: I did.

Did you exercise your judgment as a professional man before the injection was given?—I did.

Did you in any way submit to the directions of Mr. Miller in regard to this treatment?—No. Mr. Miller told me the drug and the former doses in America or somewhere. These patients were in a fit state to receive it. The drug was given by my orders by the nurse.

Is the suggestion true that you were "covering" Miller and enabling him to carry on a course of treatment?—There is no truth at all in that suggestion.

Dr. WOODS: Did you think the treatment detrimental to the patient?

Dr. PEART-THOMAS: No.

Do you now think it did good?—No; I do not think it did good.

Do you think it ineffective?—I think it was, after five or six weeks' watching.

What position did Mr. Miller occupy?—He was in the position of a nurse. He never examined the patients.

Were you in a position to prohibit the use of the drug?—I was in such a position. I was in charge of the cases in exactly the same way as a house surgeon.

Was Miller competent to prescribe?—I know nothing about Miller except I believe he is a doctor of dentistry. I know nothing of his capabilities.

Re-examined, witness regarded himself as medical practitioner in charge of cases.

Miss M. C. DEMPSTER, the head of the nursing home, gave evidence to the effect that Dr. Peart-Thomas was in full and complete charge of the patients.

Mr. TURNER addressed the Council on behalf of Dr. Peart-Thomas. He contended that there was not a shred of evidence of "covering" in any shape or form. Not a word could be said against the professional conduct of his client.

The PRESIDENT announced the decision of the Council as follows: Dr. William Peart-Thomas: I have to inform you that the decision of the Council is as follows: "That the facts alleged against William Peart-Thomas have not been proved to the satisfaction of the Council."

The Council adjourned.

SATURDAY, NOV. 26TH.

The Council resumed its sittings at its offices, 299, Oxford-street, W. Sir DONALD MACALISTER, the President, was again in the chair.

Report of the Pharmacopœia Committee.

On the motion of Dr. NORMAN MOORE, seconded by Sir JOHN MOORE, the report of the Pharmacopœia Committee was adopted.

The report was in the following terms:—

From May 23rd, 1910, to Nov. 19th, 1910, the number of copies of the British Pharmacopœia (1898) sold by the publishers was 545. The total number of copies sold in the year beginning Nov. 22nd, 1909, was 1094. The annual sale thus continues to be steady. Up to the present time 42 460 copies of the Pharmacopœia, and 4491 copies of the Indian and Colonial Addendum have been sold. The stock now in hand consists of 570 copies of the Pharmacopœia, together with 1843 copies of the Addendum. It will be necessary to print a fresh impression of the Pharmacopœia to meet the demands of the year now beginning, and the Committee recommend that the President be authorised to give orders for the work so soon as the publishers report that the present stock is approaching exhaustion.

The Committee appointed its secretary, Dr. Tirard, to take part, along with delegates sent by the British Government, in an International Conference held in Paris in June last. The purpose of the Conference was to discuss proposals for an international understanding on the subject of methods and standards of analysis in relation to food and drugs. Certain resolutions were arrived at, which are given in the report of Dr. Tirard hereto appended. These may have an important bearing on the analytical portions of the Pharmacopœia, and the Committee propose to give them due consideration in relation to the revision of the 1898 issue on which they are now engaged.

Meanwhile the thanks of the Council are due to Dr. Tirard for the valuable service he has thus rendered.

The PRESIDENT remarked that the approval of the report meant that the Council thanked Dr. Tirard for his services at the International Conference. It also meant that he (the President) was empowered to order more copies of the Pharmacopœia.

Students' Registration Committee.

A report was received from the Students' Registration Committee.

Public Health Committee.

Sir JOHN MOORE, in presenting the report of the Public Health Committee, said that the committee recommended that the applications of the University of Bristol, the National University of Ireland, and Queen's University of Belfast that their Diplomas in Public Health should be recognised for registration, should be acceded to. He mentioned that the application from the University of Wales, seeking recognition of the Diploma in Public Health issued by the University under its chartered powers, was considered by the committee. The consideration of this application was postponed, as the University had not yet obtained registrable powers for its degrees and diplomas under Act of Parliament. Sir John Moore moved:—

That the Diplomas in Public Health of the University of Bristol, the National University of Ireland, and the Queen's University, Belfast, be recognised for registration as additional diplomas.

Dr. NORMAN MOORE seconded.

The motion was agreed to.

On the motion of Sir JOHN MOORE it was also agreed—

That the legal bearings of a proposed amendment of the rules for the Diplomas in Public Health requiring registration, as well as the possession of a registrable qualification as a condition of admission to the examinations for these diplomas, be referred to the legal advisers of the Council for consideration and report.

The Anæsthetics Committee.

The report of the Anæsthetics Committee was considered. The committee had had before it a communication from the Privy Council addressed to the Registrar by Sir Almeric Fitzroy. Sir Almeric Fitzroy wrote:—

With reference to previous correspondence as to proposed legislation on the subject of anæsthetics I am directed by the Lord President of the Council to transmit to you a Memorandum and Draft Bill which have been submitted to the Home Secretary by Dr. Frederic Hewitt, M.V.O., and to ask you to be good enough to move the General Medical Council to favour his lordship with their observations thereon. I am to point out that the Draft Bill does not indicate the drugs or substances producing a state of unconsciousness which a dentist may be permitted to use.

The memorandum discussed at length various points which had arisen on the question of the administration of anæsthetics. The following was suggested as "a rough draft" of an anæsthetics Bill:—

1. Any person other than a legally qualified medical practitioner registered under the Medical Acts who shall administer or cause to be administered to any other person by inhalation or otherwise any drug or substance, whether solid, liquid, vaporous, or gaseous, and whether pure or mixed with any other drug or substance, with the object of producing a state of unconsciousness during any surgical, medical, obstetrical or dental operation, examination, act or procedure, or during childbirth, shall be liable on conviction before a court of summary jurisdiction for such offence to a penalty not exceeding £10, and in the case of a second or subsequent conviction to a penalty not exceeding £20; provided always that a person shall not be liable to a penalty under this section if in conducting such administration he was acting under the immediate direction and supervision of a legally qualified medical practitioner, or if, having been registered under the Dentists Act, 1878, he conducted such administration for a dental operation, act, or procedure, with one or more of the drugs or substances specified in the schedule hereto affixed, or if the circumstances attending the administration were such that he had reasonable grounds for believing and did believe that the delay which would have arisen in obtaining the services of a legally qualified medical practitioner would have endangered life.

2. Any person other than a legally qualified medical practitioner registered under the Medical Acts who shall inject, insert, or otherwise introduce, or shall cause to be injected, inserted, or otherwise introduced into any part, cavity, organ, or tissue of any other person through any puncture, incision, or other breach of cutaneous, mucous, or other surface for that purpose made or produced, any drug, medicament, or substance, whether solid, liquid, vaporous, or gaseous, and whether pure or mixed with any other drug, medicament, or substance, with the object of producing a state of insensibility to pain without unconsciousness, during any surgical, medical, obstetrical, or dental operation, examination, act, or procedure, or during childbirth, shall be liable on conviction before a court of summary jurisdiction for such offence to a penalty not exceeding £10, and in the case of a second or subsequent conviction to a penalty not exceeding £20, provided always that a person shall not be liable to a penalty under this section if in attempting to produce or in producing such insensibility to pain without unconsciousness he was acting under the immediate direction and supervision of a legally qualified medical practitioner, or if, having been registered under the Dentists Act, 1878, he attempted to produce or did produce such insensibility to pain without unconsciousness for the performance of a dental operation, examination, act, or procedure, or if, acting under the immediate direction and supervision of a person registered under the Dentists Act, 1878, he attempted to produce, or did produce, such insensibility to pain without unconsciousness for the performance of a dental operation, examination, act, or procedure.

3. The expression "court of summary jurisdiction" in this Act shall have the same meaning as in Subsection 11 of Section 13 of the Interpretation Act, 1889. In Scotland it shall mean any justice of the

peace and also the sheriff. The expression "the Medical Acts" shall mean the Medical Act, 1858, and any Acts amending the same passed before the passing of this Act.

4. This Act may be cited as the "Anæsthetics Act."

No filled-up schedule was attached to the draft.

The Anæsthetics Committee recommended that the Council should communicate to the Lord President the following observations on the draft Bill:—

1. That, without committing itself to an opinion on mere points of drafting, the Council recognises that the Bill as submitted gives practical effect to the Council's conclusions on the subject, which have already been communicated to the Lord President.

2. That in Clause 1 it is desirable that a provision should be introduced making it clear that a person registered under the Dentists Act, 1878, is not prohibited from administering for a legally qualified medical practitioner one or more of the scheduled anæsthetics in connexion with an operation, act, or procedure other than dental conducted by such medical practitioner.

3. That in Clause 2 it is desirable that provision should be made for prohibiting the application or administration by unqualified persons of dangerous anæsthetic drugs to unbroken surfaces in connexion with dental or other operations, acts, or procedures; and that with this object the limiting words, "through any puncture, incision, or other breach of cutaneous, mucous, or other surface for that purpose made or produced," might with advantage be omitted.

4. That in Clauses 1 and 3 it may be desirable to provide explicitly for an appeal to a court of quarter sessions or other corresponding court against a conviction made under the Act by a court of summary jurisdiction.

5. That, in the opinion of the Council, it is of importance that, for the protection of the public against the dangers disclosed in the Report of the Departmental Committee appointed by the Secretary of State, legislation on the lines of the Bill submitted should speedily receive the sanction of Parliament.

6. That, in case it is decided to bring such a Bill before Parliament, the Council would be prepared to suggest the terms of the necessary schedule, including therein in the first instance *nitrous oxide gas*.

Sir HENRY MORRIS formally moved that the report should be adopted.

Dr. KNOX seconded.

Sir THOMAS FRASER said that whilst he entirely sympathised with the purport of the Bill, he thought there was some ambiguity in the second clause. Did it entitle a nurse, who was under the direction of a medical man, to make an injection whilst she was not actually under his immediate supervision?

The PRESIDENT said that points of drafting hardly concerned the Council at this stage, because it had no assurance that the exact text now submitted would ever come before Parliament. The Bill would have to be submitted to draftsmen and to the law officers of the Crown. He had the assurance of the Government that when the Bill was redrafted it would come before the General Medical Council. Therefore it was better that members should reserve their criticisms on points of detail until that stage. This draft was a preliminary sketch and the Council had been asked whether it was on the right lines. He had no doubt that the point raised by Sir Thomas Fraser would have to be considered.

The motion was agreed to.

Instruction in Professional Ethics.

Dr. LATIMER moved:—

That the Council should recommend to the several licensing bodies the addition to the latter part of the curriculum of some instruction in professional ethics, and that this recommendation should also apply to the dental curriculum.

He said that owing to the cessation of the old method of admission into the medical profession by way of pupilage to a medical practitioner one opportunity was lost to the medical student to come under the instruction and guidance of an elderly and experienced practitioner. Eloquent testimony had been borne at various times to the efficacy of this practice in regard to professional ethics. He had often heard the view expressed in medical circles that it would be a great advantage to the medical student that he should have some instruction in ethics. Many cases which came before the Council and also many cases which individual members came across in the large towns convinced him that there were medical men who departed from the code of medical ethics, because they were uninstructed in it. He did not propose that anything should be done more than to request the licensing bodies that a student should have one or two lectures delivered to him on the subject. The greatest advantage would accrue to young men if before leaving college they learned the pitfalls which they might meet with in their after career. There was an honourable professional code in the medical profession. He had seen it departed from. He had seen medical men fighting for an appointment as if they were engaged in a political battle. They canvassed workmen for their votes, and he believed that if the matter had been brought before the Council it would have taken a very severe view of the conduct. It was not an examination which he wished to institute in this matter: it was something in the nature of a kindly lecture. Medical students about to take their place in the ranks of the profession should learn the true relationship of principal and assistant and the relationship of medical man to patient. Guidance was also required in regard to such matters as advertising and the question of certification. Several members of the Council to whom he had spoken thought it desirable that the matter should be dealt with in a post-graduate course. He was not at all sure that that was the wisest plan. He hoped that the motion would be regarded as a suitable one.

Dr. LANGLEY BROWNE seconded. He considered that it would be extremely useful that the student should know before the end of his career the pitfalls which he should avoid and the courtesies which he should carry out when he went into practice.

Dr. NORMAN MOORE remarked that he was sure that all members of the Council sympathised with Dr. Latimer's aim that all students and practitioners in medicine should be guided by a proper code of morals. He differed from Dr. Latimer as to the means suggested—namely, of having a course of lectures in the medical schools. The authority of any course of lectures on the subject would depend upon the person who delivered them. That was a very important point. Let members of the Council look at medical etiquette and the conduct of practitioners from one end to the other. Was there anything more in the matter than that medical men should behave according to the ordinary precepts of morals and as gentlemen? He did not think there was more in it than that. It was desirable in the highest degree that all teachers of medical students should by their example do all that they could to encourage in the students rectitude of conduct. It would not be an advantage to have such lectures. The ordinary code of morals and the behaviour of a gentleman was what was required from a practitioner.

Sir CLIFFORD ALLBUTT considered that it was of high importance that these questions of conduct should be brought before medical students. It was very good for them to know how these principles could be applied.

Dr. SAUNDBY remarked that he had long held the opinions which had been expressed by Dr. Latimer. In the University of Birmingham some years ago he gave three or four lectures on the subject of professional ethics. These lectures were largely attended by practitioners, but the students did not come to them. They failed to reach the men whom he wanted to reach. After delivering these lectures for three years he stopped them, but afterwards published them in a book. If such lectures were to do good they must be made compulsory. If the student thought that it was a subject in which he was not to be examined he would neglect it.

Mr. TOMES said that the objection to Dr. Latimer's motion was that it would let the idea go out that there was a special system of ethics for the medical profession which was not applicable to other people. The principles of ethics might be laid down in lectures, but nobody had difficulty about the principles. The application of the principles could not be anticipated by lecture, and therefore the difficulties in practice could not be anticipated.

Dr. SAUNDBY observed that when he lectured on the subject he dealt with actual cases which had arisen, classifying them under different heads.

Sir CLIFFORD ALLBUTT pointed out that on admission to the Fellowships of the Colleges an imposing document concerning professional conduct was read out, and to its terms the candidate gave his pledge.

Dr. NORMAN WALKER said that he did not find students in Edinburgh quite so careless about these questions concerning professional conduct as they seemed to have been in Birmingham. He found that the views of the students in Edinburgh were often critical of the General Medical Council. They thought that the Council's rulings were extremely severe. The reason of this was that the reports of its proceedings in the ordinary newspapers conveyed an idea of severity which he did not think was justified. He did not see why the teacher of medical jurisprudence might not add one or two lectures on the subject of professional conduct to his students, who would be senior men.

Dr. MANN thought it advisable that teachers in their lectures should let students know that they would be very glad to give advice on this subject, and should encourage them to communicate with them, either personally or by letter. That was his practice.

Sir THOMAS MYLES thought that steps should be taken to advise young medical men of their responsibilities, but any attempt to teach a hard-and-fast system would be open to the objection that when an emergency arose outside the scope of their instruction they would not know how to apply the code.

Dr. LATIMER briefly replied to the discussion.

Sir D. C. MCVAIL thought that Dr. Latimer had done great service in bringing the subject forward, but suggested that he should rest satisfied with the line the discussion had taken and not press his motion to a division.

Dr. LATIMER: In response to that appeal I shall not press the motion.

The motion was by leave withdrawn.

Unqualified Practice Prevention Committee.

On the motion of Dr. LANGLEY BROWNE an interim report was received from the Unqualified Practice Prevention Committee. It was in the following terms:—

The report as to the practice of medicine and surgery by unqualified persons in the United Kingdom, presented to both Houses of Parliament by command of His Majesty, was received by the committee. It was resolved that the report should be fully considered at a future meeting of the committee, and that the committee should report thereon to the next meeting of Council.

The Medical Curriculum and the Preliminary Examination.

Dr. MACKAY presented a report from the Education Committee upon a resolution remitted to it by the Council regarding the curriculum and upon the preliminary examination in general education. The resolution, which was passed on Nov. 26th, 1909, was in the following terms:—

That it be referred to the Education Committee to consider further the place in the student's career which the preliminary sciences should occupy; and that the committee be requested to frame and submit to the Council a pattern scheme of medical education whereby the required minimum of the several subjects to be included in the curriculum can be adequately studied and the requisite examinations thereon passed within the period prescribed by the curriculum.

Dr. Mackay said, in explaining the terms of the report which the committee had brought up on this resolution, that only in regard to the preliminary examination did the committee bring forward a recommendation which would require the sanction of the Council to be made effective. In regard to the question of the preliminary sciences, the Education Committee after an analysis of statistics had come to the conclusion that the energies of the great majority of the schools of the country ought for some time to be entirely absorbed in raising the standard of the general education of their pupils to the position which it ought to occupy. As was shown by the report, the committee had been enabled to furnish the Council with statistics as to the number of the candidates who had sat the first professional examination of the Conjoint Board of England on the strength of a school curriculum alone. The secondary schools which the Board recognised numbered 49 in all, and, as they had been specially inspected with a view to ascertaining that they were adequately equipped for the work, they might be regarded as specimens of the best of their class. The Conjoint Board had recognised instruction in the preliminary sciences in institutions other than universities and medical schools for a period of 16 or 17 years. A very small proportion of students had received instruction in this manner. The committee had been forced to the conclusion that as this very small proportion came from the best schools in the country it was practically impossible to expect that the ordinary secondary schools could at the present time take up the work. The figures which had been received by the committee showed that only a very few, and these apparently of exceptional ability, coming from the best schools in the country, were prepared to undertake the first professional examination upon a course of school study; and they confirmed the view of the committee that the schools of the country generally were not at the present time in a position to take up the work. The committee were of opinion that the question contained in the proposal to delegate indiscriminately to the school curriculum the subjects of the first professional examination was one which was not ripe for the consideration of the Council. It might be said that the Council ought to recognise the schools which the Conjoint Board had already recognised. If the Council would but enter into this matter a very long and difficult discussion would be the result. If it began the recognition of schools, the incline was so steep that the claims of all secondary schools putting forward candidates could not be resisted, and the result would be that the standard of examination in the preliminary sciences would be lowered beyond any possibility of retrieval. The second point referred to the committee was the suggestion that a pattern curriculum should be established. The committee came to the conclusion that it could not draw up a curriculum under which the required minimum of the several subjects to be included could be adequately studied, and the required examinations thereon passed by the average student within the period prescribed by the curriculum. The period of five years was to be regarded as the minimum of time to be allotted to the course of study, and it was not unnatural that only the best or the most favourably situated of the candidates found it sufficient. He would point out that it would be a very difficult matter for the Education Committee to draw up a pattern curriculum. Let the members of the Council look over the curricula of the different licensing bodies. They would not find one amongst them which was not a satisfactory curriculum. They differed from each other in different ways. If the Council were to determine upon a pattern curriculum, that curriculum must be a minimum one. He did not think there was a single existing curriculum that could be called a minimum curriculum. One was perhaps comparatively weak in one point, but strong in another. If a pattern curriculum was established, it must be a mimimum curriculum in each individual subject. In his opinion it would be a retrograde step if one were to be drawn up. The third subject which had been under the consideration of the committee was the preliminary examination in general education. He quoted at length from the report of the committee on the considerations which had weighed with it and the conclusions which it had reached. He referred to the improvement of education conditions in England and Scotland. The committee had come to the conclusion in regard to the examinations now recognised as preliminary examinations for medical study, that the elimination of those examinations which are most distinctly "junior" in type would not have the effect of diminishing to any considerable extent the number of the candidates entering the profession or of compelling examiners to a laxity in marking which would tend to lower the level of the higher examinations. On the other hand, the evidence seemed to point to the conclusion that the removal of these examinations from the preliminary list, if sufficient time were given to allow the change to be accomplished gradually, would be fully met by the improvement in the educational conditions of the country which was now taking place and was sure to extend. The change would certainly be welcomed by the schools as an educational advantage, as it would tend to prevent the premature withdrawal of the bright youth from his school career at an age when the crowning part of the work remained to be done. The committee brought forward a recommendation to give effect to their views. It was not proposed that it should apply to dentists. In conclusion Dr. Mackay moved the adoption by the Council of the recommendation of the committee, which was in the following terms:—

That on and after the close of the year 1913 the following examinations be removed from the list of the preliminary examinations recognised by the Council as qualifying for entrance on the curriculum in medicine: The Junior Local Examination of the University of Oxford; the Junior Local Examination of the University of Cambridge; the College of Preceptors Preliminary Examination for Medical Students; the Educational Institute of Scotland Preliminary Examination; the Royal College of Physicians and Surgeons of Ireland Preliminary Examination; the Intermediate Education Board of Ireland Middle Grade Examination.

Dr. NORMAN MOORE seconded.

Sir HENRY MORRIS said that in regard to the preliminary sciences and the pattern curriculum the report left things as they were. The reply of the committee was that it could not do as it was asked, and the only reason given for its inability to do so was the very remarkable one that only exceptional candidates could accomplish, within the allotted time, the study of the full number and amount of the subjects contained within the present curriculum. It was with the object that the committee should consider and report to the Council how this very condition of over-congestion of the curriculum might be obviated that the resolution of Nov. 26th,

1909, was referred to it. There were two ways in which the congested curriculum could be relieved—namely, (1) either by lightening the curriculum, or (2) by extending the period. The report did not deal with either alternative. It left things exactly as they were. It had made no attempt whatever to adapt the quantity of the contents to the containing space, and the only reason given for its not doing so was that the contents were greater than the space could contain. The committee was not asked to draw up a pattern curriculum which would prove acceptable to the majority of the licensing bodies and which would remove the diversity of detail among the curricula. It was not asked even to draw up a pattern curriculum. What it was asked to do was to draw up a pattern curriculum whereby the required minimum of the subjects included could be adequately and successfully studied within the period prescribed by the curriculum by the average student. The members of the Council knew how improbable it was that any pattern scheme would be accepted by all the licensing bodies, or that diversity of detail among the curricula could be prevented. Diversity of detail in a possible curriculum would be no bad thing. What was the mischief was, that the present curriculum was impossible to the average student. That was the darkness into which the Council asked the committee to throw the light. But the result of its report was that the students and their parents were left uninformed by the Council of the fact that a nominal five years' curriculum must in reality be one of six and a half or seven years; and the parent who launched his son as a medical student and expected to see him through on the expenditure of from £800 to £1000, had, by bitter experience, to realise that it was only after an additional year and a half or two years of time, and an additional £200 or £400 in cash, that the qualification which he and his son had in view could be attained.

The first part of the resolution of Nov. 26th, 1909, was "that it be referred to the Education Committee to consider the place in the student's career which the preliminary sciences should occupy." The reference was not as to the place in the curriculum, but as to the period of the student's career, which the preliminary sciences should occupy—as to whether they should be studied within the period of the curriculum, or previously. The answer of the committee might have been simple and direct, to the effect that the precise period should remain, as in fact it was now, optional; but that if previous to registering, but after passing an examination in general education, the curriculum should be correspondingly shortened by 6 or 12 months. Or its reply might have been that the period should be before the commencement of the curriculum, and that the curriculum, unburdened of the preliminary sciences, should remain at five years. The reply of the committee implied an untruth—of course, quite unintentionally, but still an untruth—that the preliminary sciences must be studied in the five years and in medical schools or in scientific institutions. The wish was father to the thought, and the thought to the implication. The reasons given for this reply are two: (1) that to transfer the subjects from the curriculum, and make them part of the course of school education, would be to remove them from any effective control on the part of the medical authorities; and (2) that the indiscriminate delegation of these subjects to the school curriculum was a matter which was not ripe for the consideration of the Council. The answer to the first was, that if the preliminary science subjects were made part of the school course, the examination in them would be under the same kind and extent of influence as the subjects and standard of the examination in general education. The answer to the second was given by Huxley in 1889. as well as by the teachers, and by the writers of an important document 20 years ago. Now these subjects, as long as they are retained in the curriculum, either ought to be exclusively studied in a medical school and taught by teachers in touch with the whole course of medical education, or their study elsewhere than at a medical school under specified conditions ought to be recognised. The question might be set aside of their being taught by men in general touch with the medical curriculum as a whole, because whether taught in a medical school or not they were taught by teachers who regarded the study of these subjects as the first steps in a science education, and who very little considered their special bearing on other parts of the medical curriculum; whereas the study of organic chemistry in its bearing on physiology and pathology was provided for within the limits of the professional curriculum. But if the study of these subjects was not to be of necessity within a medical school, then on what code of justice was the study of them in a highly equipped secondary school to be prohibited? Why are schools like Epsom, Dulwich, Bedford, St. Paul's, University College School Frognal Hampstead, to be prohibited, whilst polytechnic institutions and municipal technical schools, and several others mentioned on p. 13 of the Students' Regulations of the General Medical Council are recognised?

The report gave two statistical tables and stated that these tables showed that only a very few boys, and those apparently of exceptional ability, were prepared to undertake the first professional examination upon a school study. This was an incorrect and a misleading assumption for three reasons. In the first place, amongst the boys who pass the preliminary scientific (first professional examination) of the University of London as external students are a considerable number from secondary schools, many of whom come for examination in the advanced subjects to the Conjoint Board, and thus are not returned in the tables as coming from secondary schools, though it had been from secondary schools that they presented themselves for examination at the University of London. In the second place, at least half of the Conjoint Board candidates are University graduates or undergraduates, and are therefore exempt from examination in the preliminary sciences at the Conjoint Board. In the third place, there are many who had done a part of their preliminary science studies at secondary schools and the rest in a medical school and are tabulated as having come from the latter. But in so far as the number of candidates from secondary schools, with highly equipped modern sides—with excellent laboratories and highly qualified teachers—were fewer than might be expected, one cause was the misleading and inaccurate, "so-called," regulation No. 12 on p. 14 of the Council's publication, "Registration of Medical Students," and which the Report left without reference, untouched and uncorrected. This regulation was not only misleading and inaccurate—it was directly contrary to the facts. By that clause the Council was made to appear as usurping a power which belonged to the licensing bodies alone, and sometimes the Council was put into a very ridiculous position thereby. The General Medical Council could not refuse to place a man on the Register if he had passed his examination in general education and in preliminary science from school and graduated M.B. Lond. four years after registration. As long as Regulation 12 remained amongst the regulations of the Council an injustice was done to the boys, to the parents and to the secondary schools. In conclusion, he said that he was prepared to move the following motion:—

That as the Education Committee in their report of Nov. 22nd, 1910, express views in favour of retaining the preliminary sciences (chemistry, physics, and biology) as subjects of the medical curriculum, it be referred to the committee to consider and report to the Council as to the best way of amending the regulations of the General Medical Council in regard to the registration of medical students with the objects (1) of making those regulations consistent with the report and with the powers of the Council; (2) of making clear the distinction between regulations which must be observed and recommendations made for the students' guidance; and (3) of the advisability of altering or deleting Regulation 12 on page 14 of the regulations printed under date June 1st, 1910.

The PRESIDENT said that the motion of Sir Henry Morris really related to a different subject than that raised by Dr. Mackay's motion, which concerned the preliminary examination alone. Sir Henry Morris might, however, bring it forward as bearing on the first and second parts of the report after Dr. Mackay's motion, which dealt only with the third part, was disposed of.

Mr. THOMSON remarked that the Council might take some further expert advice on the value of these junior examinations.

Sir CHARLES BALL moved as an addition to Dr. Mackay's motion:—

That the Education Committee be authorised, on behalf of the Council, to communicate with the Commissioners of Intermediate Education in Ireland as to the possibility of establishing a satisfactory preliminary examination in education under the control of the Commissioners suitable for students commencing the study of medicine.

Such a substitute, he said, was absolutely necessary in Ireland. There was nothing in Ireland comparable to the leaving certificate. This addition was agreed to.

Sir C. NIXON seconded.

Dr. MACKAY accepted the amendment.

Dr. MACKAY's motion as extended by Sir Charles Ball's amendment was agreed to.

Sir HENRY MORRIS then formally moved the motion, the terms of which he intimated at the conclusion of his speech.

Dr. LANGLEY BROWN seconded.

It was unanimously agreed to defer further consideration on the motion until the next session of the Council in May, 1911.

Instruction in Scientific Subjects.

On the motion of Dr. MACKAY a report in the following terms was received from the Education Committee:—

On May 28th, 1910, the Council received a memorial relating to the position of the purely scientific subjects of chemistry, physics, botany, and zoology in the medical curriculum, which, on the motion of Dr. Saundby, was referred to the Education Committee for its consideration.

The subject to which the memorial refers having been dealt with specially in the report of the committee, further comment appears to be unnecessary at the present time. The committee would thank the memorialists for the expression of their views.

Instruction in Ophthalmology and Otology.

Dr. MACKAY presented a report from the Education Committee. It set out that—

On May 28th, 1910, the following resolution by the Examination Committee was referred to the Education Committee for its consideration:—

In the curriculum of all the licensing bodies, with three exceptions, special courses on ophthalmology form an essential part. The committee are of opinion that every student of medicine should receive some special instruction in the subject. The committee do not think it necessary to insist that every student should be examined in ophthalmology, but they are of opinion that all students should be liable to be examined in some branch of the subject.

While the committee would commend the practice of giving specialised instruction in otology and diseases of the throat they do not think it necessary to insist, in the present crowded condition of the curriculum, that special courses and examinations should be made obligatory, provided the subject be included under the general headings of Medicine and Surgery.

The report was received.

Conclusion of Session.

A vote of thanks having been awarded to the chairman for his services in the chair, the business before the Council for the winter session was concluded.

The Council rose and will meet again in May, 1911.

THE LONDON COUNTY COUNCIL AND MEDICAL AFFAIRS.

Rearrangement of Coroners' Districts.

THE Public Control Committee in a report to the London County Council on Nov. 22nd referred to the resolution passed by the Council on Oct. 11th praying the King to order such alterations in the boundaries of the coroners' districts, exclusive of the franchise districts, as to make them coincide with the boundaries of the metropolitan boroughs. One effect of such an adjustment would be that extensive alterations would be made in the areas comprised in the southern and south-western coroners' districts, and since the Council's decision the committee had been advised that serious difficulties in regard to compensation, &c., might be encountered in taking steps to carry out the alteration of boundaries in the two districts mentioned. The committee was of opinion, therefore, that the alterations of boundaries should be confined at present to those cases in which the boundaries did not coincide because of alterations of parish areas. At the meeting on Nov. 22nd and again on Nov. 29th the consideration of the report was adjourned.

Observance of Health By-laws.

Replying to a question as to the enforcement of the Council's by-laws as to spitting on tramcars, Mr. White, chairman of the Highways Committee, said that seven convictions for contravention had been obtained and a few hundred letters of caution had been sent. It was extremely difficult for the conductors to deal with the matter, and he wished passengers could be persuaded to help. It would then be possible to do a great deal to check this objectionable habit.

Administration of the Provision of Meals Act.

The Education Committee of the Council on Nov. 23rd received from the Children's Care Subcommittee an exhaustive report on the working of the Council's scheme for providing meals for necessitous children. The subcommittee stated that existing arrangements by which children attended at either (*a*) buildings hired by or lent to the Council, (*b*) coffee houses, and (*c*) private dining centres were not completely satisfactory. It was difficult to ensure a proper supply of meals. As an alternative—notwithstanding the Board of Education's objection—the subcommittee thought it would be better to make a wider use of school halls. Teachers and others had urged numerous objections to this course, but the subcommittee stated that the children could all leave by 1 o'clock, so that there would be ample time for ventilation; the spilling of food was a trivial matter—all that was necessary was that the helpers should pick up anything on the floor of a greasy nature and the halls should be washed fortnightly instead of once in three weeks. The provision of accommodation for washing up was a difficulty, but it could be met by building annexes. The whole number required would cost £20,000. The subcommittee had to admit that from the Council's point of view the decision to enter into a four years' contract with an outside body for the supply of meals was ill advised and added that the ideal method would be the establishment of a dining hall and kitchen for each group of schools. The discussion was adjourned. On Nov. 30th, after debate on points of detail, the proposals of the subcommittee were agreed to.

Cleansing of Verminous Children.

The subcommittee also reported as to the cleansing of children infested with vermin, recommending that as the number of such children would probably show a progressive diminution arrangements should be made to use borough council cleansing stations rather than go to the expense of establishing special stations at the schools. Thirteen borough councils—the City Corporation made a free offer—were willing to do the work at a charge of 2*s.* per head, and agreements for one year should be entered into. For the remaining districts the County Council would have to make its own arrangements, adapting existing buildings or putting up temporary ones. Any scheme for cleansing the bodies and clothing of children would be ineffective unless their homes were cleansed too, and the borough medical officers were willing to coöperate in this. It was estimated that about 20,000 children required cleansing, and the agreements with the borough councils would provide for 12,000 of them. Three visits to the cleansing station would be necessary in each case. The proposals were agreed to.

Cost of Dental Treatment.

The subcommittee submitted a fresh recommendation in regard to the recovery from parents of the cost of dental treatment,[1] advising that instead of the definite charges then proposed each case should be considered on its merits, provided that some charge was made in all cases and that in no instance should the amount paid by the parent exceed 1*s.* As in the case of medical treatment, legal proceedings would not be taken where the local care committee was of opinion that the parents could not pay. The recommendation was approved.

Medical Treatment at Hospitals.

At the meeting of the County Council on Nov. 29th Mr E. A. H. Jay, who has just succeeded Mr. Cyril Jackson as chairman of the Education Committee, and who took a prominent part in the organisation of medical treatment in London through the agency of the hospitals, had charge of the Education Committee's report. He stated, in reply to a question, that inquiry had been made into the allegation, voiced by several speakers during recent debates on the question of medical treatment, that children had been sent away from certain hospitals because they had not with them a card issued to each child attending under the Council's scheme of medical treatment. The secretary of the St. George's Hospital wrote that every patient who applied for medical relief was treated, no distinction being made between patients coming with or without letters, or between attending school and voluntary patients. The authorities of the Poplar Hospital and of the East London Hospital wrote in similar terms.

[1] THE LANCET, Nov. 19th, p. 1507.

THE LANCET.

LONDON: SATURDAY, DECEMBER 3, 1910.

The Report of the Chief Medical Officer to the Board of Education.

THE annual report for 1909 of the chief medical officer to the Board of Education, presented to Parliament on Wednesday last, is a document of great interest and extremely cheerful tendency. Dr. GEORGE NEWMAN, chief medical officer to the Board, explains that the report is somewhat fragmentary in form and substance, adding that it is "a plain record and must speak for itself," and this it does in unmistakable terms, the account of the work done being given in so clear and comprehensible a manner that the lessons conveyed cannot escape the reader. Nor can the net message of the report be overlooked, which is that a vast revolution is taking place in our physical care of the youth of this country, the most active agent in which is systematic medical inspection of the State-educated children. Facts have been collected with regard to the administration of medical inspection and treatment, the physical education of school children, and the provisions made for defective or feeble-minded subjects, most of which are quite new, and some of which raise questions of far-reaching social importance. These things speak to work accomplished, and from reading the account of them we arrive at two conclusions, both of which are in accord with the expressed views of the chief medical officer. The first is, that in spite of all difficulties, limitations, and adverse conditions the national system of medical inspection and supervision of school children has now been established throughout England and Wales on a working basis; and the second is that the work of this system has not resulted, as was so freely prophesied would be the case, in the mere collection of statistics, but has, on the contrary, brought about a new social condition among us, under which thousands of children are now receiving physical aid, and in a secondary manner moral support, the absence of which has hitherto implied not only great misery to themselves but incalculable loss to the State.

During the year 1909 medical inspection became for practical purposes an integral part of the public health administration of the country. The fundamental principle of the Act of 1907, the Education (Administrative Provisions) Act, under which medical inspection became a statutory duty of local education authorities, was to promote the physical and mental development of children during school life, and the steps that were taken to this end have proved to be well-directed. The Act laid down that it was the duty of each local educational authority to provide for the medical inspection of children at admission to a public elementary school, while a later code made it a further requisition that all children should be examined upon leaving. Sooner or later there will be a third inspection age-group intermediate to these, and local education authorities may already expect to undertake this responsibility. As the schedule of medical inspection laid down by the Board of Education has been almost universally adopted by the authorities, some even stiffening it by actually requiring more information concerning their young charges than the schedule of the Board demands, we seem to be within a reasonable distance of the time when all our children will obtain the benefits of the new legislation in a thorough manner. London, where undoubtedly the situation is more acutely hard than anywhere else in the country, lags behind. The complicated difficulties under which the London County Council finds itself are well known to everybody, and for the present the Council school children of the metropolis will be placed at a disadvantage, but there is a sincere wish on the part of the Council to meet the situation squarely, and this being the case, we must hope that progress will soon ensue. The scheme of medical inspection is now approved and school medical officers have been recognised by 314 out of 327 local education areas. In these 314 cases the medical officer of health has been selected as school medical officer in 230 cases, while in the remaining 84 cases 74 school medical officers have been appointed definitely under, or in connexion with, the medical officer of health, and the remaining 10 cases show in their appointment some degree of coöperation. From the very beginning of the movement which led up to the passing of the Act we were of opinion that inasmuch as school hygiene could never be divorced from home hygiene, the more sympathy, and even combination, could be secured between the educational authority and the sanitary authority in the matter of medical inspection the better it would be for the children concerned. The view did not find universal favour, and some well-qualified thinkers upon education considered it a narrow one; but events have since justified the attitude which we took up, while the allegation that the routine work of the school doctor, working in coöperation with a sanitary authority, would be so monotonous and uninspiring that the service would be unpopular with the progressive medical man has broken down. Nowhere does it seem that the duties of the school doctor are being discharged in a perfunctory manner. It is, on the contrary, and as Dr. NEWMAN notes, gratifying to record that the reports from the school medical officers contain frequent references to matters lying without the routine of inspection, but which have been made the subject of inquiry during the year. Among such miscellaneous subjects, which have been reported upon in 1909, may be mentioned the employment of children out of school hours, many matters relative to the feeding of children, the medical examination of children attending swimming-baths, the influence of exercise upon heart strain, the problem of dust in school buildings, the relationship existing between various groups of diseases, the home conditions of consumptive children, and so on. The reports of school medical officers containing work upon these and other matters have many of them been reviewed in our columns upon their appearance, and we are able to testify to the interest created by such inquiries, while their value from a national point of view

may become very great. We therefore cordially endorse Dr. NEWMAN'S suggestion that school medical officers, wherever the time or opportunity allows, should select a subject for investigation and report, for they would in this way constitute themselves into a standing commission with a roving reference upon the health of the children of the country during the school age, and we cannot conceive the institution of any commission which would more conduce to the national health, happiness, and prosperity.

Systematic "following up" is required if a local education authority is to ascertain how far its system of inspection is not being wasted, and whether the facilities existing within its area, alike for prevention or for treatment, are being used. "Following up" is the stage intermediary between inspection and treatment. The result of the inspection having been communicated to the parent or guardian of the child, the next step is to make inquiries after a reasonable interval whether the remedy has been taken and why failure may have resulted in certain cases. In these proceedings the part played by the parent is, in our opinion, of paramount importance, and however inconvenient it may be sometimes, when the saving of time and perhaps the saving of space is an object, to dispense with the presence of the parents at the inspection of their children, there can be no doubt that parents ought to be urged to be present whenever possible If they have seen the inspection they can by word of mouth be impressed with the importance of the treatment recommended for the child, when they often become, to the surprise of their neighbours, pioneers of sanitary progress in their district. The influence of the teacher is also extremely weighty. Indeed, in the last annual report of Dr. THRESH, the county medical officer of Essex, the statement occurs that the head teacher is the dominating factor in the situation. This depends upon the personality of the head teacher and the measure of his hygienic knowledge; where, as is the frequent case, the head teacher is in full coöperation with the school doctor, the influence for good is without bounds, but an unprogressive attitude on his part is proportionately unfortunate. The school nurse and the school attendance officer have also their part in the work of following up, but the duties of the school nurse in assisting at the routine of medical inspection are very valuable, and it has to be remembered that if she is detached from these duties to do house-to-house visiting among the parents of the children she will not be so available for her other functions. It has been suggested that where this is the case the services of the district nurse, where there is one, should be employed, but the value of these services is not so great. Lastly, there remain care committees, and of the work of these excellent agencies we say but little now. Care committees are as yet formed on no particular pattern, and being frequently branches of existing organisations have varying precedents upon which to work. Dr. NEWMAN writes with full appreciation of the generous services of these voluntary bodies, whose use, we are sure, will be greater when a definiteness of aim has led to more uniformity in their work.

Dr. NEWMAN makes the general statement that in respect of the six million children in the public elementary schools of England and Wales about 10 per cent. of them suffer from serious defects of vision; from 3 to 5 per cent. suffer from defective hearing; 1 to 3 per cent. have suppurating ears; 8 per cent. have adenoids or enlarged tonsils of sufficient degree to obstruct the nose or throat and to require surgical treatment; 20 to 40 per cent. suffer from extensive and injurious decay of the teeth; 40 per cent. have unclean heads; about 1 per cent. suffer from ringworm; 1 per cent. are affected with tuberculosis of readily recognisable form; and ½ to 2 per cent. are afflicted with heart disease. The field for treatment is thus enormous. The immediate problems of the school medical service are to ascertain in each area what children are suffering from various defects and ailments and what is the character and degree of these ailments. In how many of these cases can the local education authority reasonably expect that, with the assistance of existing voluntary agencies, amelioration will be secured without further intervention by the authority? This has to be considered. Dr. NEWMAN'S report deals as fully as possible with the action taken by various local education authorities in respect to medical treatment, but the problems here involved have only been seriously considered by any large quantity of education authorities for a little over a year, and no very complete or symmetrical tale can be expected. During the year 1909 Dr. NEWMAN is able to report a widespread improvement of school arrangements, showing that the lighting, heating, ventilation, and sanitary condition of school buildings generally have received a degree of attention hitherto unknown. Much of this improvement of the sanitary environment of both teacher and taught has been due to the inspections and recommendations of school medical officers. The machinery of actual treatment has been set in work in numerous directions. Some authorities have arranged that the nurses employed to assist in inspection should be employed in the duties of treatment, acting in conjunction with the general practitioners, upon whom the care of many of these children devolves. Other authorities have made contributions out of the education rate to existing nursing associations in return for services in the care of the State educated children. Some authorities have decided to provide suitable and inexpensive spectacles free of charge after due precaution that the children's eyes have been examined by medical men and that the parents were unable to provide the spectacles for their offspring. Twenty authorities have made contributions out of the education rate to hospitals, and under these arrangements a large number of children have received treatment during the year; and despite the fact that this proceeding must be regarded critically, it certainly seems to have the advantage of simplicity. What is required, however, is a safeguard against resort to the hospitals by children whose parents are well able to pay for medical attendance elsehow. Such are the directions which treatment has so far followed; those who know little of the difficulties involved may not be impressed by what has been done, but those who have followed the course of what is really a social revolution will take a different view. They will join with us in congratulating Dr. NEWMAN upon being in a position to tell a story of such sound performance and such magnificent promise.

The Danger of the Enteric Fever Carrier.

THE existence of the "carrier state," and the infective ability of the "carrier," are conditions which are now almost universally recognised as important in the causation of enteric fever. In this country the inquiries of medical officers of health, medical inspectors of the Local Government Board, and army medical officers have brought to light several striking examples of the spread of infection by individual carriers. The subject has been studied abroad, in France and America, and on a larger scale in Germany at the bacteriological stations established in connexion with the elaborate campaigns against enteric fever which were organised some six years ago in Bavaria and Alsace-Lorraine. Valuable contributions have also been made in India, from the Central Research Institute at Kasauli, in Japan, and in other countries. The literature, however, is widely scattered and much of it difficult to obtain, so that hitherto it has hardly been possible for the English reader to obtain a comprehensive statement of the present state of knowledge on the prevalence of carriers and the bacterial conditions associated with them. The difficulty has been removed by the publication of a special report on "The Enteric Fever Carrier," which has been made to the Local Government Board.[1] In order that the information available from home and foreign sources might be systematically abstracted and reviewed from a bacteriological standpoint, the work was entrusted to Dr. J. C. G. LEDINGHAM, who is to be congratulated on the success with which he has carried out a very laborious task. The volume supplies information and commentary on all the principal instances of infectivity of carriers, the pathogenesis of the carrier state, and the treatment of carriers. Its issue will naturally lead to new inquiries regarding the degree of importance to be attached to the operations of carriers in explaining the spread or maintenance of enteric fever in this country. One such inquiry has already been made by Dr. THEODORE THOMSON, who collaborated with Dr. LEDINGHAM in the Local Government Board investigation, and has contributed a comprehensive and well-balanced review of the epidemiological considerations involved in his presidential address to the Epidemiological Section of the Royal Society of Medicine on Nov. 14th last. The enormous capacity for mischief of certain carriers to the people with whom they live or to the inmates of institutions for which they work has been proved beyond doubt. In the Göttingen case, reported by ROSENTHAL, a woman appears to have been responsible for the infection of at least 13 people for whom she prepared food between 1897 and 1906; the New York cook, according to SOPER'S inquiries, may be considered responsible for the occurrence of no fewer than 26 cases of typhoid fever in seven different families; the Brentry carrier, studied by DAVIES and WALKER HALL, is held to have originated enteric fever outbreaks in at least three institutions between 1904 and 1908; and several equally striking examples of intense and prolonged infectivity are given in this report. Carrier cases have also been suspected on many occasions of originating outbreaks or maintaining endemic typhoid fever in particular localities. Their ability to do so is supported by very strong circumstantial evidence, implicating healthy persons ascertained to excrete the bacillus typhosus, and rendering it unnecessary to assume strings of undiscovered or "missed" cases of enteric fever, for the existence of which no evidence at all can be found. Recent instances of the kind have been reported in England by Dr. R. W. JOHNSTONE and other observers, and accord with the results of many foreign investigators.

The carrier is a person, usually a woman, who, although in good health, carries the infectious material in the body and excretes the bacillus typhosus in fæces or urine. The excretion of the bacillus may continue, persistently or at intervals, during many months or years. The carrier state is not necessarily the result of a previous attack of enteric fever, or at least of any illness which can be traced or is known to the carrier. Enteric fever patients, however, may continue after convalescence to excrete the bacillus, sometimes for a period less than three months ("temporary carriers") and sometimes for much longer periods ("chronic carriers"), and it is naturally among persons who have been attacked by enteric fever that most carriers have been detected. Readers of Dr. LEDINGHAM'S report cannot fail to be struck by the magnitude of the observations which have been made by different bacteriologists with the object of ascertaining the existence of carriers and determining the frequency with which their excreta are infective. It is to be expected that these observers, working under different circumstances and employing different methods, would obtain very different statistical results, and that, other things being equal, a larger proportion of carriers will be found by those who have had the most frequent opportunities of examining excreta from individual cases. This is, in fact, the case, and much caution is necessary in accepting statistics representing either the proportion of carriers among those who have been attacked by enteric fever or the proportion of carriers present in a general population. But it would be wrong on this account to ignore the general trend of the evidence on these points. Taking strictly moderate estimates, it would seem that on the present criteria of the bacteriologist some 3 per cent. of enteric fever cases become chronic carriers. And as regards the proportion of chronic carriers in a general mixed population, a considerable series of observations is available which suggests the prevalence of carriers to an extent of something like 3 per 1000—a result which is perhaps surprising, but which we have no reason to consider in excess of the truth. The number of normal people, whether or not they have previously been attacked by the disease, in whose excreta the bacteriologists have found the typhoid bacillus is indeed relatively so high that current conceptions of the danger of the individual carrier must be very largely modified. On a basis of three persons liable to excrete typhoid bacilli per 1000 of the population, London alone would contain more than 14,000 carriers. And when it is considered that the total number of known enteric fever

[1] Reports to the Local Government Board on Public Health and Medical Subjects. (New Series, No. 43.) London: Wyman and Sons. Price 1s.

cases in London in 1908 was only 1357, and that carriers, however numerous, have not prevented the conspicuous decline which has taken place in the prevalence of enteric fever during the last half century, the danger of the average carrier would appear for practical purposes to be negligible. Carriers should be most abundant in towns which have recently passed through severe epidemics of enteric fever due, for example, to sudden water infection. Dr. THOMSON points out, however, that the prevalence of enteric fever in the years following the great water epidemics of Worthing in 1893, Maidstone in 1897, and Lincoln in 1905, was no greater than in the years preceding the water infection.

The infective potency of the average carrier, even when he is occupied in the preparation or handling of food, seems thus to be of a very different order to that of the Brentry dairywoman or the New York cook. Future inquiries may be expected to throw more light than we at present possess on the circumstances in which carrier infectivity becomes specially accentuated. Several observations noted by Dr. LEDINGHAM point to the importance of concurrent physiological or pathological conditions in the carrier which may lead to the periodical excretion of bacilli in unusual abundance or even in a state of increased virulence. And to a large extent, no doubt, the explanation is to be sought in other and less recondite circumstances. The dose of infective material is of consequence, and individuals of ordinary personal cleanliness should usually have few opportunities of conveying to others a harmful quantity of infective material derived from their fæces or urine. Again, many carriers are not concerned with food preparation and live in places where their excreta cannot easily contaminate soil or water. Dr. LEDINGHAM'S report contains a valuable account of the methods adopted with greater or less success in the medical treatment of carriers and of the precautionary or preventive measures which have been adopted when carriers have been detected. While strict surveillance seems necessary in the case of carriers of proved infective ability, especially where food preparation is concerned, there seems to be no warrant in our present knowledge for any drastic action in the case of every individual who has been ascertained by the bacteriologist to be in the carrier state. Fortunately, the principal measures which have resulted in the diminution of enteric fever in this country must have been as effective against the spread of infection by the carrier as against that of infection by persons suffering from the disease.

Practice by "Unqualified Persons."[1]

THE General Medical Council, in view of the evils to the community consequent upon the unchecked practice of medicine and surgery by unqualified persons, and after the completion of an inquiry which showed that in many countries the laws intended to prevent such practice are more stringent and more effective than those of the United Kingdom, intimated to the LORD PRESIDENT of the Privy Council, of which the General Medical Council is a department, that the Medical Acts do not sufficiently fulfil their declared purpose of enabling persons requiring medical aid to distinguish qualified from unqualified practitioners, and also that it is contrary to the interest of the public that medical and surgical practice should be carried on with impunity by persons holding no recognised qualifications. As a corollary to these propositions, the General Medical Council requested the Government to take steps for the appointment of a Royal Commission to inquire into the evil effects produced by the unrestricted practice of medicine and surgery by the unqualified persons referred to. On receipt of this communication the LORD PRESIDENT deemed it expedient in the first instance to have recourse to "ordinary means of information," and he appealed to the Local Government Board, the Scottish Office, and the Irish Government, asking that circulars might be addressed to the medical officers of health of each country inviting their opinion as to whether the practice of medicine and surgery by unqualified persons is increasing, and as to its effect upon the public health. The result, like the result of half measures in general, cannot be described as entirely satisfactory; but it has at least served to bring together a considerable amount of information and many opinions based upon extensive observation and experience. Replies to the inquiries have been furnished by over 1600 officers, and these replies have been summarised, either in the Privy Council Office or in that of the Local Government Board, for each division of the kingdom, although the Local Government Board expressly disclaims any responsibility for the views which are expressed. In each division the summary deals with quacks in classes, as herbalists, bone-setters, dentists, oculists, and so on, through the somewhat wide range of their various pretensions; and in each class we have a distinction between the mischief done by positively injurious treatment and the mischief done by treatment which in itself might be harmless, but which has prevented a proper course from being pursued in time. Under both heads the indictment is a terribly serious one, and reflects in the gravest manner upon a country by which such evils are tolerated.

A prominent place in the replies from all three divisions of the kingdom is given to the evils arising from the practice of midwifery by unqualified persons; but it is only in England that attention is specially directed to the proceedings of abortionists, whose practice is said to be "increasing considerably in many parts of the country," and where "advertisements of abortifacients appear in newspapers to an increasing extent." Specimens of the advertisements are given, and are of an exceedingly flagrant character, insomuch that no newspaper accepting them could plead uncertainty as to their true meaning and tendency. It will be remembered that we ourselves called attention to this subject 12 years ago in a series of articles entitled, "Quacks and Abortion," in which it became our duty to show that some of the newspapers professing the noblest sentiments were the most systematic offenders in this respect. We had the satisfaction of stopping the insertion of such advertisements for a time, but the exposure was forgotten, the smaller papers were again tempted, larger ones gradually

[1] Report as to the Practice of Medicine and Surgery by Unqualified Persons in the United Kingdom.

followed their example, and although the evil has not regained its original dimensions, invitations to produce abortion are again prominent in the columns of many of our popular instructors. The time has certainly come at which the admission of such advertisements should be rendered a criminal offence. Next to the abortionists, perhaps the chief stress is laid upon the doings of "bone-setters." We are told, for example, that their violent manipulations have occasioned real injury, that they undertake the cure of cancer cases with disastrous results, and that bad effects are reported from their treatment of cases of tuberculous bone disease, particularly in its incipient stages. It is manifest that in such cases they would often cause the dispersal of what might originally be a localised deposit, and that death from general tuberculosis might easily be an effect of their interference. A good deal is said of the treatment of eye disease by unqualified persons, especially by those assuming such titles as "ophthalmologist" or "qualified ophthalmic optician," or placing such letters as F.I.O., F.S.M.C. (Lond.) after their names, and thus leading the public to believe that they are fully qualified medical practitioners. The summary for England states that unqualified practice of this kind is strongly condemned in all quarters, and that eyesight has been seriously injured in many cases; while such conditions as glaucoma have not been recognised, and ophthalmia neonatorum has been treated with disastrous results. The unchecked diffusion of unrecognised infectious diseases, the cruel tortures inflicted upon sufferers from cancer, and many other incidental effects of quackery which are only too familiar to the medical profession, receive, more or less, the condemnatory notices to which they are entitled.

On the whole the report serves to exhibit, in a striking manner, the propriety of the original request of the General Medical Council for the appointment of a Royal Commission, the only body by which the truth in relation to the subject could by any possibility be brought home to the comprehension of the public, and before which the accuracy of such statements as those made by the medical officers of health could be investigated and established. A belief in quacks and quackery is by no means confined to the poor and the illiterate, and its prevalence is one of the consequences of systems of education in which, as FARADAY said, the cultivation of the judgment has been almost wholly neglected. It is possible that the sale of proprietary medicines is largely among the comparatively well-to-do, for it is manifest that the expense incurred in advertising them can only be rendered remunerative by an extensive sale at high prices, although it is well known that the drugs contained in them are seldom as expensive as the wrapping paper in which they are put up, and that the claims made on their behalf are absolutely without a shadow of foundation. When the quack business advertised as "Munyon's" first raised its head in this country, it was announced that a qualified medical man attended at the office, and that he read and considered the letters in which applicants described their symptoms, in order that he might instruct the packers which of several patent "remedies" they were to send in every case. There actually was such a person (one HART) who, in May, 1898, was consequently removed from the Medical Register for infamous conduct in a professional respect. When his case was heard by the General Medical Council he made a frank confession, from which it appeared that if he took the trouble to read the letters he did not know what the "remedies" contained, or what effects, if any, they were calculated to produce. All this was made public; but years later, under the management of the late Mr. CRIPPEN, who was not amenable to the jurisdiction of the Council, the business was still a going concern, and as far as we know the exposure had little or no effect upon the sales. We have to deal in the matter of quackery with a very easy and lucrative trade; and the willingness of the public to be deceived is such that revelations of the mendacity and greed of the advertising charlatan have but little effect upon the fortunes of that charlatan. The matter is one that well deserves the institution of a Royal Commission, upon which possibly some such legislation might follow as is about to be introduced in Germany.[2]

Annotations.

"Ne quid nimis."

THE ITALIAN CONGRESS ON SEXUALISM.

CONSIDERATIONS, significant alike in their number and their gravity, give special interest to the Congress just held at Florence, "Sulla Questione Sessuale," that is, on the relations of the sexes and their bearing on society. The Congress is the first of its kind yet held in Europe, and its seat is the central city of the Italian kingdom; facts, both of them, intimately connected with the progress of the Latin civilisation and the deteriorating influences to which that civilisation has long been subject. For what is true of Italy is in well-nigh equal measure true of France, both nationalities being confronted with the same problem, how to purify the moral life and how to antagonise the forces which are telling disastrously on the population physically, mentally, and economically. While in the French Chamber the Minister of Grace and Justice, in answer to pressing interpellations, has had to pledge the Government to active measures for the protection of the youth from the enervating literature which panders to lasciviou ness and precocious vice, in the Italian Chamber the Premier, who is also Minister of the Interior, has taken the initiative in penalising the production and sale of that literature, with results already apparent in all the great centres of population, saved as these now are from the spectacle of children of tender years gloating over prints and letterpress appealing to the worst passions. As first steps in a salutary direction these measures are, indeed, meritorious; but they are only the beginning of a reform which must be carried far wider and higher in the social sphere. It was this further development of what may, for convenience, be called the "Anti-sexual Crusade," that engaged the Congress which has just closed its sittings in Florence, and if the "orders of the day" in which the discussions culminated were, at best, but indications of policy, educational and administrative, this much may be said in their favour, that they represent a keen and intelligent appreciation of the evils to be grappled with, and that they formulate recommendations, tentative indeed, and even crude, but eminently useful as suggestive of the duties of the State in the school, in the factory, and in the field. The senator Dr. Pio Foà, of the Subalpine Medical

[2] See p. 1650.

School, opened the proceedings with a paper on "La Pedagogia Sessuale." Starting from the principle that—

"Just as the twig is bent, the tree's inclined,"

he insisted on an early inculcation on the juvenile understanding of the physical constitution, of what "being born" means, of what powers the youth is endowed with, of the responsibilities these imply, and of the dangers of their abuse. This instruction, he contended, should not only come from the mother of the family, but should be conveyed by the schoolmaster or the schoolmistress, who, themselves adequately trained for the duty, can be trusted to use their discretion and their tact according to the young pupil's character, moral and intellectual. From this early or initiatory inculcation Professor Foà would proceed, before the pupil's leaving the higher school and entering on life or on special study, to medical instruction, which, conformably to his experience, can be "popularly" conveyed without infringement on delicacy, while imparting all the youth ought to know, for his own guidance, without needless detail. In association with this, the teacher, male or female, could show the evils of kindred indulgences such as alcoholism, and the results of all animal vice in physical deterioration, leading, for example, to tuberculosis or to one or other of the many neuroses which, in Italy especially, fill the police reports with incidents more or less criminal. These positions of the Subalpine consultant were mainly uncontested by the other interlocutors, except by some who insisted on the instruction being left to ecclesiastics—a recommendation which carried the discussion far afield, and raised the objection that an order vowed to celibacy was certainly not the best medium for conveying the lessons required. Recalled from this digression, the Congress proceeded to the consideration of the factors conducive to the immoral life, particularly in the great industrial centres where the young of both sexes are herded together in an atmosphere, moral as well as material, directly provocative of "animalità," or sexual desire, aggravated, moreover, by the poverty which forces families to live under the narrowest conditions as to space and detachment—a promiscuous crowding which blunts the moral sense and robs vice of half its shame. The turn thus given to the discussions brought the Malthusian doctrine to the front, and this again to the Nemesis that always overtakes the non-natural restriction of families. But by this time the more practical of the topics on the agenda paper had had the preponderance, and the Congress rose after carrying an order of the day fixing Milan as the seat of its next meeting, and nominating a committee, with Professor Foà at its head, for the formulation of a programme in continuation of discussions now seen to be of urgent interest, not in the Latin countries only, but in those of the other civilisations, Teutonic and Slav.

PROTECTION AGAINST TUBERCULOUS MILK.

THE model clauses on the subject of tubercle, in force in several of our large towns, contain *inter alia* a requirement that any dairyman supplying milk within these towns and who has in his herd a cow "affected with, or suspected of, or exhibiting signs of tuberculosis of the udder shall forthwith give written notice of the fact to the medical officer" of the town in which the milk is sold (whether the dairy be within or without the city), "stating his name and address and the situation of the dairy or premises where the cow is." A farmer near Leeds was recently prosecuted by the sanitary authority and a conviction was obtained for not having furnished this notice in regard to a cow in his herd which was suffering from tubercle of the udder. In regard to cows kept within the city it is the practice of the Leeds authority to have them examined by a veterinary surgeon in regard to the conditions of their udders, each dairy being thus visited some four times a year. This power of visiting and examining the cows in the herd only applies, however, to dairies within the city unless the medical officer has reason to suspect the existence of tubercle in the milk-supply. In the case of the particular farmer referred to, a specimen was taken of the milk supplied by him within the city early in July, and found to be infected with tubercle, and it was ascertained that a cow in the herd was suffering from a tuberculous udder, a fact which had not been reported to the medical officer of health. This is the second successful prosecution for non-notification of a tuberculous udder which has occurred in Leeds under the model clauses. The earlier case was that of a farmer within the city who had failed to notify the condition of his cow. The importance of a prosecution of this kind, especially where the milk is supplied from an outside farm, lies in the circumstance that great difficulty is experienced in detecting the presence of tuberculous cows in herds outside the city if assistance be not given by the farmers. In the present case the discovery was accidental and many weeks elapsed between the taking of the sample and the discovery of tubercle, and it is eminently desirable that a skilled examination should be made at once of any cow showing signs of tubercle of the udder. We are informed that had the farmer notified the condition as soon as he purchased the cow he would have obtained, without cost, expert assistance; and had the condition been only suspicious he would probably have been compensated by the corporation for any loss of milk due to the isolation of a cow with a possibly healthy udder. Such compensation is frequently made in Leeds when the diagnosis of tubercle of the udder is still uncertain, the corporation preferring to keep any suspected cow out of the milk herd until it is assured that the disease is not tuberculous. Under the present law it is only cows that have tuberculosis of the udder which can be excluded from the milk herd. The third interim report of the present Tuberculosis Commission shows clearly that a tuberculous animal, not suffering from manifest disease of the udder, may from time to time yield milk containing tubercle bacilli.

OPHTHALMIA NEONATORUM.

SINCE our previous remarks on this subject[1] a report recently received from the medical officer of health of the borough of Paddington provides further and welcome evidence of aroused interest in the subject amongst the public bodies concerned. Still more striking is the decision of the London County Council at its meeting on Nov. 8th to enforce the powers granted by the Public Health (London) Act (1891), making ophthalmia neonatorum compulsorily notifiable within the administrative County of London. In this most essential respect London is but following the example initiated in the Potteries, chiefly through the agency of Mr. H. H. Folker, and widely followed in more than 50 sanitary districts in various parts of England. Dr. R. Dudfield's report to the public health committee of the borough of Paddington contains an admirable *résumé* of the subject, cogently setting forth the need for notification and more efficient treatment on the basis of statistics derived from recent literature, but Mr. Sydney Stephenson's excellent monograph on Ophthalmia Neonatorum seems to have escaped attention, for it is not quoted in the scanty bibliography appended to the report. Notification in this disease is attended by peculiar difficulties which are well set forth in Dr. Dudfield's own words: "Notification to be complete must be on a different system to

[1] THE LANCET, July 23rd, 1910, p. 245.

that in force for the dangerous infectious diseases, with respect to which a doctor's certificate is the only form in practical use. Confinements being attended by three classes of persons, (*a*) medical practitioners, (*b*) certified midwives, and (*c*) 'handy women' and relatives, it is necessary that the duty of notification should be imposed on any person—irrespective of status and training—attending the mother during and after her confinement. In other words, the notification system should follow the lines of the Notification of Births Act rather than those of the Public Health Act. The change in system should not deprive professional men (and women) of their fees for certificates. Inasmuch as cases of ophthalmia neonatorum would under such system be reported by lay persons, the description of the disease must be in simple terms and be so framed as to cover even the (apparently) slightest and simplest form of eye trouble. Anything short of such a wide definition would result in cases of ophthalmia in children not under the care of a medical practitioner or certified midwife being unreported, and a plea of ignorance of the nature of the disease being put in by the 'handy woman.' It is among the cases attended by the last class that the disease is most likely to occur. Further, such notification should not involve all the restrictions imposed with respect to the dangerous infectious diseases by the Public Health (London) Act, 1891. Such principle has already been recognised with regard to measles and pulmonary consumption." The difficulties of efficient treatment are even greater. That they are well worth facing and combating is shown by the statistics of Mr. E. V. Greatbatch, chairman of the North Staffordshire Joint School Authority for Educating Blind and Deaf Children. In the five Pottery towns and Leek 75 cases were reported in the nine months to the end of last June. Of the 75 infants 61 recovered with full sight, 7 lost one eye each, and 2 became totally blind. Mr. Greatbatch points out that "an average blind person cannot earn more than one-half of the amount earned by a sighted person at the same occupation," and Lord Lichfield has estimated the cost of education of a blind child at £50 compared with £30 for the education of a normal child. These figures tell their own story, and the day cannot long be distant when the disease will be universally notified.

THE CHILDREN OF THE STATE IN HUNGARY.

THE methods employed in Hungary for the care of those who would be termed in England "pauper children" may be commended to all interested in social reform, and in particular to local administrators concerned with the care of children and the feeble-minded. It is always a shock to British pride to find ourselves distanced in the race for better social legislation, and to those unacquainted with Hungary it may come as a surprise to find existing in that country a system of public care for destitute children conceived in a spirit above anything as yet achieved in England. The class of children for whom provision is made appears to include not only those who in our country come under the head of "destitute," but also the permanent cripples and feeble-minded, idiotic, and the morally defective. The number of children dealt with is not large, but is rising rapidly; in 1903 it was 21,000 and in 1908 it was 44,000, out of a total population of about 20,000,000. The scheme adopted divides the country into 17 administrative centres, or "asiles," which are placed in large towns. Each centre includes homes or hospitals for acute cases, for chronic cases, and for sucklings, while in Budapest and one other city are small hospitals for operative surgery and for ophthalmic cases. With these exceptions all the asylums are constructed on the same model with trifling variations in plan and arrangement. Each has a non-medical executive head, who is responsible for the finance of the centre, and under him a steward. A controlling physician is attached to each, having an assistant who is usually a lady doctor. The children who are not invalided or otherwise disqualified are boarded out as soon as possible. This is effected in selected villages under selected foster-parents without regard to locality of birth or distance. The children and their custodians are carried free on the State railways in reserved compartments over a network of more than 15,000 miles of rail, and in 1908 over 46,000 tickets were issued for this purpose. The executive in each centre supervises the colonies strictly, and provides carefully for the future of each child on his discharge from tutelage. Each child on admission to the "asile" is accompanied by a schedule of health, including such particulars as previous mode of nourishment, condition of vaccination, and other particulars; the family history furnishes not only statements as to such ordinary points of inquiry as syphilis, insanity, or tuberculosis, but contains remarks as to hereditary neurasthenia, perhaps the first official recognition of "Weary Willie" as an important hereditary factor in the State. This contrasts strangely with the haphazard lack of information afforded to district medical officers in most unions in our country when they first visit boarded-out pauper children. The care exercised in the selection of wet-nurses, and the provision and control of milk, are also admirable examples of minute method.

OBESITY IN RELATION TO DISEASE OF THE DUCTLESS GLANDS.

THE question of the functional interrelation of the various ductless glands is curiously complex. It is scarcely an exaggeration to say that with the publication of each fresh clinical record our uncertainty is increased rather than diminished. One writer describes a pineal "syndrome" of changes in the body tissues and sexual impairment associated with a pineal tumour; the next reported cases of pineal tumour reveal no such changes. A number of cases of sexual infantilism in connexion with pituitary disease have been recorded, but precocious sexual development related to disease of the adrenals seems equally substantiated. In view of all this uncertainty certain writers have begun to describe "polyglandular syndromes" as though our knowledge were thereby added to. Analysis must precede synthesis. Let us take for examination the question of abnormal development of fat, both subcutaneous and within the body cavity. Many women become stout after the menopause, and superficial consideration will at once associate this change with defective ovarian secretion. As if to bear out this view, we remember that many domesticated animals put on fat after castration, especially the female. This is true in particular of the cow (Charlier). Further obesity after ovariotomy is well enough known (Strümpell). Launois and Cleret, on the other hand, have recorded a case of adiposis associated with precocious sexual maturity, and in this instance the temptation is to assign the change to some suprarenal defect. Again, we know that, apart from the subcutaneous changes that characterise myxœdema and give it its name, there is often an abnormal increase of fat, and the attribution of myxœdema to thyroid deficiency meets with universal acceptance. The condition of so-called "feminism" in the male, where the secondary sexual characteristics are those of the opposite sex, including abnormal development of the breasts and of subcutaneous fat, undoubtedly occurs where there is reason to suspect pituitary changes, but many of these patients have double testicular atrophy. Is this a cause or a consequence? The fact is that medical science has simply touched the fringe of the subject. Thyroid, testicle, ovary, suprarenal, and pituitary in turn seem to be incriminated. Yet we cannot

overlook the fact that it is more particularly in pituitary disease that fatty changes are to be expected. Launois and Cleret have published an interesting case in point. A woman, aged 33 years, enormously stout, with cyanosis of the face and hands, menstrual irregularities, and certain cerebral symptoms, was found post mortem to have a small tumour of the pituitary body involving the glandular part of the organ; the nervous part was normal. The tumour was an epithelioma consisting of acidophil, amphophil, and basophil cells, with others badly staining and others still atypical, voluminous, and multinuclear. There was no acromegaly. To attribute the obesity to the results of this tumour growth is, of course, most natural, but the thyroid was sclerosed and in a state of hypothyroidism, while the ovaries were also sclerosed and cystic. There are numerous recorded instances of "degeneratio adiposo-genitalis" (distinct from "feminism") in pituitary disease, but is the adiposis secondary to the hypophyseal or the testicular defect, or to both? Perhaps the least equivocal case is one due to Madelung. A perfectly normal and healthy child, aged 6 years, was shot in the head at a distance of 8 or 10 feet and fell unconscious. After four days of coma consciousness began to return. Shortly thereafter she began to show certain psychical symptoms, and, in addition, to put on fat rapidly. Three years later she was very fat indeed. X ray examination showed clearly that the projectile was lodged in the sella turcica. If we may argue from this case we may assume that obesity may certainly be of primary hypophyseal origin, and where the lesion is polyglandular perhaps there is a reciprocal disturbance of metabolic balance, so that it becomes difficult, if not impossible, to assign the clinical symptoms to direct defective function of any one gland in particular, at least until much more is known of the subject.

INFANTILE BERI-BERI.

MUCH light has recently been thrown upon the etiology of beri-beri by the researches of Fraser and Stanton in the Federated Malay States and by other investigators elsewhere; but a new problem in connexion with this disease has recently been raised in a paper read at the biennial meeting of the Far Eastern Association of Tropical Medicine, and published in the July number of the *Philippine Journal of Science*, by Dr. Allan J. McLaughlin, assistant director of health for the Philippine Islands, and Dr. Vernon L. Andrews, assistant professor of bacteriology and pathology in the Philippine Medical School. These observers have been making a study of the causes of the excessive infantile mortality in Manila, and their inquiries have led them to the conclusion that a large number of infants die from a disease presenting a definite pathological picture for which they say no better name can be given than "moist beri-beri." The total deaths certified from this cause in children under one year of age in Manila for the fiscal year 1908–09 amounted to 595. But this does not, it appears, represent the full mortality from the disease. Post-mortem examination of a number of cases certified as due to convulsions, bronchitis, and broncho-pneumonia demonstrated that the cause had been wrongly given and that death was due to "moist beri-beri." In a series of 219 necropsies on infants dying under one year of age no fewer than 124 were found to present the characteristic appearances of this disease. The main post-mortem conditions observed were: (1) dilated and hypertrophied right heart; (2) congestion of all internal viscera; and (3) anasarca. The investigators did not themselves see the cases during life, but were dependent on others for the clinical histories, which, however, in a number of instances were meagre and not always trustworthy. The symptoms noted were chiefly dyspnœa and cardiac embarrassment with general œdema. The illness was said in some cases to have lasted only a few hours, seldom more than two days, but it is possible that the ailment had existed longer than this, perhaps from birth. It is a very noteworthy fact that nearly all the cases examined were under two months of age, and, what is still more surprising, they were almost without exception *breast fed*. It is distinctly stated that in none of the cases in which a necropsy was made was any rice or other artificial food found in the baby's stomach. In nearly every instance the mothers themselves presented some symptoms of beri-beri, and a number of them admitted that they had already lost other infants who had suffered from a similar illness. The etiology of "moist beri-beri" has not yet been fully investigated, but there seems to be some suggestion that a relationship exists between this malady and the poor quality of the milk yielded by Filipino mothers. This condition of the mother's milk, which is probably deficient in certain essential elements necessary for the normal nutrition of the infant, is due no doubt to the physical condition of the native mother, who, as a rule, lives in chronic poverty with consequent insufficiency of proper food, more particularly during the periods of pregnancy and lactation. Nevertheless, Dr. McLaughlin and Dr. Andrews say that they cannot overlook the possibility of an ultra-microscopic organism being concerned in the production of the disease. It is, however, proposed to make further investigation into "moist beri-beri," with detailed clinical observation of cases, preferably in hospital, where laboratory and biological tests can be readily applied, and where examination of the patient's body fluids and excreta can be carried out. Although the occasional occurrence of beri-beri in infants is mentioned in works upon the disease, we gather that this has hitherto been regarded as rather exceptional. Some ten years ago Professor Hirota of Tokyo described a disease discovered by him in infants brought to his clinique for treatment, and which he named "infantile beri-beri." The native medical practitioners in Manila appear to have become acquainted with the views of the Japanese professor and during the past few years have been certifying deaths as due to this cause. The ailment, we learn, is not often seen by the American physicians in the Philippine Islands, since the poor people are attended, if attended at all, by Filipino medical men exclusively. So far as we are aware no attempts have been made, until the inquiry undertaken by Dr. McLaughlin and Dr. Andrews, to confirm the diagnosis of infantile beri-beri by post-mortem examinations. It is greatly to be hoped that the further inquiries which are to be carried out will succeed in elucidating the etiology of this form of beri-beri, which has become so disastrous a factor in the excessive infantile mortality met with in Manila.

PUBLIC HEALTH IN SHANGHAI.

Dr. Arthur Stanley, medical officer of health of Shanghai, draws attention in his annual report to the municipal council of Shanghai for 1909 to the satisfactory state of the public health for the year. The native population was calculated at 550,000, and the foreign population for the same period was calculated at 15,000; the death-rate among the former per 1000 during the year was 15·1, and among the latter 16·7. Tuberculosis heads the list of fatal diseases both among foreigners and natives and calls for a measure reducing the overcrowding which is so apparent in the settlement. Beri-beri is now a prominent cause of death among foreigners, coinciding with the increased Japanese population. Plague-infected rats were found throughout the year, but there were no human cases. The public measures most needed are an extension of the health office and laboratory buildings; the completion of the

isolation hospital to include accommodation for cases of tuberculosis among foreigners; and the establishment of health stations in each sanitary sub-district. The Shanghai Pasteur Institute for anti-rabic treatment has done good work; since it was opened in 1899 268 persons have received treatment; during the year under review 28 cases have been treated with success. The hospitals have all been satisfactory. The police hospital for the Sikh police from India reports that tuberculosis continues to be the commonest cause of invaliding out of the service. Venereal disease accounts also for a relatively large proportion of the sickness occurring in this force.

THE TREATMENT OF AORTIC ANEURYSM BY THE INTRODUCTION OF WIRE AND THE PASSAGE OF A GALVANIC CURRENT.

THERE are few morbid conditions which seem less open to heroic treatment than aneurysm of the thoracic aorta. Any direct attack upon so formidable a disease of so vital a structure appears only to invite disaster. Nevertheless, the desperate nature of the malady offers some justification for the adoption of any method of treatment which holds out a prospect of substantial improvement in the patient's condition. Doubtless it is this motive which has led physicians to take the risks that are involved in the introduction of wire into the sac and the passage of a galvanic current through the wire. Professor A. A. Eshner has been able to collect and tabulate records of no less than 36 cases in which this treatment was adopted, in addition to two cases of his own, which were published in the *American Journal of the Medical Sciences* for October. He considers that in the vast majority of these cases the intervention was justified by prolongation of the patient's life and amelioration of symptoms. It is contra-indicated in fusiform aneurysm. The technique, he says, is simple; in his cases, as apparently in other cases, local anæsthesia sufficed. Under aseptic conditions a hollow needle of gold, silver, or platinum, insulated except at its tip, is introduced to some depth into the most prominent part of the sac, and through this gold or silver wire is fed into the sac till it is filled. Usually 10 or 12 feet of wire will suffice. Should the wire kink before the sac is full the needle may be withdrawn and re-inserted in another place, or one or more additional needles may be used. The end or ends of wire are connected with the positive pole of a battery, the cathode being placed upon the back; a current rising gradually from zero to 60, 80, or 100 milliampères and as gradually decreasing is then passed through for an hour to one and a half hours. The hæmorrhage is limited to a spurt of blood at the introduction of the needle. Pulsation is noticed to diminish with the passage of the current, if not before, and a similarly immediate relief from pain and dyspnœa is experienced. From Professor Eshner's table it appears that in 19, or exactly half the cases, death followed within a month of the wiring, the best result being that obtained by Professor Rosenstirn, whose patient lived nearly 12 years after the operation. One of Professor Eshner's own patients lived four weeks, the other a little over seven months. In both cases post-mortem examination seemed to prove that the operation had not only done no direct harm, but also that it had very materially expedited the progress of clotting within the sac. The impression left upon the mind by a perusal of Professor Eshner's careful tabulation is that the method will never have a wide field of usefulness, and that its use is scarcely justifiable except in cases of sacculated aortic aneurysm so far advanced that there is no hope of spontaneous cure.

FREIBANK MEAT.

THE December number of the *Contemporary Review* contains an article on "Cheap Meat," which is likely to attract considerable attention at the present time. The writer, Miss Smith Rossie, there tells of her observations at a German Freibank, and gives forcible expression to her dislike of the kind of meat which she understood to be sold at these establishments. We have no concern with the political purpose of the article, but we would suggest that it would be well for those whom it interests to study any good account of the general system of meat inspection in Germany before following Miss Rossie too far in her commiseration with the poorer classes in Germany by whom such meat is eaten. The provision of Freibanks is not essential to the imperial meat inspection system, although they have been established for many years in a considerable number of German towns. At the public abattoirs of these towns, meat which after examination is judged to be only conditionally fit for food ("bedingt tauglich") by reason of disease not calling for total condemnation, together with certain meat of poor quality, passes to the Freibank for special sale. Before the diseased meat is allowed to be sold it is treated, as circumstances require, by removal of diseased portions, by prolonged freezing and salting, or by sterilisation in digestors. From the last annual return of meat examined in the slaughter-houses in the German Empire, it would appear that less than 0·5 per cent. of the total meat dealt with was classed as "bedingt tauglich." Although Freibank meat is readily sought after by many people of the poorest class in places where it is available, it must not be regarded as the staple or even as a usual food of the German working class in general. Probably many working class families in Germany share Miss Rossie's aversion to eating meat derived from diseased animals, no matter how it has been treated. The existence of such natural objections, however, is fully recognised by the German law, which makes stringent provision against the sale of Freibank meat to restaurant-keepers, sausage-makers, and other traders, and prevents it from becoming an ordinary article of commerce. The consumer must fetch it from the Freibank, and need not go there unless he chooses. As regards the wholesomeness of Freibank meat, it may be said that where, as generally in Germany, a sufficient staff of trained experts is employed, and the arrangements for handling and treating the meat are efficient, the danger run by the consumer must be of very small proportions. It is impossible, perhaps, to say that it is entirely removed. It must, for example, often be doubtful whether meat sold without sterilising after removal of tuberculous lesions is in reality free from infective ability, while in the case of meat which is sterilised it is still sometimes necessary to remember the possible presence in the meat of bacterial toxins which are highly resistant to heat. Under English administration practically all meat of the "bedingt tauglich" order which came under the notice of our sanitary officers would be condemned outright, and if we examined all our meat and discovered disease in it with the thoroughness of the Germans, we might congratulate ourselves that we have no use for a Freibank, and that the poorest of our population would probably be strongly prejudiced against such an institution. Unfortunately, however, there are facts concerning the disposal of diseased meat in this country that will not allow of such complacency. From the public health point of view, diseased meat which in England may reach the consumer by way of the "slink" butcher or dealer is hardly to be preferred to that which in Germany is sold openly and as a class apart after expert examination and treatment.

GANGRENE OF AN OPERATION WOUND DUE TO THE COLON BACILLUS.

A MILD infection of an operation wound with the colon bacillus is not of infrequent occurrence in abdominal surgery. In the *Journal of the American Medical Association* of Oct. 29th Dr. E. A. Babler has reported a case, which so far appears to be unique, in which necrosis was due to this cause. A man, aged 45 years, was admitted into hospital on May 14th, 1910. He had suffered frequently from malaria. Three days previously, while tying his shoe, he was seized with a stitch in the right side, and the pain had been more or less persistent since the onset. On the next day he had a chill which was followed by fever. On admission he complained of severe pain in the region of the right ninth intercostal space. He was anæmic and emaciated and had an anxious expression. The respirations were somewhat shallow and accelerated. There was a slight cough, which caused pain in the right side. Over the right axilla harsh inspiration and blowing expiration were heard, and throughout the chest numerous dry râles. Vocal resonance and fremitus were increased over the middle and lower lobes of the right lung. A friction rub was heard close to the right costal margin on both inspiration and expiration. Over the lower lobe of the left lung there was relative dulness. On May 16th a leucocyte count gave 19,100, and on the 30th 24,800. On June 5th the number had dropped to 10,700. There was bulging in the right hypochondrium. On June 23rd subphrenic abscess was diagnosed, and on the 24th an incision 2 inches long was made under cocaine anæsthesia in the anterior axillary line over the most prominent part of the bulging mass, and about two quarts of fluid resembling the pus of a hepatic abscess were evacuated. The abscess was found to be subphrenic, although the palpable liver surface was roughened. The pus contained the colon bacillus in pure culture and showed no liver cells. A double drainage-tube was inserted. The discharge from the wound was profuse. On July 18th the margins of the wound became very red and somewhat swollen. The inflammation spread. On the 23rd the margins of the wound became necrotic and discharged grumous substance, which yielded a pure culture of the colon bacillus. On August 10th an autogenous culture of the bacillus was injected, but was followed by a rise of temperature and seemed to make the patient worse. The area of skin destruction became more and more extensive until at the time of death, which occurred two months after the operation, an area of the size of the palm was involved. At the necropsy it was found that the floor of the abscess was formed by the base of the liver and the roof by the base of the lung. The greater portion of the intervening diaphragm was destroyed.

HELIOTHERAPY IN TUBERCULOSIS.

IN an annotation in THE LANCET of Nov. 12th, p. 1435, we called attention to the remarkable results obtained by heliotherapy (the prolonged exposure of the diseased part to the sun's rays) on the Mediterranean littoral. In the *Boston Medical and Surgical Journal* of Oct. 27th a special correspondent contributed an interesting article which shows that similar results can be obtained in the Swiss mountains. At Leysin, which has an altitude of 1200 to 1500 metres, Dr. Rollier has established three sanatoriums and attained results which have attracted widespread attention. This locality has certain peculiarities which render it unusually suitable for heliotherapy—absence of wind, intense solar radiation, and great purity of air. Having found that Dr. Bernhardt of Samaden in the Engadine was treating sluggish wounds of all sorts by solar radiation, Dr. Rollier began little by little to apply this method to the treatment of surgical tuberculosis, and has found it to be successful. The majority of the patients are children suffering from fungous arthritis, Pott's disease, tuberculous arthritis, tuberculous glands, and tuberculous lesions of the skin. Dr. Rollier does not neglect the usual methods of treatment—injections, plaster jackets, X rays, and so on, but combines them with heliotherapy. His sanatoriums face the sun and are abundantly provided with balconies and open roofs on which the beds are wheeled out. The patient's entire body, front and back, is exposed to the sun in winter as well as in summer, during a time which varies with the state of health and state of training. The patient must be apyretic or nearly so. Dr. Rollier begins by exposure of short duration. The period and extent of the exposure are gradually increased until the whole body is exposed for as much as six or seven hours daily. The startling sight may be seen of a lot of naked brown children, some wearing plaster jackets, playing on beds in the brilliant sunshine in midwinter. Hats and screens are used to keep the sun off the face. Even in winter the temperature in the sun is high (113° to 122° F.). Moreover, there is almost total absence of wind. But for this the treatment probably could not be carried out. One of the first results of heliotherapy seems to be the disappearance of the pain—in coxalgia, for example. Tuberculous glands are either absorbed spontaneously or soften, and after one or two evacuating punctures disappear. Dr. Rollier argues that for heliotherapy a mountain climate is much preferable to the lowlands, where many of the sun's rays are absorbed by the dust of the atmosphere. In spinal or hip disease the surgeon generally regards ankylosis in a good position as the best result, but Dr. Rollier claims to obtain a restitution *ad integrum* with free movement. This is obtained even in some cases of open lesion in adults. It must be borne in mind that the treatment is a prolonged one and may take two years or more.

THE Edward Medal of the Second Class has been awarded to Mr. Edwin Arthur Dando, M.R.C.S. Eng., L.R.C.P. Lond., for courage shown on the occasion of the underground fire which occurred at the Russell Colliery, near Dudley, on April 17th, 1910.

THE Bradshaw Lecture of the Royal College of Surgeons of England will be delivered on Wednesday next, Dec. 7th, at 5 P.M., in the theatre of the College, by Sir A. Pearce Gould.

THE discussion on Dilatation of the Heart and Heart Strain, opened by Dr. J. F. Goodhart with the paper which we publish this week, was adjourned until Monday next, Dec. 5th, at 8.30 P.M., when it will be resumed by Dr. William Collier, of Oxford, followed by Dr. Samuel West, Dr. A. Morison, Dr. F. J. Poynton, Sir John Broadbent, Dr. C. W. Chapman, Dr. F. Parkes Weber, and Dr. Leonard Guthrie.

THIRTY-SECOND BALNEOLOGICAL CONGRESS, BERLIN.—This congress will be held in Berlin from March 2nd to 6th, 1911. Several papers have already been promised by well-known authorities in balneology. It is requested that notifications of further papers which it is intended to offer should be sent before Dec. 31st, 1910, to the Secretary-General Geheimrat Dr. Brock, Berlin, N.W., 52, Thomasiusstrasse, 24. The meetings of the congress will take place in the lecture-hall of the Polyclinic Institute of the University, Ziegelstrasse 18/19. In connexion with the congress there will be an exhibition of medical apparatus and preparations.

THE LONDON COUNTY COUNCIL AND A SLUM CLEARANCE SCHEME.

THE London County Council to-day has few graver problems to deal with than the housing question, which was first propounded by philanthropists in the middle of the last century. As matters stand, the value of house property and building sites in those central, overcrowded, and insanitary districts which we classify as slums has increased, and is increasing, with the result that such work as has been done in purchasing, demolishing, and rebuilding has been costly and has not brought any direct profit to those charged with it. At the same time, every improvement accomplished, however long delayed it may have been, is a matter for congratulation. The London County Council having abstained from carrying out any clearance schemes for nine years has now put itself in a position to face the struggle again, and should do so with the support and goodwill of London's citizens, although we may be allowed to call attention to the long period of consideration which has preceded action.

The Areas to be Dealt with.

At a meeting of the Council which was held on Nov. 8th a scheme for the Housing of the Working Classes Committee was brought up and agreed to after some discussion; it provided for the clearance of the slum areas known as Tabard-street and Grotto-place, Southwark, and Crosby-row, Bermondsey. It is proposed that the Council should acquire 13½ acres, mainly to the north of Tabard-street, 1½ acres constituting the Grotto-place area, and about an acre on the east side of Crosby-row; that the buildings now standing should be cleared away, that about 5 acres of the Tabard-street area should be reserved from building and maintained as an open space, that another portion of the available ground should be let for commercial purposes, and that on the residue should be erected dwellings capable of accommodating not less than 2450 persons. Some interesting facts were referred to by Major Boscawen, chairman of the Housing Committee, in introducing the scheme. The expenditure of the Council and of its predecessor, the Metropolitan Board of Works, upon clearances of a similar kind has amounted to £2,440,000, of which the sum of £1,349,000 remains as a debt. The slums which form the subject of clearance schemes do not exist, as a rule, on the estates of the great landlords who are so frequently denounced by popular orators in this connexion, an example in support of this being found in the comparatively small areas described above which are divided up among 105 freeholders and 60 leaseholders. The following figures were cited by Major Boscawen with regard to the Tabard-street area upon the authority of Mr. Charles Booth. The proportion per cent. of those living in comfort and in poverty respectively is estimated for the whole of London at 69·3 in comfort and 30·7 in poverty; for the whole of Southwark the corresponding figures given are 52·4 and 47·6, a balance being still left on the side of comfort. The Tabard-street area, however, has 80·9 per cent. of its inhabitants living in poverty and in comparative comfort only 19·1. Its death-rate at the time of the compilation of the statistics given was 36·8 per 1000, as against an average of 14·9 for the rest of London, its death-rate from phthisis being 3·88, as compared with London's 1·44; and its death-rate from infectious disease was estimated by the same statistician to be six times greater than that of London.

In these circumstances it may well be understood that the Council, having had a scheme laid before it by its responsible committee, determined to proceed with it at once without waiting for such possible variations of price and depreciations of estimated value as may be expected to result from recent financial legislation. We note, however, that Sir John Benn, while he disavowed any desire for delay in dealing with the plague spot under the Council's consideration, expressed the opinion that the new valuation, had it been waited for, would have reduced the price to be paid by £100,000. If this estimate be at all correct, the measure referred to will at least facilitate the rehousing of the poor.

We note that one of the county councillors who took part in the discussion of its Housing Committee's report attributed blame to the sanitary authorities of the districts involved for the conditions rendering drastic interference necessary. Certainly the Southwark borough council has been fully informed through the reports of its medical officer of health for many years as to the insanitary state of the slums about to be swept away, and the London County Council has also no doubt had the same source of information open to it. We find, for example, pointed reference to Grotto-place in the report made by Dr. F. J. Waldo, since appointed coroner for Southwark, so long ago as 1897. Its courts are so narrow that the inhabitants of opposite houses can shake hands with one another by leaning out of their front windows, and he then classified it as an unhealthy area, together with two other sites known as King's Bench-walk and Webber-row. Some of the buildings then and now objected to were formerly one-roomed houses, since converted by partitions so as to consist of two rooms, which originally were built for the accommodation of debtors committed to prison by the Court of King's Bench. In or about 1900 the London County Council dealt with King's Bench-walk and Webber-row, but left Grotto-place untouched on the ground that its death-rate was not so high as that of the other two districts. In 1900 also Dr. Waldo had under consideration for purposes of reform a group of streets, including part of Tabard-street, all of which have hitherto escaped interference. At the same time, if his reports dealing with Tabard-street, Grotto-place, and their surroundings have not borne fruit hitherto, he may take credit for having initiated in 1894 the policy which got rid of the slums once known as Brent's-court, Eve-place, Redcross-court, and Maypole-alley, and for the opening of Little Dorrit Playground for children opposite to the site of the old Marshalsea Prison upon the ground once occupied by Falcon-court and Birdcage-alley.

How the Sites will be Utilised.

The question of how sites so expensively acquired are to be utilised is one of some difficulty. They can be made into open spaces, workmen's dwellings of a sanitary character can be built upon them, or they can be let for commercial purposes and at a rent proportionate to their commercial value. Often there is no open space for use as a children's playground within a mile or two on the one hand, and on the other it must be remembered that a clearance scheme displaces a number of poor persons who go to increase the overcrowding elsewhere.

Presumably it is the more decent people elsewhere inconvenienced by such additional overcrowding who ultimately find their way into the new buildings, for the model dwellings erected upon slum sites do not attract the former inhabitants of the demolished rookeries, and the County Council does not profess to build for thieves and prostitutes, but to provide wholesome living accommodation for those who desire to live comparatively wholesome lives. The converted districts, in short, have to forget their past, although it may be instructive to recall it with regard to some of those named. In 1892 a passage leading to a house, now demolished, which abutted upon Falcon-court, was the scene of the brutal murder of a medical man, Mr. William Peter Kirwan, who was found there dead, having been assaulted and strangled and robbed in broad daylight. Three men were convicted of manslaughter and sentenced to long terms of penal servitude for this crime. In Redcross-court, also mentioned above as having already been reformed, was a common lodging-house, the deputy of which was an ex-convict, and which nightly sheltered at least 100 thieves and prostitutes. The crimes occurring in such a place were almost impossible to bring home to those who committed them. To go back to earlier days, in 1866 the last death from Asiatic cholera occurring in the parish of St. George the Martyr, Southwark, took place in Redcross-court, and it may be mentioned that this parish was credited with 242 deaths from typhus in the years 1863–65, without counting those of its inhabitants who entered hospitals outside its boundaries and died in them.

In such circumstances the duty is to provide a certain amount of decent housing accommodation, including, if possible, some substitute for the street as a playground for the young, and to do so with reasonable regard for the cost of what is done at the ratepayers' expense. The London County Council, as it will be observed, has decided to combine these objects in its latest scheme. It proposes to give an open space, perhaps not so beneficial so far as children are concerned as two of smaller size; to provide dwellings

for a number of persons equivalent to half of those displaced; and to diminish its loss on the transaction as far as possible by allowing the erection of warehouses upon part of the site acquired. We regret the necessity for the warehouses, and we might have desired to see an open space at Grotto-place, but we cannot ignore the need for economy when so much more remains to be done. The more the provision of living and travelling accommodation enables the humbler class of worker to live at a distance from his work the better it will be for his family.

REPORTS ON PLAGUE INVESTIGATIONS IN INDIA

ISSUED BY THE ADVISORY COMMITTEE APPOINTED BY THE SECRETARY OF STATE FOR INDIA, THE ROYAL SOCIETY, AND THE LISTER INSTITUTE OF PREVENTIVE MEDICINE.[1]

The Experimental Production of Plague Epidemics among Animals.

IN two previous series of experiments the Commission showed that healthy guinea-pigs did not contract plague when kept in close confinement with plague-infected guinea-pigs so long as fleas were absent, and that in the presence of fleas the disease readily spread from the infected to the healthy animals. It was objected by Gottschlich that the results did not necessarily apply to rats and could not be used as an argument bearing on the question of the mode of propagation of plague among rats in nature. The present paper details experiments showing that exactly the same results are obtained when guinea-pigs are replaced by rats. Healthy wild Bombay rats were confined in small huts with other rats which had been inoculated with, and subsequently died from, plague; in one hut in each experiment abundant fleas were present, in the other there were no fleas. Considerable difficulty was experienced in securing the complete freedom of the control rats and huts from fleas, but the following results were obtained in eight experiments in which this condition was obtained:—

Results of Experiments with Rats (Inoculated and Uninoculated) put into Huts containing Fleas and into Huts containing no Fleas.

—	Rats put into huts containing fleas (about 24 fleas per rat).	Rats put into huts containing no fleas.
Inoculated rats	70	84
Died from plague	63 = 90·0%	73 = 86·9%
Uninoculated rats	125	125
Died from plague	57 = 45·6%	0

In seven other experiments the control huts were not altogether free from fleas, one or two fleas being found in each. In these 105 healthy rats were exposed to possible infection from 78 rats dying from inoculated plague and only one died from plague. In the corresponding huts in which fleas were more abundant 64 inoculated rats died while living with 105 healthy rats, and of these latter as many as 38 (36 per cent.) took plague and died. These experiments, therefore, support the view that the rat flea is of paramount importance in the dissemination of plague among rats. A few rats dead from plague were eaten in both groups of huts, but the figures show that this was of no account in spreading the infection.

Resolving (Chronic) Plague in Rats.

The abscesses in the viscera, especially in the spleen and in the peripheral lymphatic glands, some of which contain living plague bacilli, which have previously been described as "chronic plague," are shown to be plague lesions in the process of healing; the name "resolving plague" is more appropriate. These appearances have been found frequently in rats in Belgaum and Poona, and a re-examination of Bombay rats shows that they also occur there; they had previously been found only in Punjab villages. It is also shown now that they are found most frequently towards the close of, and immediately after, the acute plague epizootic. The lesions in the spleen and mesenteric glands often ultimately find their expression in peritoneal adhesions. No evidence has been obtained that these abscesses are of actual importance as a source of acute rat plague.

On the Spread of Epidemic Plague through Districts with Scattered Villages.

In large towns, such as Bombay, the infection of plague is carried over from one epidemic to the next by the persistence of acute plague among the rats accompanied by a few human cases. But in small communities each annually recurring epidemic is separated from that preceding by an interval more or less prolonged, in which plague cannot be found in either rats or men. It is obviously an important practical question in such places whether each successive epidemic has its origin from remnants left over *in situ* from the previous epidemic, or whether on each occasion infection is due to plague bacilli being brought in afresh from outside. Towards the solution of this question of "recrudescence" or "importation" a great mass of data has been collected and discussed by Major George Lamb relating to the plague history over a period of four or five years of more than 2500 villages in the Punjab and United Provinces. Dr. Greenwood, statistician to the Lister Institute, contributes the first part of an analysis of these data by statistical methods. Their chief conclusions are: (1) that the occurrence of epidemics among the villages is not a chance distribution; (2) that the size of the village is an important factor, the larger villages being more liable to attack: in two out of the three districts investigated the distribution of epidemics among villages of equal size has not been shown to be other than random; (3) that the fact of a village having been infected in any one epidemic does not render it more liable to be infected in the next following epidemic; (4) that a study of the distribution on maps of infected villages month by month suggests a spreading-out of infection from various centres. On the whole, therefore, the authors conclude that importation is a more important factor than recrudescence in the annually recurring epidemics in these villages.

Observations on Plague in Belgaum, 1908–1909, and in Poona, 1908–1909.

These two papers contain the result of a close inquiry, lasting in each case for a full year, into the occurrence of plague in rats and men in Belgaum and Poona, together with studies of the rats and fleas. The facts collected under the former heads do not lend themselves to summary treatment. With regard, however, to the fleas, it was ascertained that there was a definite seasonal variation in the prevalence of fleas which is closely correlated with the seasonal prevalence of plague. Thus—

Month.	Belgaum.		Poona.	
	Plague deaths, average per week.	Average number of fleas per rat.	Plague deaths, average per week.	Average number of fleas per rat.
January...	9	5·9	22	5·0
February	6	7·7	5	4·8
March	1	5·9	1	4·4
April	0	5·6	1	2·5
May...	0	3·9	1	2·4
June	1	7·4	0	2·2
July	2	14·5	0	4·5
August	9	16·3	2	8·8
September	28	16·9	28	9·1
October...	23	15·2	102	7·6
November	23	13·6	89	7·2
December	19	8·3	46	6·7

These results therefore fully confirm the data already obtained in Bombay, Kasel, and Dhand. The climatic conditions in Belgaum and Poona are quite different from those which prevail in Bombay. This strengthens the conclusion

[1] Journal of Hygiene, vol. x., No. 3, pp. 313-568. Accounts of previous reports will be found in THE LANCET of Nov. 3rd, 1906, p. 1233; July 27th, 1907, p. 246; and Jan. 25th, 1908, p. 253.

that the prevalence of plague depends upon the prevalence of fleas rather than that both phenomena are independently conditioned by circumstances of temperature, &c. The present data suggest a connexion between the atmospheric humidity and flea prevalence. In Belgaum an interesting census was made of the various animals living in the native houses; there was no evidence that cats afforded any protection For the valuable discussions of the causes of the rise and fall of epidemic plague in these towns, the original memoirs should be consulted.

First Report on Investigations into Plague Vaccines (by S. Rowland).

Dr. Rowland, of the Lister Institute, working at Elstree under the direction of the Advisory Committee, has attempted to isolate from plague bacilli the substance which, when inoculated into animals, arouses an immunising response. In a series of experiments conducted by exact methods, he shows that after killing the bacilli with chloroform and drying with anhydrous sodium sulphate a nucleo-proteid may be extracted from the bodies of the bacilli which possesses immunising properties of a high order. A single dose of 0·001 to 0·01 milligramme reduces the mortality on subsequent inoculation with virulent plague from about 70 per cent. to about 13 per cent. The whole bacilli killed with chloroform given in the optimum dose are much less efficacious. The inquiry is still in progress.

Interim Report by the Advisory Committee.

The following statement embodies the chief conclusions which have been provisionally reached by the Advisory Committee as the result of the investigation made under their direction from 1905–09 into the mode of spread of plague in India.

1. Considerable epidemics of human plague consist almost entirely of cases of bubonic plague and are directly dependent on the occurrence of epidemic plague in rats. The development of the rat epidemic precedes the human epidemic by an interval of about a fortnight. There is no evidence that any animals except rats play an important part in plague epidemics.

2. *Epidemic plague in rats.*—(*a*) That fleas which have sucked the blood of a plague-infected rat can transmit the disease to healthy rats to which they are transferred. The plague bacilli multiply in the stomach of the flea, and the flea may be still capable of conveying infection three weeks after having imbibed plague-infected blood. (*b*) If plague-infected rats are kept in close confinement along with healthy rats no epidemic of the disease occurs in the absence of fleas. In the presence of rat fleas the disease spreads from the infected to the healthy animals, and the rapidity and severity of the epidemic so produced is in proportion to the abundance of fleas. (*c*) Rats may be infected by feeding them upon the bodies of other rats dead from plague. The distribution of the lesions in the bodies of naturally infected rats corresponds with that in rats experimentally infected by means of fleas and not with that in rats infected by feeding. The committee, therefore, conclude that *in nature plague is spread among rats by the agency of rat fleas.*

3. *Epidemic plague in man.*—(*a*) Bubonic plague is not directly infectious from man to man as is shown by the experience of plague hospitals where there is no tendency for the disease to spread from the sick to the attendants. (*b*) Material epidemics of plague in man are always associated with epidemic plague in rats. Epidemic plague among rats provides a large number of infected rat fleas, and owing to the mortality among the rats brings these fleas on to human beings. (*c*) Rat fleas (*Pulex cheopis*) bite human beings, especially in the absence of their natural host. (*d*) Rat fleas containing plague bacilli and found capable of transmitting plague to animals may be caught in plague-infected houses. (*e*) Animals susceptible to plague (guinea-pigs, monkeys) placed in plague-infected houses if unprotected from fleas may contract the disease, whereas such animals under the same circumstances remain free from plague if protected from fleas. (*f*) The commission have also performed numerous experiments with a view of testing other possible modes of infection, and have found that—(i.) In the absence of fleas no epidemic resulted when animals susceptible to plague (guinea-pigs) were kept in close contact with infected animals, although the animals took their food off floors grossly contaminated by the excreta of their infected companions; (ii.) that susceptible animals (guinea-pigs) caused to live upon and feed off floors artificially saturated with plague cultures failed to contract the disease; and (iii.) that the excreta of plague-infected patients may contain plague bacilli, but the bedding, &c., of plague patients soiled with excreta containing plague bacilli was not found to be infective to highly susceptible animals caused to live in and upon the bedding. The committee therefore consider that *in the great majority of cases during an epidemic of plague man contracts the disease from plague-infected rats through the agency of plague-infected rat fleas.*

4. *The seasonal recurrence and spread of plague.*—(*a*) The committee have obtained no evidence that under ordinary conditions the plague bacillus survives for more than a few days outside the bodies of men, animals, or fleas. (*b*) In large towns plague may persist throughout the year since a few cases of acute plague in men and rats occur during the non-epidemic plague season. (*c*) In villages there was no satisfactory evidence that such persistence is of other than exceptional occurrence and it seems probable that the recurring annual epidemics in such places are due in most cases to fresh importation of the infection. (*d*) There is no evidence that plague infection is carried for more than short distances by the spontaneous movement of rats. Plague appears to be commonly imported into a fresh locality about the persons of human beings, though the transference of infected rats and fleas in merchandise must be considered. (*e*) In districts which suffer annual epidemics of plague, the rat epidemic, on which the human epidemic depends, occurs during some part of that season when the prevalence of fleas is greatest.

THE MEDICAL PROFESSION AND MUNICIPAL HONOURS.

THE following members of the medical profession have been elected or re-elected to the mayoral chair. Brief notes of their medical and municipal careers are given:—

Faversham.—Mr. S. R. Alexander, M.D. Lond., M.R.C.S. Eng., L.S.A., is an old student of London University and Guy's Hospital. He has been chairman of the governors of the Faversham Grammar School for several years, is a trustee of public charities, a governor of Wreight's and Gibbs's Schools, and represents the University of London on the higher education committee. His election to the mayoral chair is believed to be a unique event in the history of the borough, as he has been previously unconnected with the corporation. As Mayor of Faversham he is a Baron of the Cinque Ports, and as such is commanded to attend the Coronation of the King in Westminster Abbey. He married in 1890 a daughter of the late Mr. Alfred George Schiff.

Hartlepool.—Mr. W. S. Gibb, M.B., C.M. Edin., is an honorary physician to the Hartlepools Hospital.

Montgomery.—Mr. Nicholas Watson Fairles-Humphreys, M.R.C.S. Eng., L.S.A. (re-elected), was born in 1837 and studied medicine at St. Bartholomew's Hospital. In 1885 he was elected alderman for the borough of Montgomery and has been 12 times mayor. He is a justice of the peace for the county of Montgomery, was high sheriff in 1882–83, and has been a county alderman since 1889. His grandfather, Nicholas Fairles, justice of the peace for the county of Durham, was the originator of the lifeboat movement and chairman of the first committee.

Newark.—Mr. F. H. Appleby, M.R.C.S. Eng., L.S.A., J.P. (re-elected), was a student of University College, London, and went to Newark 45 years ago as house surgeon to the hospital. He has since practised in partnership in that town, and is now the *doyen* of the profession in Newark and senior honorary surgeon of the hospital. He has done excellent work as lecturer and examiner to the St. John Ambulance Association, and in recognition of his services was appointed Honorary Associate of the Order of St. John of Jerusalem; last March he was promoted to Knight of Grace of the Order. The Volunteer movement has also commanded his active sympathy. He joined the 4th Notts as surgeon in 1884 and gradually rose to be senior medical officer of the North Midland Brigade, ranking as Brigade-Surgeon-Lieutenant-Colonel. On the formation of the Territorial Forces he was

appointed a military member of the County Association, but has now retired with the rank of Lieutenant-Colonel of the Royal Army Medical Corps, T.F. He has also received the V.D. He has been a member of the town council for 20 years and has done good work on the sanitary committee, of which he is chairman, and also in connexion with the isolation hospital. Eleven years ago he was unanimously called to the office of mayor, which he filled with success. Besides being chairman of the free library committee and the museum committee, Mr. Appleby is connected prominently with several educational undertakings in the borough over which he presides.

Oswestry.—Mr. R. de la Poer Beresford, M.D. Glasg., L.R.C.P., L.R.C.S. Edin., L.R.C.P. Lond., V.D. (re-elected) has served his borough in the capacity of medical officer of health for 43 years, which makes him possibly the senior medical officer of health in England. He is the senior surgeon to the Oswestry Hospital and Dispensary and to the Ellesmere Cottage Hospital, and surgeon to the Cambrian Railway Company. He now holds the rank of Colonel, R.A.M.C., T.F., having received his first commission in the Volunteers in 1887.

Ruthin.—Mr. T. Owen Jones, L.R.C.P., L.R.C.S. Edin., L.F.P.S.G. (re-elected), received his medical education at Anderson's College, Glasgow, and qualified in 1894. He obtained the appointment of medical officer of health of the Ruthin rural district in 1898, when he went to reside in that district. He is deputy medical officer to H.M. Prison, inspector of school children, and lecturer and examiner to the St. John Ambulance Association. For six years he was a member of the Ruthin town council. In 1908, although not then a member of the council, he was unanimously elected mayor, which honour he again received in 1909, and this year for the third time has been unanimously chosen to occupy the mayoral chair.

Saffron Walden.—Mr. J. P. Atkinson, M.D. Glasg., L.R.C.P. Lond., L.R.C.S. Edin., was born in 1838. After serving a term of pupilage with Mr. Little, Mr. Young, and Mr. Adams of Boston, he proceeded to Glasgow University, where he received his medical education, and graduated as M.D. with honours in 1863, having previously passed the examination for the diploma of the Royal College of Surgeons of Edinburgh. In the same year he took the L.R.C.P. Lond. Subsequently he settled at Bampton, Oxon., but removed in 1881 to Saffron Walden, and finally retired from practice in 1908. He entered the town council of the borough of Saffron Walden in 1888 and in 1891 was elected mayor, being re-elected in the following year. He was again appointed in 1900 and re-elected in 1901, and was mayor at the time of the Coronation of the late King Edward VII. and received the Coronation medal. This year he has been elected mayor for the fifth time. Dr. Atkinson joined the medical staff of the 3rd V.B. the Suffolk Regiment, received the V.D. in 1904, and retired with the rank of surgeon-colonel in 1905. He has represented the town council on the joint isolation hospital board, of which he has been chairman since its incorporation in 1903, is a member of the Essex County Territorial Force Association, and has represented the borough on the Essex county council, and also on the county association recently formed for combating consumption.

Warrington.—Mr. G. W. Joseph, M.D. Durh., L.R.C.P.I., M.R.C.S. Eng., L.S.A., is an ex-president of the Warrington Medico-Ethical Society and was lately medical officer of health and public analyst for the borough of Warrington.

Wrexham.—Mr. S. Edwards Jones, L.R.C.P., L.R.C.S. Edin., L.F.P.S.G., who received his medical education at Anderson's and St. Mungo's Colleges, Glasgow, qualified in 1892. He was a prizeman in medicine and operative surgery. After holding the appointment of senior house surgeon at Glasgow Royal Infirmary in 1893–94 he commenced private practice. He has been a member of the Wrexham board of guardians and rural district council since 1905 and takes a keen interest in all public health matters. At one time he was medical officer of health for the combined borough and rural districts of Wrexham. In 1906 he was elected a member of the Wrexham town council and has been chairman of the health committee for three and a half years. In 1909 he was returned to the council without opposition and successfully advocated several important improvement schemes with regard to the health of the borough.

MEDICINE AND THE LAW.

Macrae v. *Harness: The Care of an Infant Mentally Defective.*

Mr. Justice Swinfen Eady was occupied for six days in hearing and deciding in the Chancery Division the claim of Douglas Gordon Macrae, a young man suing through the committee of his estate his step-mother, Mrs. Harness. The action was brought to obtain a declaration that money paid by the lad's trustees to the defendant during the plaintiff's minority for his maintenance and education had not been properly expended upon these objects and for an account of the money thus paid to her. Young Macrae was the son of a wealthy man who died in 1901, leaving the plaintiff, a boy 15 years of age, and a daughter. From the estate of the deceased an income of about £4000 a year was paid to his widow, whom he had married in 1897, and who was expected to keep up the principal residence of the deceased, a country house at Collingbourne. Out of the other half of her husband's estate the trustees allowed this lady £3000 a year in respect of the maintenance and education of her two step-children. The boy, according to her evidence, showed signs of mental weakness during his father's lifetime, giving trouble at home and at two schools which he had had to leave. In 1901, when the father had died, the conclusion was arrived at that the plaintiff's mental condition required special care, and the following provision was proved in the course of the case to have been made for it. At first a house was rented on his account at Eastbourne, where he resided under the care of Mr. H. N. Harness, a medical man who had been called in to attend him in London. Mr. Harness remained in charge until March, 1902, and then left. The patient remained at Eastbourne until December, 1902, the cost of his maintenance there being at the rate of £1200 a year, £50 per month having been paid to Mr. Harness during his care of the case. In December, 1902, Mr. Harness became engaged to Mrs. Macrae, whom he married in the following February. In January, 1903, Mr. Harness had arranged with Dr. Harry Corner that the boy should be taken charge of by him in a private home at New Southgate, the payment to be 4 guineas a week, to include board, lodging, laundry, and medical attendance, and an additional 2 guineas a week for a private attendant to sleep in the patient's room. According to Dr. Corner's evidence, the question of expense was to be considered, and, as a matter of fact, the inclusive charge was eventually reduced to 5 guineas per week, when it was considered that the patient would require less exclusive attention. At one time when £20 extra per month was charged in respect of the necessary employment of extra nurses, Dr. Corner was informed by Mr. Harness that this was more than could be afforded. The lad improved under Dr. Corner's care and was reported to the Commissioners in Lunacy as having no symptoms of insanity. In July, 1904, young Macrae, who had been removed from Dr. Corner's establishment, was placed under the care of a medical man at Farnborough, an arrangement being made for the payment of 6 guineas per week, to include an attendant, not necessarily trained, and not more than £1 for amusement. Evidence was given by this medical man's wife that Mrs. Harness in an interview with her said that she would also pay for anything very necessary or urgent. The limit of £1 a week for amusements was denied by the defence. The expense of a special attendant during a trip to Ireland was refused. The plaintiff remained at Farnborough for 18 months and then went back to his relations, living with them at a house where Mr. Harness did not himself reside, but where he spent his week ends. At a later date the plaintiff was placed in the care of Mr. A. Moore at Pailton Hall, near Rugby, where the provision for him, if proportionate to the payment made for it, was in the opinion of Dr. F. Bryan, who visited him in January, 1908, at the instance of the lunacy authorities, wholly inadequate and unsatisfactory, and where the treatment included the use of mechanical restraint and of drugs, stated to be chloral and hyoscine, in quantities sufficient to be injurious to the patient. One of the attendants employed was a groom or stable helper. The attention of the lunacy authorities had by this time been called to the case, and as a result of the inquiry held by a Master in Lunacy the plaintiff was placed under the care of Dr. Bryan, and since then had improved markedly in health. In the opinion of Dr. Bryan the treatment with drugs

to which the plaintiff had been subjected would have been likely to endanger his life if persevered in. It was stated by Mr. Harness that the treatment given by Mr. Moore, including the drugs used, was according to the recommendation of Dr. Krumbholz, whose instructions Mr. Moore followed. Mr. Moore was not called as a witness, and an application was made to the judge at the close of the evidence that he might be allowed to make a statement in view of what had been said with reference to him. Unfortunately his lordship was not able to permit this, but he referred in his judgment to the hardship of the circumstances in which Mr. Moore was thus placed. It may be observed that with regard to the gentlemen in whose care the plaintiff had been, and who gave evidence, it was not alleged that their treatment was other than proper and in accordance with the amount of the sum paid for the accommodation, board, and attendance arranged for on the plaintiff's behalf. In giving judgment Mr. Justice Swinfen Eady reviewed the evidence, laying stress upon that of Dr. Bryan as to the improvement in the lad's condition under his charge, and it should be stated that the arrangement sanctioned by the court with regard to this allowed the spending of an annual sum of £1700 for the plaintiff's maintenance. In reviewing the negotiations and arrangements entered into by Mr. Harness, his lordship held that it was not a question with him of what should be done in the boy's interest, but of economy. It was clear, he added, from the cross-examination of Mr. Harness, that the relatives of the boy had not been consulted with regard to his removal from Dr. Corner's home, and that a statement made by Mr. Harness in a letter to Dr. Corner to the effect that the relatives were agreed that he must be so removed, because the extra payments of £20 a month could not be afforded, was untrue. "It is quite impossible," his lordship said, "to read Mr. Harness's letters without seeing that the boy's welfare was the last consideration and economy the first." Mrs. Harness's statement that the boy was removed from Dr. Corner's care because Mr. and Mrs. Harness wanted him at home was, in his lordship's opinion, absolutely untrue. He expressed himself as satisfied with the evidence of the medical men with whom the plaintiff had resided, and where their evidence came into conflict with that of Mr. and Mrs. Harness he believed the former and not the latter. After referring in detail to the period spent at the house of Mr. Moore and to the fact that when it was telegraphed to the defendant to Norway that the lad was worse she did not return but only telegraphed back that he should be removed to an asylum, his lordship gave judgment in the plaintiff's favour. The issue to be determined was whether during the time involved he had been maintained in a reasonable and proper manner having regard to his position and means. His lordship was of the opinion that he had not been so maintained, and that Mrs. Harness had failed to discharge her duty as his guardian. He said a declaration would be granted to that effect, and also a declaration that the defendant was liable to account for £18,847 paid to her by the trustees between April, 1901, and August, 1907, when the plaintiff came of age, proper deductions to be made in respect of expenditure upon the education and maintenance of the plaintiff and his sister. The costs of the action he ordered to be paid by the defendant.

LITERARY INTELLIGENCE.—Mr. H. K. Lewis will publish almost immediately a new work dealing with the new organic arsenic compound "Diamino-dioxy-arseno-benzol," the famous "606," which is intended to provide in a handy and condensed form information not readily accessible elsewhere. Recent English and foreign literature on the subject is given. The writers are Mr. W. H. Martindale and Dr. W. Wynn Westcott, the well-known authors of the "Extra Pharmacopœia." The same firm has also just ready a monograph on "Meningitis, Sinus Thrombosis and Abscess of the Brain," by Dr. John Wyllie, author of "Tumours of the Cerebellum." The work contains appendices on Lumbar Puncture and Diseases of the Nasal Accessory Sinuses.—Messrs. Baillière, Tindall, and Cox inform us that they hope to publish early next year an English edition of Brünings's "Direkte Laryngoskopie," with some additional matter, bringing it right up to date, supplied by the author.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

The City of Nottingham.—Dr. Philip Boobbyer deals in his current annual report with the sanitary circumstances of a population of 263,441, the general death-rate of which for 1909 was 16·20 per 1000, while the birth-rate was 25·6 per 1000; the infantile mortality figure amounted to 150 per 1000 births. There has been a marked fall in the percentage of children successfully vaccinated within recent years, and in the first half of 1909 there were no fewer than 1728 certificates of exemption obtained as compared with 829 in the previous half year. As to any administrative methods Dr. Boobbyer observes that "conscientious objection as interpreted by the average objector is not only broadly farcical in itself but is rapidly reducing compulsory vaccination to something of the same order," and he adds that the gratuitous statutory provision for escaping vaccination is so simple that it is regarded by many persons as an authoritative encouragement to evade vaccination, a statement which is, in our opinion, quite a moderate one. Commenting upon the employment of diphtheria antitoxin Dr. Boobbyer refers to the large number of cases of diphtheria in which the use of this absolutely essential treatment has been neglected, and he states that cases are frequently sent into hospital which have received no serum, although the disease has been diagnosed for several days, and this notwithstanding the fact that the antitoxin is distributed gratuitously for the use of poor patients. The death-rate from enteric fever was 7 per 100,000, as compared with a rate of 3 for London and 6 in England and Wales generally. As is well known, Dr. Boobbyer attributes the excessive enteric fever death-rate of Nottingham largely to the persistence of the conservancy system of excrement disposal, and his annual reports for several years past contain some very instructive data upon this subject, as well as with reference to a high diarrhœa mortality, which is also attributed largely to the retention of the pail system. Writing upon the subject of tuberculosis, attention is directed to the provision in the grounds of the isolation hospital at Bagthorpe which is intended partly as an educational establishment and partly as a hospital. During 1909 the average stay of the patients was a little under three months, the weekly charge being 10*s.* 6*d.* One of the most interesting features in connexion with the Bagthorpe Hospital is the practice which has now obtained for some years of nursing cases of acute specific disease as far as practicable in the open air. Experience shows, Dr. Boobbyer is confident, that cases thus dealt with do better than in the ordinary wards and no untoward results have accrued. As regards what is known as the "barrier" system of treating cases of infectious disease—that is to say, the isolation or insulation of each patient's bed in a space by itself by means of a screen, cord, or tape—Dr. Boobbyer thinks that it is an excellent precaution against contact, which he regards as the principal means of infection, and as a method of impressing upon nurses and others the full meaning of physical isolation. He thinks, however, that the system is very difficult to carry out in its entirety with young patients of the poorer classes and with a limited nursing staff. In his opinion the open-air treatment above referred to is preferable, so much so that he is advocating the alteration of all the ward blocks so as to afford facilities for such treatment—i.e., the provision of an open verandah extending along the entire side of each ward block and communicating with the wards by French casement windows extending to the floor. The advantage of hospital accommodation for patients suffering from enteric fever is emphasised by Dr. Boobbyer, and we quite agree with him that it is rarely possible to properly nurse at home patients suffering from this disease. The Notification of Births Act, 1907, has been in force in Nottingham since May, 1908, and during 1909 there were 4900, or 73 per cent. of all the births registered, notified. It is, of course, provided by the Act that all births shall be notified, but the number above given includes all thosein which useful action can be taken by the sanitary authority. The number of certified midwives amounted in 1909 to 86, and of these 50 per cent. were engaged in active practice.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 7347 births and 5617 deaths were registered during the week ending Nov. 26th. The annual rate of mortality in these towns, which had steadily increased in the four preceding weeks from 13·0 to 15·5 per 1000, further rose to 17·3 in the week under notice. During the first eight weeks of the current quarter the death-rate in these towns averaged 14·1 per 1000. In London the death-rate during the same period, calculated on the probably over-estimated population, was equal to 14·4 per 1000. Among the 77 towns the death-rates last week ranged from 7·8 in Wallasey, 9·0 in Hornsey, 9·2 in King's Norton, and 9·6 in West Hartlepool, to 23·8 in Stoke-on-Trent, 24·8 in Huddersfield, 26·3 in Middlesbrough, and 26·8 in Tynemouth. The 5617 deaths from all causes in the 77 towns last week showed a further increase of 577 on the numbers in recent weeks, and included 420 which were referred to the principal epidemic diseases, against 361, 392, and 403 in the three preceding weeks; of these 420 deaths, 192 resulted from measles, 67 from diarrhœa, 56 from whooping-cough, 54 from diphtheria, 26 from scarlet fever, and 25 from enteric fever, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the 77 towns last week was equal to 1·3 per 1000, against 1·2 in each of the two preceding weeks. No death from any of these diseases was registered last week in East Ham, Walthamstow, South Shields, Preston, Hornsey, or St. Helens; the annual death-rates therefrom ranged upwards, however, to 3·9 in Rotherham, 4·7 in Tottenham, 5·4 in Plymouth, and 5·5 in Tynemouth. The fatal cases of measles in the 77 towns, which had been 101, 136, and 164 in the three preceding weeks, further rose last week to 192, and exceeded the number in any previous week of this year; they caused the highest annual rates, 2·3 in Brighton, 3·5 in Tottenham, 4·6 in Tynemouth, and 5·4 in Plymouth. The deaths attributed to diarrhœa, which had declined in the 12 preceding weeks from 527 to 75, further fell last week to 65, and were proportionally most numerous in Walsall. The deaths referred to diphtheria, which had been 54 and 55 in the two previous weeks, were again 54 last week; they included 16 in London and its suburban districts, 6 in Manchester and Salford, and 3 each in Swansea, Stoke-on-Trent, and Liverpool. The 56 fatal cases of whooping-cough showed a slight further increase upon recent weekly numbers, and caused annual rates equal to 1·2 in Norwich and 1·6 in Rotherham. The 26 deaths from scarlet fever were fewer by 7 than the number in the previous week; 3 occurred in Bury and 2 in Stoke-on-Trent. The deaths referred to enteric fever, which had been 32 and 21 in the two previous weeks, rose again last week to 25; they included 3 in Wigan, 3 in Manchester, and 2 each in Stoke-on-Trent and Blackburn. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had been 1882 and 1843 at the end of the two preceding weeks, had further declined to 1769 on Saturday last; 153 new cases of this disease were admitted to these hospitals during last week, against 239 and 180 in the two previous weeks. The 1810 deaths from all causes in London last week included 558 which were referred to pneumonia and other diseases of the respiratory system, against 246, 319, and 396 in the three preceding weeks, and exceeded by 185 the corrected average number in the corresponding week of the five years 1905–09. The causes of 48, or 0·9 per cent., of the deaths registered during last week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified last week in Leeds, West Ham, Bradford, Newcastle-on-Tyne, and in 49 other smaller towns; the 48 uncertified causes of death in the 77 towns last week included 6 in Birmingham, 5 in Liverpool, 5 in Gateshead, and 3 each in St. Helen's, Manchester, Rochdale, and South Shields.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 834 births and 600 deaths were registered during the week ending Nov. 26th. The annual rate of mortality in these towns, which had been equal to 13·3 and 16·2 per 1000 in the two preceding weeks, further rose to 16·5 in the week under notice. During the first eight weeks of the current quarter the death-rate in these eight towns averaged 14·1 per 1000, and corresponded with the mean rate during the same period in the 77 largest English towns. The annual death-rates in the eight Scotch towns last week ranged from 10·8 and 12·4 in Leith and Aberdeen, to 22·9 in Paisley and 26·6 in Perth. The 600 deaths from all causes in the eight towns last week showed a further increase of 12 upon the numbers in the two previous weeks, and included 55 which were referred to the principal epidemic diseases, against 47 and 61 in the two preceding weeks; of these 55 deaths, 15 resulted from diarrhœa, 14 from diphtheria, 12 from whooping-cough, 11 from scarlet fever, 2 from "fever," and 1 from measles, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the eight towns last week was equal to 1·5 per 1000, and exceeded by 0·2 the rate from the same diseases in the 77 English towns. The deaths attributed to diarrhœa in the Scotch towns, which had been 17 and 24 in the two previous weeks, declined to 15 last week, of which 9 occurred in Glasgow and 2 both in Edinburgh and Greenock. The 14 fatal cases of diphtheria showed an increase of 6 upon the number in the previous week, and included 5 in Glasgow, 3 in Edinburgh, and 2 in Aberdeen. The 12 deaths from whooping-cough were within 1 of the number in the previous week; 8 were returned in Glasgow. The fatal cases of scarlet fever, which had been 6, 7, and 5 in the three preceding weeks, rose to 11 last week, of which 6 occurred in Glasgow and 4 in Dundee. The 2 deaths referred to "fever" and the fatal cases [of measles were recorded in Glasgow. The deaths referred to diseases of the respiratory system in the eight towns, which had been 65 and 121 in the two preceding weeks, further rose last week to 138, but were 160 below the number in the corresponding week of last year. The causes of 16, or 2·7 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 529 births and 423 deaths were registered during the week ending Nov. 26th. The mean annual rate of mortality in these towns, which had been equal to 15·1, 16·2, and 17·9 per 1000 in the three preceding weeks, further rose to 19·1 in the week under notice. During the first eight weeks of the current quarter the annual death-rate in these Irish towns averaged 16·9 per 1000; the mean rate during the same period did not exceed 14·1 in the 77 largest English towns or 14·4 in the eight Scotch towns. The annual death-rate during last week was equal to 21·0 in Dublin, 17·9 in Belfast, 17·1 in Cork, 16·8 in Londonderry, 5·5 in Limerick, and 11·7 in Waterford; the mean annual death-rate last week in the 16 smallest of these Irish towns was equal to 24·1 per 1000. The 423 deaths from all causes in the 22 town districts last week showed a further increase of 27 upon the numbers in recent weeks, and included 29 which were referred to the principal epidemic diseases, against 27 and 18 in the two previous weeks; these 29 deaths were equal to an annual rate of 1·3 per 1000, corresponding with the mean rate from the same diseases last week in the 77 English towns, the rate in the eight Scotch towns being 1·5. The 29 deaths from these epidemic diseases in the Irish towns last week included 9 from whooping-cough, 8 from measles, 6 from diarrhœa, 3 from diphtheria, 2 from enteric fever, and 1 from scarlet fever, but not one from small-pox. The 8 fatal cases of measles showed a marked increase, and included 5 in Lurgan and 2 in Belfast. The 9 deaths from whooping-cough also showed an increase upon the numbers in recent weeks; 6 were recorded in Dublin. The 6 deaths attributed to diarrhœa, including 4 in Dublin, corresponded with the number in the previous week. Two of the 3 fatal cases of diphtheria and both the deaths referred to enteric fever were returned in Dublin. The death from scarlet fever occurred in Belfast. The deaths in the 22 towns last week included 100 which were referred to pneumonia and other diseases of the respiratory system, against 88 and 80 in the two preceding

weeks. The causes of 12, or 2·8 per cent., of the deaths registered last week in the Irish towns were not certified; in the 77 English towns the proportion of uncertified deaths last week did not exceed 0·9 per cent., and in the eight Scotch towns it was equal to 2·7 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following Surgeons have been promoted to the rank of Staff-Surgeon in His Majesty's Fleet (dated Nov. 21st, 1910):—Michael Joseph Laffan, Archibald Denizé Spalding, Alexander McCloy, Thomas Aubrey Smyth, Frederick Eustace Anley, Arthur Davidson, and Gerald Coneybeare Cross.

In accordance with the provisions of Order in Council of April 1st, 1881, the undermentioned officers have been placed on the Retired List:—Fleet-Surgeon Alfred Matthew Page, Surgeon William Hutcheson (dated Nov. 10th, 1910).

In accordance with the provisions of Order in Council of April 1st, 1881, Fleet-Surgeon Horace Ximenes Browne has been placed on the Retired List, with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets (dated Nov. 24th, 1910).

Acting Surgeon Robert Nicholas William Walter Biddulph has been confirmed in the rank of Surgeon in His Majesty's Fleet (dated May 6th, 1910).

In accordance with the provisions of Order in Council of April 1st, 1881, Fleet-Surgeon George Alexander Stuart Bell has been placed on the Retired List at his own request (dated Nov. 29th, 1910).

ROYAL ARMY MEDICAL CORPS.

Colonel J. C. Culling, late senior medical officer at Bermuda, has taken over the appointment of Principal Medical Officer of the Western Command in succession to Colonel R. Porter, appointed Principal Medical Officer at Malta. Lieutenant-Colonel P. C. H. Gordon has been appointed to the charge of the Military Hospital and Senior Medical Officer of the Coast Defences at Pembroke Dock. Lieutenant-Colonel H. N. Thompson, D.S.O., commanding the Station Hospital at Lucknow, has been selected for increased rate of pay under Article 317 of the Royal Warrant. Major T. B. Beach has taken over duty in Egypt from the Aldershot Command. Major F. R. Buswell has left the London District for a tour of foreign service in India. The following officers have been appointed to the Irish Command for duty:—Captain R. C. Hallowes and Captain J. S. Pascoe from Cairo, Captain H. E. Gotelee from Ceylon, and Captain P. A. Lloyd Jones from Malta. Captain A. F. Carlyon, on the termination of his tour of service on the West Coast of Africa, has been posted to the Southern Command. Captain F. C. Lambert, from Wool Camp, has taken up duty at Cosham. Captain D. P. Johnstone has been transferred from Brackenbir Moor to Liverpool. Captain R. G. A. Tate has been appointed to the charge of the Sirhind Brigade Laboratory at Ambala. Captain W. M. B. Sparkes has joined for duty in Ireland, and has been posted to the Dublin District. Lieutenant A. T. J. McCreery, from Tidworth Park, has been posted to West Down North. Lieutenant S. McK. Saunders, from Woolwich, has embarked for a tour of foreign service in Egypt. Lieutenant W. E. Marshall has arrived home on leave from Egypt.

INDIAN MEDICAL SERVICE.

The Lieutenant-Governor of Burma has appointed Colonel H. St. Clair Carruthers, Officiating Inspector-General of Civil Hospitals, to be a Member of the Educational Syndicate in Burma in succession to Colonel W. G. King, C.I.E., who has resigned his appointment. Lieutenant-Colonel W. H. E. Woodwright, civil surgeon of Bareilly, has been appointed Medical Officer of the Central Prison at Bareilly during the absence on leave of Major C. B. Prall. Lieutenant-Colonel C. E. L. Gilbert has been granted eight months' leave home from India on medical certificate. Major J. Fisher, on return from leave, has been appointed under the Foreign Department of the Government of India to be Residency Surgeon at Jaipur in succession to Lieutenant-Colonel W. H. B. Robinson. Captain G. A. Jolly and Captain A. E. Roberts have arrived home on leave from India. Captain T. T. Owen, whose services hav been placed at the disposal of the Burma Government, has been appointed to officiate as Chemical Examiner and Bacteriologist at Rangoon, relieving Major F. N. Windsor, whose services have been replaced at the disposal of the Government of India. Captain A. H. Burgess has received three months' extension of his leave home from India. Captain H. R. Dutton has been appointed Civil Surgeon at Purnea. The services of Captain A. C. MacGilchrist have been replaced at the disposal of the Bengal Government. Captain W. H. Boalth has been appointed to the Substantive Medical Charge of the 104th Wellesley's Rifles. Captain F. N. White, on special duty under the Sanitary Commissioner with the Government of India, has been granted eight months' combined leave. Lieutenant G. G. Jolly has been appointed Specialist in Radiography and Electrical Science to the Fourth (Quetta) Division of the Southern Army.

TERRITORIAL FORCE.

Royal Army Medical Corps.

1st Home Counties Field Ambulance, Royal Army Medical Corps: Lieutenant Bertram C. A. Leeper resigns his commission (dated Nov. 26th, 1910).

Attached to Units other than Medical Units.—Lieutenant William E. F. Tinley to be Captain (dated Oct. 1st, 1910). Major Andrew P. Arnold resigns his commission (dated Nov. 26th, 1910). Lieutenant Frank M. Bingham resigns his commission (dated Nov. 26th, 1910).

For attachment to Units other than Medical Units.—Arthur Henry Falkner, late Lieutenant, 5th Battalion, The King's Own (Royal Lancaster Regiment), to be Lieutenant (dated Nov. 26th, 1910).

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Captain Harry Armitage Robinson, from the Territorial Royal Army Medical Corps, to be Captain, with precedence as in the Territorial Force (dated Nov. 26th, 1910).

MEDICAL OFFICERS' SICK LEAVE.

The terms of Article 167 of the Pay Warrant, which prescribes that the sick leave up to 30 days which can be deducted from the calculation of the 61 days' leave allowed by Article 162, must only be in respect of the illness of an officer while actually at his station, have been modified subject to the condition that the employment of paid substitutes to any greater extent than is now contemplated must be avoided. General officers commanding will be at liberty to permit sick leave at whatever place the officer may be under treatment up to 30 days, if duly certified by a medical officer, not to count against the normal 61 days.

ASSOCIATION FOR PROMOTING THE TRAINING AND SUPPLY OF MIDWIVES.—A meeting of the council of the above association was held on Nov. 24th. Mrs. Samuel Bruce, who kindly lent her house for the occasion, occupied the chair. Mrs. Wallace Bruce, chairman of the executive committee, gave a short account of the work of the association during the year, and referred in particular to the Midwives (No. 2) Bill. She said there were two points upon which the executive committee of the association felt strongly—viz., Clause 12 (1) (*b*), which would permit a midwife qualified under regulations of the Local Government Board for Ireland to be entitled to be certified under the principal Act and to practise in England; and Clause 17, relating to the payment of doctors' fees. In the first case the committee considered that the clause should be omitted entirely, as it did not deal in any way with the regulation of midwives' practice in Ireland, for which a separate Bill was necessary, while it would allow a second standard of qualification for midwives practising in this country—a suggestion greatly deprecated by the association, as well as by a large majority of those who gave evidence on this point before the Departmental Committee in 1909. Miss Lucy Robinson gave an account of the training given under the auspices of the association and of the Training Home at East Ham. Miss Lorent Grant made a financial statement, and Mr. F. E. Fremantle, in a short speech, asked the members of the association to bear in mind that they wanted the Bill to pass without serious delay, and not be made a pivot or test question of Poor-law reform, but to be considered on its own merits. In conclusion, Lady St. Davids gave an address on the Organisation of District Nursing in South Wales.

Correspondence.

"Audi alteram partem."

THE QUALIFICATIONS FOR HOSPITAL APPOINTMENTS.

To the Editor of THE LANCET.

SIR,—It surely is an anomalous, if not paradoxical, position in hospital ethics that in connexion with two London hospitals advertisements should contemporaneously appear containing these conditions for candidates for positions on their staffs. The West London Hospital advertises for a physician who must be a Member of the Royal College of Physicians of London, though a member of the surgical staff may be a Fellow of the Irish or Scotch colleges. On the other hand, at West Ham the reverse of this holds good; the obligation does not apply to the medical, but only to the surgical staff. That is to say, the qualification which is good enough for the one in surgery is rejected by the other, and that that in medicine which is accepted by one hospital is ignored by the other.

At the recent dinner of the Irish Medical Schools and Graduates' Association Sir Alfred Keogh, ex-Director-General, A.M.S., spoke strongly on the absurdity of this anomaly, and an object-lesson was afforded on the same occasion, when among other distinguished Irish graduates and diplomates present were the Director-General of the Army Medical Department, the ex-Director-General, and Sir Thomas Gallwey, at present holding the chief command at Aldershot. It is not so long since the post of commandant at Netley Hospital was held by a distinguished Irishman, Sir Edmond Townsend, and successive principal medical officers in Egypt have been Irish graduates.

Anyone not in the secret as to the motives which animate hospital boards of management may be excused if in his ignorance he does not quite understand why the lives of His Majesty's sailors and soldiers are of less importance than the patients in public institutions in this country, or, to go even further than this, that His Majesty himself should be rash enough to trust his royal person during his tour throughout India, as Prince of Wales, to the custody of an Irish graduate, now one of his medical advisers—Sir Havelock Charles. Again, one is at a loss to explain how the present Governor-General of India has had all through his Viceroyalty another Irish graduate as his personal adviser.

I address this letter to THE LANCET, inasmuch as it has always taken a broad and liberal view on this question. It is to be hoped that the time is not far distant when an end will be put to such exclusiveness through the advent of a State licence which will entitle the holder to become a candidate for any public appointment in the United Kingdom.

I am, Sir, yours faithfully,

AN EX-PRESIDENT OF THE IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

London, Nov. 29th, 1910.

WHO IS HE?

To the Editor of THE LANCET.

SIR,—The excellent photograph which appeared under the above heading in Dr. Thomas Bushby's letter in THE LANCET of Nov. 26th enabled me at once to identify it as that of the bust of Thomas Waterhouse, which stands in the library of the Sheffield Medico-Chirurgical Society at the University of Sheffield. A short account of his life is given by the late Simeon Snell in the century history of the Sheffield Royal Infirmary,[1] from which I extract the following facts:—

Thomas Waterhouse was born in 1793, and commenced practice as a surgeon in 1816 at Sheffield. In 1820 he was elected one of the honorary surgeons to the infirmary. He took considerable interest in the establishment of the Medical School in 1828, and contributed £110 to the building fund. He also presented to the school his excellent collection of specimens of morbid anatomy, as well as books, &c. The late Sir James Risdon Bennett was at one time his pupil. He was also the senior of the two first honorary secretaries of the Sheffield Literary and Philosophical Society, founded in 1822 and still flourishing. He died of aneurysm of the aorta on April 8th, 1830, after having been previously operated on for aneurysms of both femoral arteries, by his friend, Mr. Hodgson of Birmingham. "Thus," says Snell, "a life of considerable promise was cut short at the early age of 36."

The following paragraph is copied from the eighth annual report of the Sheffield Literary and Philosophical Society, presented January, 1831:—

> The committee cannot omit to allude to the heavy loss sustained by the society in the death of one of its vice-presidents. The late Mr. Thomas Waterhouse had not only proved a valuable supporter of the institute in the several capacities of secretary, member of council, and contributor of papers, but is entitled to especial and honourable mention in this place as one of the founders of the society, who zealously took up the cause, when many were lukewarm or desponding, and perseveringly coöperated with heart and hands in its first establishment and subsequent proceedings.

It is of interest to add that the bust was executed in 1831 by the able young sculptor, Edward Law, brother of Dr. Joseph Law, who was for many years physician to both the General Infirmary and the Public Hospital and Dispensary, Sheffield, and whose portrait now hangs in close proximity to the marble bust of Thomas Waterhouse.

I am, Sir, yours faithfully,

R. J. PYE-SMITH,
Treasurer to the Sheffield Medico-Chirurgical Society.

Nov. 28th, 1910.

THE MIAN MIR EXPERIMENTS.

To the Editor of THE LANCET.

SIR,—In your leading article of Oct. 26th dealing with a report by the committee appointed by the Government of India to inquire into results obtained by anti-malarial experiments at Mian Mir, you note that the subject has been one of controversy. That this is so is due to the fact that, under the influence of reputed failure in that locality of methods held to be of utility in other parts of the world, the Government of India has failed to make its local governments understand that the regarding of anti-malarial measures seriously would have its approval; and it goes without saying that in the absence of such declaration of policy no local government would consider itself safe in directing any appreciable part of its own funds, or those of local bodies under it, to this end. Hence there has occurred a paresis of efforts in a country which should, in the natural course of events, have been the first to reap the benefit of Ross's discovery. This condition of affairs has been received by the profession with yearly increasing surprise. The appointment of the committee was therefore a convenience of the usual official type—permitting of justification or, in its absence, the securing of the possibility of strategic retreat. The enquiry implied the entering into so great a mass of petty details that to have managed to inspect Mian Mir, examine witnesses, travel to and from Simla, and compile the report, in the short time allowed, must have left the committee little time to consider its conclusions; and it is certainly here that the weak point of its labours is evident.

In the face of knowledge that mosquito-reduction methods have elsewhere proved successful, and being of opinion that little if any results had been secured at Mian Mir, the committee has marshalled the local physical conditions as presenting unusual difficulties, and as all-sufficient reasons why success had not been attained. It has apparently assumed as unquestionable that efforts which it testifies to as energetic were also discreet and were correctly carried out; but seeing that these experiments were specifically of the nature of a test of the utility or inutility of methods which deeply concern the sanitary and economical condition of over 230,000,000 of the people of India, it would have been reasonable for the committee to have established their correctness. Hence, from the facts as recorded by the committee and experimenting officers respectively, I would invite attention to this aspect of the matter, as affording a simple solution of the differences of opinion which have arisen on this subject.

The experiments were inaugurated by the Royal Society in 1901 "to demonstrate the reduction of malaria in a cantonment by measures based upon the recent etiology of this disease." The officers of the expedition were Dr. Stephens

[1] Sheffield General Infirmary, now the Sheffield Royal Infirmary, 1797–1897: a Brief Sketch of a Century's Work, by John Daniel Leader, F.S.A., together with Reminiscences and Biographical Notices of the Medical Staff, by Simeon Snell, F.R.C.S. Ed. Sheffield, 1897.

and (then) Mr. Christophers. Preliminary investigations by these officers occupied about six months. On their departure to England, Major James, I.M.S., was deputed by the Government of India to carry out the anti-malarial operations, and was in charge of this work from April, 1902, to July, 1903. He elected to follow certain dicta of Professor Ross, as gathered from his speeches and publications as to the advantage of "mosquito reduction." The quotations thus relied upon (pp. 6 and 7 of the Report) discuss applicability of methods, not in special, but in general, cases. The most definite of the quotations is as follows:—

> It is now a matter of the general experience of many investigators that where mosquitoes abound in a house, their larvæ can easily be found at a short distance, within a few hundred yards of the house. Occasionally, where the house is isolated, and no stagnant water is in its immediate vicinity, mosquitoes may attack it from a greater distance; but this is exceptional, and in the great majority of cases, especially in towns, almost every house breeds its own mosquitoes in its backyard, or in puddles or in drains in the streets close by.

Now the average mortal would think before making a *test* experiment that would take several months to work out, based on a statement of this general nature, the first step would be to ask the authority making it to define, as precisely as feasible, what is meant by "a few hundred yards" or "greater distance." No reference was, however, made to Professor Ross on the subject. Failing this mode of arriving at a basis, at least an independent determination of distance should have been arrived at, and, whatever that might be, in applying it to the area selected for operations it should have been observed without variation from the most external inhabited house of the groups of dwellings to be protected. In aid of arrival at this decision there were several records of observations in pre-Ross days as to distances of the "diffusion of malaria" that, by substitution of the mosquito for air, should at least have dictated caution. Indeed, in the year preceding these experiments, Celli had drawn attention in his book then published to observations by Ambrosi and Riva on this subject. Moreover, *previous* to inauguration of the Mian Mir operations, Stephens and Christophers, working in the Central Provinces, had arrived at the conclusion that the distance of a quarter of a mile was commonly, and half a mile was exceptionally, the flight of certain anopheles. Yet in attempting to explain his psychological attitude towards the Mian Mir controversy, his preference for quinine prophylaxis, and consequent absence of adequate anti-malarial measures in India, the Sanitary Commissioner with the Government of India, at p. 98 of his report for 1908, whilst placing stress upon the "few hundred yards" phrase and carefully ignoring the suggestion of "greater distance," would incorrectly desire it to be understood that this observation was not available for guidance in April, 1902, or July, 1903. But Major James, putting all such considerations aside, was content to select an area for mosquito reduction operations which itself had not equal sides ("one mile north and south and rather over ¾ mile east and west"), and the treated area round the habitations of which also was not equal. His limit, according to the committee, was drawn "close round the residential quarters, no attempt being made to deal with outlying uninhabited areas." Reference to the committee's map shows that this line abruptly excluded numerous pits and rain-fed depressions; and it becomes necessary to believe that whilst on the west he considered 40 yards of treated area would suffice for the protection of external dwellings, 200 and 260 yards were requisite on the east. The position of pits and rain-fed depressions, as shown on the map and described by the committee as still existing, certainly would not justify this differential treatment. Within this dubious area he proceeded to effect "mosquito reduction" operations—that is, by the abolition of pools, or by the making of them unfit by petrolage for breeding by mosquitoes in the "immediate vicinity" of houses (the prime point of danger as insisted by Ross), he brought about a condition equivalent to "no stagnant water" in the vicinity, well knowing that within a "few hundred yards" or "greater distance" there existed pools which might favour invasion from a distance. He therefore conspicuously failed to take due cognisance of the dicta which it is professed afforded him guidance. It is remarkable in contrast that Dr. Balfour,[1] in his excellent work at Khartoum, which has recently been eulogised by Lord Kitchener, found no similar difficulty in following Ross's meaning. Captain Christophers having returned from Europe in the Indian Medical Service, relieved Major James of duty at Mian Mir in July, 1903. He describes the area selected by Major James as "to a large extent isolated from the rest of the cantonment." Yet he held that a bazaar, 400 yards from the barracks within the protected portions, was an infective centre. As he held this opinion, it is difficult to understand the rigidity with which he excluded the Native Cavalry Lines and the East Infantry Lines which were within an additional 100 yards—that is, a total of 500 yards—of the most external of the dwellings to be protected. At the end of August he found that mosquitoes might invade from a distance of three-quarters of a mile, and then determined to enlarge Major James's area by three-quarters of a mile "in every direction." This would have been a logical sequence; but some error occurred in his measurements, as the text of his account of his labours, and a comparison of his map[2]—allowing for difference of scale—with that supplied by the committee, show that had such extension been carried out to the north, west, and east, not only would the lines mentioned have been included but the West Infantry Lines also. Both within and without these lines the possible breeding places for mosquitoes were very numerous, as shown by witnesses examined by the committee; and, indeed, up to date these have not been completely got rid of under Surgeon-General Hamilton's scheme. As a result, therefore, even the pools recognised by Captain Christophers as offering danger of invasion were not treated until the three months of the "fever season" (September, October, November) were actually at hand—a state of affairs that would not have precluded adult mosquitoes having already taken up their abode, with ample nourishment at disposal, within the various houses. Again, therefore, there was an absence of fixed ideas of procedure to be followed, or at least uniformity in method; and although doubtless interesting facts as to mosquito biology were gathered, the experiment was useless for the sanitary end originally desired by the Royal Society as defined above. Indeed, the methods were so lacking in uniformity that it is reasonable to believe that of the experimenting officers at least Major James (who was responsible for the inauguration and the longer conduct of the operations) was of opinion that Ross had pledged himself to the statement that, provided larvæ "close" to dwellings (again distances being undefined) were destroyed, no further precaution was required. It is, however, obvious that Ross made no such statement; and it extraordinary that, during the years of inaction which have followed these experiments, this simple fact has been lost sight of by a Sanitary Commissioner predisposed to "quinine prophylaxis"—a method which the committee frankly states "has not hitherto come within the range of practical politics." It is satisfactory to find that the committee whilst providing for those responsible for these experiments a strategic retreat, by adducing the physical conditions at Mian Mir as sufficing to account for the indifferent results secured, shows no disposition to deprecate "mosquito reduction" methods *per se;* on the opposite, it considers their addition to the present quinine prophylaxis policy would offer "great possibilities."

I am, Sir, yours faithfully,

W. G. KING, Colonel, I.M.S. (retired).

[1] Second Report Wellcome Research Laboratories, p. 21.

[2] Scientific Memoirs, Government of India, No. 9.

ACUTE MYELITIS AND ACUTE POLIOMYELITIS.

To the Editor of THE LANCET.

SIR,—With much of the article by Dr. Bastian on Thrombotic Softening of the Spinal Cord as a Cause of So-called "Acute Myelitis[1]" most observers will be in entire agreement, and in support of the view expressed I may mention the recent article on Acute Myelitis in Clifford Allbutt's "System of Medicine," Vol. VII., p. 645, 1910. With regard to acute poliomyelitis, however, I am afraid I cannot now agree with Dr. Bastian's view. All the recent work of Landsteiner, Popper, Levaditi, Flexner, and Lewis points to the fact that poliomyelitis is an infective disease giving rise to a lymphocytic infiltration of the tissues and walls of the vessels of the spinal cord. This perivascular exudation, though it may fall with special incidence on one portion of

[1] THE LANCET, Nov. 26th, 1910, p. 1531.

the cord, is not limited to a single area, but is of wide distribution. That this perivascular exudation may be so great as to give rise to obliteration of a vessel with the subsequent necrosis of the tissue, no one will deny. Having regard to recent epidemiological and experimental investigation, poliomyelitis must be considered as an infective process. I am perfectly prepared to admit that the evidence brought forward with regard to poliomyelitis during the past years has made me change the view I expressed in the article written in 1904, from which Dr. Bastian quotes.

I consider it most important that poliomyelitis, and with that I include encephalitis, should be regarded as an infective disease, and treated as such. I hope that the time when it will be made notifiable is not far distant, for it will only be by such means that we shall be able to eliminate from the community a disease which in its effects is so disastrous to the usefulness and happiness of many lives.

I am, Sir, yours faithfully,

Harley-street, Nov. 28th, 1910. FREDERICK E. BATTEN.

ULCERATING GRANULOMA OF THE PUDENDA A PROTOZOAL DISEASE.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Oct. 15th, there is an interesting article by Captain R. Markham Carter, I.M.S., on this subject. He describes as protozoa the bodies found in such cases by Donovan in Madras, as will be seen on comparing his descriptions and drawings with those published in the fourth edition (1907) of Manson's "Tropical Diseases."

It is of considerable importance that a careful search for Donovan's parasites should be made in the places in South America and the West Indies where the disease—misnamed "ulcerating granuloma"—is prevalent, as proof is required of the identity of the diseases so described in different parts of the world. In preserved material from British Guiana I have not been able to find these bodies.

I am, Sir, yours faithfully,

Welbeck-street, W., Nov. 28th, 1910. C. W. DANIELS.

FRACTURES IN THE NEIGHBOURHOOD OF JOINTS.

To the Editor of THE LANCET.

SIR,—As a simple surgeon in a colliery district I beg to express my thanks to Mr. Robert Jones for his timely paper on Fractures near Joints, and my obligation to THE LANCET for putting it within my reach. Surgery has recently made such strides and introduced such innovations that the general practitioner can only await their trial and sentence by those whose position and experience entitle them to pronounce definite opinions upon which he can securely work.

In the first place the scaphoid fractures interested me, as my "paternal Erichsen" and my more modern acquaintance, "Rose and Carless," left me to find my own courses here; and the method of reduction of Colles's fracture by a specialist is useful and important knowledge. The treatment of shoulder and elbow injuries is much at variance with old-established practice, but it appears to be thoroughly rational if empirical, and an increased range of aseptic surgery warrants an increased range of treatment. The importance of massage and the proper time for using passive movement required more definite directions *ex cathedrâ*—the way Mr. Jones "saved the situation" for Drs. A and B deserves all commendation.

The frequency and importance of fractures in children about the hip is fortunately and carefully dwelt upon. Who of us has not on sundry occasions made his second examination in trepidation? Again, the change in method of treating fractures at the lower end of the femur is very marked and, verified by experience, cannot be too strongly urged on those in, or going into, practice, whilst injuries in the neighbourhood of the ankle-joint have to be confronted often, and it is well to bear in mind the possibilities with regard to their occurrence and consequence.

In conclusion, I for one thank Mr. Jones for his lucid and comprehensive paper and for the interest and help I have gathered from it.

I am, Sir, yours faithfully,

Blackrod, Nov. 23rd, 1910. J. GOOD, M.R.C.S Eng.

MALINGERING IN THE ARMY.

To the Editor of THE LANCET.

SIR,—I observe in THE LANCET of Nov. 26th that a paper was read at the meeting of the United Services Medical Society by Major C. E. Pollock, R.A.M.C., on the above subject, and possibly it may be of interest if I mention some actual experiences of my own in this respect. It was in the year 1897, in July as far as I remember, when in charge of the Station Hospital at Up Park Camp, Jamaica. On going the round of the wards for the first time there were five cases under observation for epilepsy, all among negro soldiers of the West India Regiment. It immediately struck me as an unusual number, and to the young medical officer in immediate charge of the cases I expressed my doubts, but he assured me that he was quite certain of three of the number. A few days after, as I was seeing the morning sick, I heard a great commotion in one of the wards, and on proceeding there found one of the three on the floor in one of his fits. Careful observation convinced me it was not genuine, and I so reported to the senior medical officer. He instructed me to act accordingly, so after observing all the cases for a fortnight I discharged to duty the one I had actually seen in the fit.

A few days after, whilst at lunch at the mess, an urgent message was delivered to me to the effect that a prisoner at the cells was in a fit. I went over to the cells at once and there saw the man I had discharged lying on his cot in a fit. Feeling sure of my ground, I asked the sergeant to get me a little cayenne pepper. He brought me a handful, but I selected two or three particles only and placed them on the lower palpebral conjunctiva of the eye nearest to me. The effect was electric, and though apparently quite insensible the man jumped out of bed with the expression, "My King!" Before leaving I told him I would be on duty for the week, and that I could always cure his fits in that way. Next day I promptly discharged the other four. There was no more epilepsy during the time I remained at Up Park Camp; at least no epidemics of the spurious kind.

We discovered afterwards that these soldiers had been attending a sort of school of instruction at Kingston. The school not paying, broke up, and there was an end of the matter.

I am, Sir, yours faithfully,

J. D. RECKITT, M.D., M.R.C.S., L.S.A., &c.,
Lieutenant-Colonel, R.A.M.C. (Ret.).

London, Nov. 28th, 1910.

THE ORIGIN OF THE SOCIETY OF APOTHECARIES.

To the Editor of THE LANCET.

SIR,—In the report which occurs in THE LANCET of Nov. 26th of the dinner given by the Worshipful Society of Apothecaries to the Lord Mayor and Sheriffs of London on Nov. 22nd your reporter has mistaken the historical allusions of the Lord Mayor when proposing "The Health of the Worshipful Master." You report his lordship as saying "in its early days the society included in its livery grocers, who, however, objected to associating their business with drugs, and so they founded a company of their own." I was present at the dinner. What the Lord Mayor did say was in accordance with the facts, which are just the other way about, the Society of Apothecaries having been formed from the Grocers' Company.

The first corporate body of which we know anything was the Gild of Pepperers which came into existence without a licence, and is mentioned in the Pipe Roll of 1179–80, and which was allied with the Spicers. This Guild ultimately fell into difficulties, and in 1345 some Pepperers founded a new fraternity of Pepperers, which was to include Pepperers of Soper's-lane and Spicers of the ward of Cheap, as well as other members of these two trades or mysteries who dealt in peppers, spices, and drugs. In 1373 the name Grocer was first applied to this Company.

In 1428 the first charter was granted by Henry VI. to the Company of Grocers. In 1562 "the Apothecaries" are spoken of as "Freemen of the Company"—i.e., Grocers. In 1607 the third charter of the Company of Grocers included the Grocers and Apothecaries as one incorporate body. In 1615 the Apothecaries petitioned the King

for a separate incorporation, which was granted in 1617. This was part of a general movement of the time to separate callings which bordered on professions from those which were trades—e.g., the Scriveners and the Musicians; although the Surgeons were not successful in getting separated from the Barbers until much later, in 1745. In 1701 a case was carried on appeal to the House of Lords *re* a Mr. Rose, which settled once and for all that an apothecary was able legally to practise medicine, and that he was entitled to visit and prescribe for a patient as well as prepare medicine for his treatment.

Since that date an apothecary in England has been a qualified medical practitioner, and for nearly two centuries the bulk of the general practice of the country was in his hands.—I am, Sir, yours faithfully,

THOMAS CARR, M.D. Durh.,
A Liveryman of the Worshipful Society of Apothecaries.

Blackpool, Nov. 26th, 1910.

BRITISH MEDICAL BENEVOLENT FUND: SUPPORT URGENTLY NEEDED.

To the Editor of THE LANCET.

SIR,—At the last meeting of the committee I had to report that the grant account on the bank was overdrawn to the extent of £250. In spite of this the committee had to deal with so many and distressing applications that the sum of £300 more was voted, with the result that the deficit now amounts to about £550. Fortunately we have been able so far to meet these demands out of the reserves accumulated at the time of our special appeal two years ago. There is now but little more left, and unless further supplies are quickly forthcoming it will be necessary to refuse help to many deserving cases, and that at the time of year when help is most needed and applications most numerous. We spend all we have, but we cannot spend what we have not got.

I appeal, therefore, to members of the profession to come to the support of the Fund and save it from the pain and reproach of having to refuse relief for want of means. Subscriptions and donations may be sent to me. *Bis dat qui cito dat.*—I am, Sir, yours faithfully,

SAMUEL WEST, M.D. Oxon.,
Honorary Treasurer, British Medical Benevolent Fund.

15, Wimpole-street, London, W.

"606."

To the Editor of THE LANCET.

SIR,—We beg to inform you that we are placing the "Ehrlich-Hata" arsenic compound dioxydiamidoarsenobenzol, generally known as "606," on the market about the middle of December next, under the denomination "Salvarsan."

As it is absolutely impossible for us to answer personally all the inquiries which medical men are sending us daily from all parts of the United Kingdom, we should esteem it a great favour if you would extend the hospitality of your esteemed journal to these lines in order that the above fact may be made known to all your readers. Thanking you in advance,—We remain, Sir, yours truly,

PRO MEISTER, LUCIUS, AND BRÜNING, LTD.,
ERNEST SCHOLL.

London, E.C., Nov. 28th, 1910.

PSORIASIS FROM A BACTERIOLOGICAL POINT OF VIEW.

To the Editor of THE LANCET.

SIR,—I have read with interest Dr. Serrell Cooke's note on this subject, published in last week's number of THE LANCET. On looking through my microscopic sections I find bodies in the so-called epidermal abscesses of psoriasis which I now think are the stumpy bacilli which he has found so constantly in his recent investigations.

I must congratulate both Dr. Cooke and Mr. Garner (the bacteriologist at St. John's Hospital) on their labours, which seem so promising. That I am prepared for the parasitic theory of psoriasis to be proved will be seen from the following abstract of my remarks made in the discussion on psoriasis at the Manchester meeting of the British Medical Association, published in the *British Medical Journal* of Oct. 25th, 1902, p. 1332:—

> Dr. Eddowes thought that they had not got to the end of staining methods, from which they might still expect much without surrendering the position to chemistry. He had found in a case of psoriasis (guttata) a spindle-shaped organism in a sebaceous gland and large micrococci in the mouth of the related hair follicle which formed the centre of the early efflorescence. He taught that *pityriasis rubra* did not become superadded to psoriasis, but that one passed into the other gradually. Psoriasis and pityriasis were closely related. The conditions could change from one to the other.

I am, Sir, yours faithfully,

ALFRED EDDOWES, M.D. Edin.

Wimpole-street, W., Nov. 29th, 1910.

ROYAL SOCIETY OF MEDICINE: ELECTRO-THERAPEUTICAL SECTION.

To the Editor of THE LANCET.

SIR,—In your issue of Oct. 29th last, p. 1319, under the heading "Röntgen Society," it is stated that this society is "the parent society of the Electro-Therapeutical Section of the Royal Society of Medicine."

At the request of the council of this section we are writing to ask if you will kindly contradict this statement. The Röntgen Society, consisting largely of lay members, was founded to study the physical side of the Röntgen rays, and is in no way a medical society. The British Electro Therapeutic Society was founded shortly afterwards to study the medical aspects and was a purely medical society. It is this society which was the parent of the Electro-Therapeutical Section of the Royal Society of Medicine.

We are, Sir, yours faithfully,

REGINALD MORTON,
G. HARRISON ORTON, } Honorary Secretaries.

Nov. 22nd, 1910.

SURGICAL INSTRUMENTS AND HOSPITAL PATIENTS.

To the Editor of THE LANCET.

SIR,—The question of the supply of surgical instruments and appliances is one that presses heavily on all societies dealing with the relief of the sick poor, and as a contributor and worker in connexion with one or two of such bodies I should be grateful if you would allow me space in your columns to put some aspects of this matter before the "profession."

The position of any person or society that is asked to contribute funds for the supply of a surgical instrument is one of some difficulty. As "lay persons" we are incompetent to criticise the decisions of the surgeon, and our business as charitable agents is to carry out his instructions and to act on the supposition that all expenditure ordered is essential. It is clear that any other attitude would be quite impossible and inevitably lead to most undesirable friction. But a great responsibility on this very account is thus laid upon the surgeon, for it depends upon him whether the circumstances of the family and the degree of benefit to be derived from the instrument are taken into account or whether it is ordered irrespective of any such considerations.

Do surgeons realise that this responsibility is theirs? Many of them certainly do, and experience has probably shown these that appliances suitable to wealthy patients, where every aid to remedy defect is desirable, are not always justifiable for the poor. Instruments given free are too often carelessly used and quickly destroyed, or even never worn at all; but when patients are too poor to pay even a small proportion of the cost themselves they have to be so provided, and it is the business of charity to find the money somehow. Wherever possible, however, patients should be asked to pay a little in proportion to their means, and I would submit that we are justified in asking those who prescribe to bear in mind that it is not only the wealthy and charitable public who are called upon to put their hands in their pockets, but in almost every case the patients themselves who have to share the cost and incur a debt which, in addition to the many other expenses of illness, they can often ill afford, and which should not be put upon them unless absolutely necessary.

I am, Sir, yours faithfully,

SOCIAL WORKER.

Nov. 22nd, 1910.

THE GERMAN ANTI-QUACKERY BILL.

(FROM A SPECIAL CORRESPONDENT.)

PRACTICALLY coincident with the publication by the British Privy Council of the Blue-book on unqualified medical practice comes the news from Germany that, after years of agitation and many ineffectual attempts to deal with this thorny subject, the field of activity of the quack and the sale of secret remedies is about to be placed on an established legal basis by a uniform law throughout the whole of the German Empire. The Bill of "a law against abuses in the healing *trade*" has received the sanction of the Federal Council, and is now before the Reichstag, after it has been before the health boards of the various States and discussed by the public for no less than two and a half years.

Scope of the Bill.

At present there are no restrictions in the German Empire regarding the practice of medicine; any person may try his prentice hand in curing others, only he may not assume any title or otherwise give rise to the belief that he is the holder of a qualification, and the pharmacists are forbidden to sell a number of drugs except when prescribed by qualified practitioners. Of course, the lay healer has to be particularly careful not to come in conflict with the many laws which deal severely with errors caused by culpable neglect or want of proper knowledge, and the recent proceedings by the State procurators against quacks have been based mostly on the latter, particularly on the law regarding the causation of bodily injury by culpable negligence. In the introduction to the new law, it is distinctly stated that it is not in the Government's intention to return to the former condition of restricted medical practice: "Any law forbidding the practice of medicine by any but qualified persons would only tend to make the quacks work more in secret and therefore less open to control; it is the secrecy in the business of a quack that in the eyes of the public surrounds it with a halo of mystery and promotes the business and prestige of the quack." The present Bill tries to strike the golden medium, and is intended to give the authorities a weapon to take more stringent measures, when necessary, against certain individuals.

The law under discussion will regulate the quack's business to a certain extent. Every person desirous of treating ailments or bodily defects in man or beast as a *trade* (it is interesting to note that they are distinctly designated as "traders") must, before opening his business, in writing inform the local authorities of his intention and give full particulars concerning his education, former occupation, and life. He will be required to keep books as other traders, which will be open to inspection, and he will be obliged to give full information, when required, regarding his methods of treatment. The licensed quack is forbidden to treat by letter, to adopt mystic practices, hypnotism, or use other than purely local anæsthetics. He is forbidden to treat infectious diseases which are dangerous to the whole community, *including cancer* (this is new). The Federal Council will be empowered to forbid the treatment at its discretion of certain ailments in man or beast, as well as the use of any particular mode of treatment. Permission to continue the exercise of a quack's trade may be withdrawn by the authorities whenever they have grounds to believe that the public health is being endangered or the life of animals jeopardised by his methods or when his clients are being exploited by swindling practices.

In view of the practically universal complaints about a falling birth-rate, it is of interest to note that by this law the Federal Council will be empowered to forbid entirely or to restrict the sale of appliances to prevent conception or induce abortion. The quack will be forbidden to supply medicine or appliances, or to instruct his clients to obtain the same from certain persons. An extremely wise provision has been included which makes it possible to forbid the sale of any infants' food or other "foods" if their use is likely to prove injurious to health, or if they are marketed in such a way as to deceive and exploit the public. The quack who makes publicly false statements regarding cures, or who attempts to deceive his clients by false statements as to the value or effects of the procedures he recommends will be liable to one year's imprisonment and a fine of £250, or either of these penalties alone.

To assist the Federal Council in the execution of this law the Chancellor will appoint a commission consisting of members of the Imperial Board of Health, appointed for a period of five years. Persons who wish to appeal against a decision of the Federal Council will be given an occasion of defending their aspect of the case before this commission of experts on the whole subject.

Measures as to Advertisements of Secret Remedies.

In dealing with the traffic in secret remedies the new law lays the axe at its principal support—advertisement. The proposal, often advanced, that the Government should examine every secret preparation before it is allowed to be placed on the market has been dropped; it would, it is stated, imply a certain guarantee of its virtue and value and thereby throw too great a responsibility on the authorities. On the other hand, the Federal Council will have the power to forbid the sale and importation of any preparations, the unrestricted sale of which is likely to prove detrimental to the public health or pocket. However, the principal attack is to be delivered against the advertisements of manufacturers of secret remedies. The measures to be adopted are, from a British point of view so accustomed to the prominent display in the daily press of the supernatural virtues of Somebody's Pills, very drastic; it will be a punishable offence to make any untruthful statements regarding the value, effects, origin, or composition of any remedies or appliances advertised to the public; and, this is the main point in the whole measure, it will be forbidden to distribute or bring to the public notice any testimonials, recommendations, expressions of thanks from clients, opinions of experts, and similar statements regarding any secret remedy. It will also be forbidden to circumvent the above provision by drawing attention to articles contained in books or pamphlets bearing in any way on the preparation. If this were applied in Great Britain, what a different aspect would the morning paper not assume. No more grateful patients "given up by the doctors," no more pictures to form a gallery of the "saved from death's door," who have incidentally contributed to the country's finances.

Present Position of Quackery in Germany.

In conjunction with the above Bill some remarks on the present position of quackery in Germany may prove interesting. The number of quacks in "practice" in Germany can only be estimated, as there is at present no special legislation requiring them to report their trade to the authorities. It is, however, assumed that the total is not wide of 15,000 persons engaged in this lucrative undertaking. That it is a very good paying business has come out in the course of several trials during the past years in which a quack has played the rôle of protagonist. The renowned shepherd, Ast, received about 500 patients daily—in fact, at certain hours of the day the trains were crowded with his "patients." Not to be forgotten is the extensive treatment by correspondence also indulged in. One quack was so overrun with patients that he found it necessary to introduce an automatic machine; the client placed in the machine a 10 pfennig piece (1½*d.*) and received a ticket with a number on it denoting his turn to appear before the gifted healer.

As regards the income derived by these quacks, the trials in which they have figured, and also some collisions with the income-tax authorities, yield a picture of the value of an "unqualified practice." We find mention made of annual incomes of £12,000, £6000, £5000 "at least," £3000 annually during 15 years, down to a mere £40 a month. What is the most surprising aspect of the whole question, and which is especially brought into prominence by the authorities, is the fact that even the poorest will find means to pay for the services of a quack, and in all cases that have come to light the fee of the quack is considerably above that of the qualified practitioner. The average fee was found to range between 3*s.* to 5*s.*, for a consultation by letter 5*s.*, while others are made to pay a deposit of several pounds, for which they will be treated for a certain time. Some extraordinarily high sums have been paid to quacks for a single course of treatment, usually ending disastrously for the patient.

THE SOUTH AFRICAN MEDICAL CONGRESS.

(FROM A SPECIAL CORRESPONDENT.)

THE Twelfth South African Medical Congress assembled in Cape Town on Oct. 31st and remained in session until Nov. 5th. There had been considerable doubt as to the wisdom of the local organising committee in arranging for Congress to meet at a time when all sections of the South African public were enjoying the festivities arranged in connexion with the opening of the new Union Parliament. Events proved, however, that these doubts were not justified, for not only was there a record attendance at Congress, but much really good work was got through in spite of many social functions to which members were invited.

As readers of THE LANCET may remember, attention in a recent number[1] was directed to the fact that public health matters in South Africa were not receiving due recognition from those in authority, and that the only strong health department in the Union—namely, that of Cape Colony—had been abolished instead of being taken as the model from which a proper health department for the Union could be evolved.

Sir Kendal Franks of Johannesburg has earned the gratitude of the profession in South Africa by visiting the larger centres and endeavouring to bring the different medical societies into line so that the Union Government could be approached; and so that the views of the profession in regard to the administration of public health and other matters of general interest could be urged upon its attention. During Congress Sir Kendal Franks's labours were crowned with success, for delegates from each medical association met and agreed to the following resolutions, which were carried unanimously through Congress with instructions to the Standing Committee to see that they were brought prominently before the Government:—

1. That a portfolio of Public Health be created, to be held, if need be, in combination with some other portfolio.
2. That a medical officer of health for South Africa be appointed, who shall be directly responsible to the Minister, and be the sole administrative head of his department. That he be a qualified expert in his department, and that his actions shall be confined to public health matters.
3. That a Medical Council for the union shall be created which shall be chiefly elective, and shall have control over the admission to the practice of medicine, of dentistry, of midwifery, and of nursing, and shall have control of the discipline of these professions.
4. That upon any change of policy on medical questions other than those of public health, or upon any question affecting the status of the profession, the Medical Council shall be consulted.
5. That there shall be an adequate representation of medical men on all boards and committees which have to do with the establishment, maintenance, and management of hospitals under the Provincial Councils.

The importance of these resolutions needs no emphasising, Stating as they do the unanimous desires of medical men in South Africa, and can the Government be induced to act upon them they will stand as *the* most important feature of this Congress. The need for a Minister of Public Health and a properly organised department was referred to repeatedly throughout the Congress—at the official opening ceremony by H.R.H. the Duke of Connaught, in the able presidential address by Dr. C. F. K. Murray, at the banquet by Sir Kendal Franks, and in several papers and discussions arising therefrom, particularly in the Public Health Section. It is to be hoped that with the profession united, as it is for the first time on these matters, the Government will see fit to accede to its wishes, and if not steps are likely to be taken to have the resolutions brought to the notice of Parliament.

Resolutions Nos. 3 and 4 are also of great importance to the profession, for hitherto the elective element in the four Medical Councils of the different provinces has not been sufficiently strong, and it is hoped that the unified Medical Council may consist principally of elected members. Moreover, in practice, it has never hitherto been the custom of the different Governments to seek the advice of the Medical Councils on matters of vital interest to the profession as a whole, but they have usually sought advice from medical men in Parliament or outside who in no sense could be said to represent the profession. The fifth resolution is of importance in the Transvaal alone, for in the other provinces the medical staffs of hospitals have as a rule been adequately represented on hospital boards.

A number of other resolutions were passed by Congress, but those I have mentioned are considered to be of vital interest in South Africa, and will be pressed on the Government by every legitimate means available. It is understood that they will be accorded the support of the Opposition and a small section of the Government party, should it be necessary to bring the matter actually into the political arena.

The papers read at the Congress were generally of a higher scientific value than at former South African Congresses, and though it is invidious to mention any paper where so many are of special merit, the paper on Paratyphoid Fevers in South Africa, by Major J. G. McNaught, R.A.M.C., is worthy of particular attention. A *résumé* of the papers will be published in book form shortly as "Transactions of Congress." The attendance at Congress numbered 129.

[1] THE LANCET, Sept. 17th, 1910, p. 897.

THE ROYAL SOCIETY OF MEDICINE

THE annual dinner of the Royal Society of Medicine was held at the Connaught Rooms of the Freemasons' Hall, London, on Nov. 29th, the President, Sir Henry Morris, being in the chair. A very large and representative gathering assembled at the dinner, and among the numerous guests were the Lord Mayor of London, Lord Ilkeston, Lord Blyth, Sir Thomas Barlow, Sir W. S. Church, Sir Francis Champneys, Sir James Reid, Sir James Porter, Alderman Sir T. Crosby, Sir A. Pearce Gould, Lord Justice Fletcher Moulton, Mr. Justice Lush, Sir Joseph Dimsdale, Sir Almeric FitzRoy, Sir Richard Douglas Powell, Sir W. Treloar, Dr. C Theodore Williams, Mr. Charters J. Symonds, Mr. Whitaker Thompson (chairman of the London County Council), Professor M. J. M. Hill (the Vice-Chancellor of the University of London), Mr. Cowell the secretary, and Mr. Victor Plarr librarian, of the Royal College of Surgeons of England, and Dr. Squire Sprigge (the Editor of THE LANCET).

Sir JOSEPH DIMSDALE, in proposing the toast of "The Society," said they owed much to science, and still more to medical men who devoted themselves to finding out the mysteries of the human body. He then sketched the history of the Royal Society of Medicine, and showed how world-wide its influence was. Its members, he said, now numbered 3300. Mr. Macalister found 800 members when he joined the society, and had worked it up to its present prosperous condition. Sir Joseph Dimsdale concluded by wishing success to the new building of the society's premises.

Sir HENRY MORRIS, in replying to the toast, described the services rendered by Sir William Church to the amalgamation of the various medical societies into the Royal Society of Medicine, and explained that the council of the society had acquired the new site in Henrietta-street for the purpose of erecting new premises because the society had outgrown the accommodation required. Sir Henry Morris's speech was an eloquent exposition of the good that could be done by a great medical society, and was obviously intended to arouse that feeling in the medical profession.

After a brief interval, which was occupied by an interesting display of blood pathology through the cinematograph, the toast of "The Guests" was happily proposed by Sir R. DOUGLAS POWELL and acknowledged by the LORD MAYOR of LONDON, Lord Justice FLETCHER MOULTON, and Sir THOMAS BARLOW.

DONATIONS AND BEQUESTS.—The late Mr. Henry Andrade Harben of Newland Park, Chalfont St. Giles, chairman of the Prudential Assurance Company, Limited, has bequeathed £1000 for the endowment of a bed in St. Mary's Hospital, Paddington, £1000 for the Medical School of that hospital, and £500 to Queen Charlotte's Lying-in Hospital.—The Glasgow Western Infirmary has received an anonymous gift of £3500 for the purpose of providing an operating theatre in the new wing.—The Royal Dental Hospital, Leicester-square, London, has received £100 from Mr. R. McWhirter, as trustee of the estate of the late Mrs. Adelaide Roberts.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

THE annual Huxley lecture was delivered on Nov. 23rd by Professor Percy Gardner of Oxford, who took for his subject "Rationalism and Science in Relation to Social Movements."—The returns of the number of new students show that 25 have entered for the full medical course and 10 for the dental course. Last year there were 24 medical students and 10 dental students. A significant fact is that of the 25 new medical students this session 17 are men and 8 women. This is a considerable increase in the number of women students.—The annual medical dinner will take place on Dec. 6th. The chair will be occupied by Dr. T. S. Short, physician to the General Hospital, and the principal guest will be Lord Ilkeston, consulting physician to the General Hospital.

Hospital for Skin and Urinary Diseases.

An electrical plant for the treatment of lupus, cancer, and other skin diseases was first installed in this hospital nine years ago, but owing to the growth in the importance of the department and the increase of patients it has been necessary from time to time to enlarge the accommodation. A new and well-equipped department has now been constructed in the basement of the building at a cost of £2000. The plant installed includes three complete sets of X ray apparatus for purely therapeutic work, these being capable of adjustment to give varying qualities of Crookes tube emanations. A shield consisting of a sheet of lead a quarter of an inch in thickness and perforated in one place is interposed between the patient and the tube. The operators are shielded behind screens lined with sheet lead and furnished with windows of thick lead glass. There are Finsen-Reyn and Lortet-Genoud lamps, and the high-frequency apparatus is by Gaiffe of Paris, and is the most powerful of its kind. For rapid radiographs and diagnostic purposes a coil is provided capable of taking a current of from 60 to 70 ampères at 220 volts. Electrolysis and ionisation are other forms of electrical treatment provided, and there is also a room for complete bacteriological and chemical examinations. The department is under the control of Mr. A. A. Russell Green.

Nov. 29th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Royal Southern Hospital: New Out-patient Department.

AN extensive and important addition to the Royal Southern Hospital was inaugurated on Nov. 21st, when Mrs. Adamson, wife of Mr. William Adamson (the president of the hospital committee) opened the new out-patient department, which at considerable expense, has been erected in Caryl-street, opposite the hospital proper. For many years past the old out-patient department—which dates back to the opening of the restored hospital in 1872—has been altogether inadequate for the requirements of the district in which the Royal Southern Hospital operates. That district has now a population of about 340,000 persons. The fact that the old out-patient department has overgrown its resources, as proved by the attendances having increased from 12,500 in 1873 to 45,000 last year, argues the necessity for further out-patient accommodation. Some 20 years ago the committee took steps to raise funds for the purpose of acquiring the site facing the hospital in Caryl-street. This was successfully accomplished and the property purchased, although further exertions on the part of the committee to provide for a building fund met with little response. In 1907, however, the corporation, in compliance with an application from the honorary treasurer of the hospital, obtained parliamentary powers to make a grant of £4000 towards the cost of the new scheme. The civic gift stimulated the generosity of the citizens, who quickly subscribed a sum of £4500, which represented the additional amount required to cover the cost of the building. The new out-patient department is substantially built and of pleasing appearance. Externally the building is of red Ruabon brick with Portland stone dressings, the two central pieces in the front elevation being surmounted with stone finials. A large, well-lighted and well-ventilated central waiting-room, planned to accommodate 200 persons, is approached by two entrances—one for patients and the other for the staff. A semicircular plastered ceiling, free from projections of any sort, effectually prevents the harbouring of dust. This hygienic principle, in fact, has been closely observed throughout the building. On the south side stands the isolation-room with a separate exit to the street, a surgical dressing-room, three consulting-rooms, and a room containing foot and air baths. Similar accommodation is afforded on the north side, with the substitution of a dental-room for the isolation-room. Retiring-rooms and lavatories for the medical staff and nurses and a dispensary are situated on the east side. On the west side are to be found an operating-theatre with a recovery-room adjoining, in addition to a dark room for eye, throat, and nose examinations, and a consulting-room for those special departments. A well-lighted and airy basement provides another waiting-room, around which are situated an X ray room, a developing-room, and the skin department, with consulting- and bath-rooms, a massage- and exercise-room, and a plaster-bandage room. Here also is placed the inoculation department, with a splint-room and a cryotherapy, or freezing, room. The foot and arm baths represent quite a recent addition to hospital plant, and will be of great utility in facilitating the removal of old dressings. The opening ceremony was attended by the Lord Mayor and Lady Mayoress and a large concourse of citizens.

Diplomas in Tropical Medicine; Support from the University of Liverpool; Continued Prosperity of the University.

The memorial presented at the opening of the session of the General Medical Council advocating the recognition of the Diploma of Tropical Medicine as an additional registrable qualification was signed by Sir Rubert Boyce (the Dean of the Liverpool School of Tropical Medicine), Professor Ronald Ross, Dr. J. W. W. Stephens, Mr. R. Newstead, Dr. W. T. Prout, C.M.G., Dr. J. L. Todd (late director of the Runcorn Research Laboratories of the Liverpool School of Tropical Medicine), Dr. Charles J. Macalister, and Dr. William Carter (emeritus professor of materia medica at the University of Liverpool). The pro-Chancellor of the University, presiding over the annual meeting of the University Court of Governors, held in the Town-hall on Nov. 26th, spoke of the continuance of the University's prosperity alike as to the number of students, the number of new chairs, and the advancing standard of work required. He also laid stress on the broadening of the scope of the work of the University, as evidenced by the Tropical School of Medicine, the Town-planning Department, and the School of Social Service, and appealed for £3000 necessary to modernise the equipment of the Department of Electro-technics. The Lord Mayor, the Lord Bishop, Sir William Forwood, Sir Edward Russell, and others testified to the valued services of the University.

Nov. 29th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

University of Bristol: Opening of the New Wing.

AT the opening of the new wing of the University by Lord Winterstoke, Pro-Chancellor of the University, the proceedings began in the large hall of the University, where the Bishop of Bristol conducted a short service. Then came two admirable speeches by Lord Winterstoke and Dr. T. Herbert Warren, Master of Magdalen College, Oxford, and till recently Vice-Chancellor of Oxford University. The former gave a most interesting retrospect of the progress of higher education in Bristol as he had known it in his lifetime, and a forecast of the place which the modern universities are destined to fill in our national life. Dr. Warren's eloquent tribute to the virtues of Bristol, his native city, contained among others the penetrating idea that a modern university founded in an ancient and historic city should cultivate in some measure that spirit of tradition which in the older University had proved itself so powerful an educational force, as well as the practical and utilitarian point of view which characterises the modern Universities.

After these addresses most of the company moved in a procession through University-road and Woodland-road to the main entrance of the new wing; the chairman and members of the University council were preceded by the bedells, with their staves of ebony and silver, and followed by the Lord Mayor and corporation of Bristol, the master and wardens of the Society of Merchant Venturers, and the Senate and staff of the University. At the same time Lord Winterstoke, the Bishop of Bristol, the treasurer, and certain of the guests, preceded by the mace, passed through the corridors from the old into the new building. The outside procession having reached the door the Lord Mayor gave a short address, in which he exhorted the undergraduates to be worthy of their University, and then the Right Hon. Lewis Fry knocked three times on the door, which was opened from within by Lord Winterstoke with a silver key suitably inscribed. The procession then entered the building to inspect it.

The University Conversazione.

On the same evening the new buildings which were opened in the afternoon were exhibited to about 1500 guests at a conversazione.[1] Happily the weather was fine, and the guests were able to pass into the reception hall where they were received by the Right Hon. Lewis Fry, Sir Isambard and Lady Owen, and others, without the discomforts of dampness which at one time threatened. So many things were on view that it was impossible for anyone to see everything; but by means of ingeniously planned routes, indicated by arrows of different colours on the walls, everyone was directed to those exhibits in which he was specially interested. Among the most striking of these were the tele-photographic apparatus, the action of which was demonstrated by the inventor, Mr. T. Thorne Baker. A tele-writer apparatus in action was also shown. Captain F. P. Mackie, I.M.S., an old Bristol student and a member of the Sleeping Sickness Commission for Uganda, lectured on his travels, with many lantern illustrations; and Professor A. F. Stanley Kent gave a demonstration of high frequency currents. In another room there was a "Sahara scene" arranged to show various kinds of desert vegetation, while the small hall of the University was filled with Antarctic curios brought back by the Shackleton Expedition. It would be impossible to catalogue all the minor attractions of the conversazione, but two or three were of special interest to medical visitors, among them a most ingenious demonstration of the part played by flies as carriers of disease, and a graphic demonstration of the electrical variations in the active human heart by means of Einthoven's string galvanometer. No efforts had been spared to make the evening successful, and everyone carried away a very pleasant impression of the new wing and its great possibilities.

A Colston Chair for the University of Bristol.

A letter has appeared in the Bristol papers above the signatures of the Vice-Chancellor and those of the president and treasurer of the Bristol University Colston Society. This society has for some years contributed large sums to the funds, first of University College and now of the University. The letter was published on the Colston anniversary, on which certain charitable societies founded in memory of the great Bristol philanthropist, Edward Colston, commemorate his birthday by banquets (two of which, the Anchor and the Dolphin banquets, have a political importance). As the writers point out, it is not just to the memory of Colston to honour his name by means of charities only, for of his own very large donations to various public projects more than half was devoted to the furtherance of education. They ask that the present annual contribution of about £450 which their society makes to the University funds shall be raised by addition of new subscriptions to £1000, that a sum adequate for the maintenance of a "Colston chair" may be provided.

Bequests to Charities.

The Bristol papers announce that the late Dr. C. W. Belfield, formerly of Old Market-street, Bristol, has left the following legacies among others: to the Bristol General Hospital, £5000; to the Bristol Royal Infirmary, £100; and to the Bristol Eye Hospital, £100.

Nov. 29th.

[1] We are publishing a description of these buildings in a later issue.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Representation of Aberdeen and Glasgow Universities.

A MEETING of the Executive Committee of the Aberdeen University Liberal Association was held on Nov. 25th, when it was unanimously agreed—

That it having been intimated that Professor Ogston is willing to stand as an independent candidate in the interests of science and education, the members of the Executive Committee of the Aberdeen University Liberal Association, recognising his unique qualifications as a University representative, are of opinion that it is not expedient to bring forward a candidate at this election.

Professor Ogston has, however, written stating that he does not intend to offer himself as a candidate for Parliamentary honours. In a letter to Professor J. A. Thomson Professor Ogston sets out the reasons which have weighed most with him in resolving at present to abstain from seeking to represent the joint constituency. He writes: "Throughout the country the present political crisis is arousing an unusual strength of partisanship, which will compel most voters to select that candidate who will most determinedly resist the side which that voter opposes, and candidates like myself, in favour of moderate measures, will have far less prospect of favourable consideration than has been the case in any General Election within my memory. Had time sufficed for representing to the constituencies the advantages moderation offers in solving the crucial problems before the country, and especially of explaining the increasing importance to our Universities of having the interests of science, education, letters, and research regarded as the main object of their chosen Member's activities, there might have been a prospect of success for one holding such views as I. But no energy and work can possibly accomplish this, to even a moderate degree, in the available time, and the defeat of such a candidate as I should have striven to be would be a foregone conclusion. The effort would be wasted, and what is more momentous, the defeat would tell in any future contest on any candidate holding like views. I feel assured that consideration will give to these reasons a cogency they may not, at first sight, seem to possess, and that it is in the real interest of the universities that I should not stand as an independent candidate at present. There are, in addition, domestic reasons that I need not detail which have much weighed with me in forming my resolution. I can only further say that I feel a gratitude beyond my power to put into words that I should have been thought of by you and others who love our universities in connexion with their membership."

Dundee Royal Infirmary Staff and the Time-Gun.

On account of the objections taken by the staff of Dundee Royal Infirmary, the charge in the time-gun has been reduced from 4 pounds to 2½ pounds, but still the infirmary officials are not satisfied. The works committee of the Town Council has decided, however, to continue the smaller charge meantime.

Anatomical Society of Great Britain and Ireland.

At the annual general meeting of the members of the above society, held on Nov. 25th at Guy's Hospital, London, Professor Robert W. Reid, professor of anatomy in the University of Aberdeen, was elected President for the ensuing year, and his senior assistant, Dr. Alexander Low, was elected Scottish secretary of the society.

Nov. 29th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Health and the Primary Schools.

THE insanitary condition of many of the Irish primary schools has often been the subject of criticism, for many of the schools are overcrowded, and heating, ventilation, and water-closet accommodation are insufficient. It is now some years since the Irish Government made a promise to provide funds to aid in remedying this state of affairs, but so far the Treasury has failed to make the promise good. No one can defend the present state of the

school buildings. In an address delivered last week Professor Barnes, professor of agriculture in Trinity College, Dublin, commented on certain other factors of school life which act adversely on the health of the children. The minimum school age in Ireland is three years. It is no uncommon thing for infants of 3 and 4 years in Ireland to be led to school, where they have to sit for long hours, possibly in wet clothes and perhaps hungry. As a rule, no attempt is made to teach them anything but "to sit quiet," which, as Professor Barnes rightly says, is the very thing nature wishes them not to do. He maintains also that the school hours are too long. For five hours or more of the best of the day the children are deprived of fresh air and sunshine—the two great enemies of disease. There can be little doubt, as Professor Barnes says, that these factors, working on the childhood of Ireland, are responsible for that weakening of the stamina which keeps the tuberculosis rate so high in the country.

Recent Government Appointments.

Some criticism has been roused by the appointment of a medical member of the General Prisons Board, Ireland, recorded recently in THE LANCET (Nov. 12th, p. 1451). The criticism is not based on personal grounds, but on the fact that a member of the Prisons Service has not been selected. Since the prisons were taken over by the Government in 1878 all the successive medical members of the Prisons Board, with one exception, have been Local Government Board inspectors, and none of them have had any previous knowledge of prison work or of criminology. There are many medical men of high standing employed as prison surgeons, and it is not clear why promotion to the General Prisons Board has not come their way. In contrast to this is the practice in the Local Government Board, where two recent appointments of medical inspector have been given to gentlemen with experience of the Poor-law service. One of them, Mr. C. J. MacCormack of Athlone, had been for some 30 years a dispensary medical officer, and the other, Dr. Brian O'Brien of Belfast, had formerly been in the dispensary service and latterly a police surgeon.

The Royal Academical Institution, Belfast.

This old school—at which so many North of Ireland men have received their early education—had a series of centenary celebrations last week, one of which was specially enjoyable, the dinner given on Nov. 22nd, in the City Hall, by the Lord Mayor of Belfast (Mr. R. J. McMordie), who is himself an old Academical. Among the speakers were Sir Samuel Dill, Sir Joseph Larmor, Sir Almroth Wright, and Sir John Byers, all old pupils of this famous school. A centenary volume, giving the story of the school, its foundation, and history from 1810 to 1910, is shortly to be published.

Workhouse Dispensary Relief: Abuse of the Grant in Lisburn.

At the weekly meeting of the Lisburn board of guardians held on Nov. 22nd, Dr. D. C. Campbell, medical officer of the Lisburn dispensary district, reported that medical lines were being issued by wardens or guardians to persons who certainly were not entitled to dispensary relief, and who, from their position, were well able to pay for the attendance of a medical practitioner. On looking over his books he found that before his appointment the average annual issue of lines was 1500, whereas now—and the year was not closed—he had received 2100. He also instanced receiving several tickets a short time ago which were issued in the name of a local guardian, and every one of them was illegal, not being signed by the guardian himself. After a discussion the report of a committee was adopted giving the dispensary committee the power of the board of guardians to cancel tickets of the description given, so as to enable the medical officer to recover costs in the petty sessions and expose such persons through the press.

Nov. 29th.

THE National Food Reform Association are asking Parliamentary candidates for support in the effort to combat physical degeneracy by securing the standardisation of bread, the passing of a Pure Milk Bill, and a Bill dealing with patent medicines, the improvement of the teaching of cookery, and so on. Information may be obtained by sending a stamped addressed envelope to the secretary, 178, St. Stephen's House, Westminster, London, S.W.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Malta Fever Contracted in a Laboratory.

AT a meeting of the Academy of Medicine held on Nov. 15th M. F. Widal, M. Cotoni, and M. Kindberg remarked that goat's milk was the chief, but not the only means of propagating Malta fever. The slightest contact with the Micrococcus melitensis was sufficient to communicate the disease. This microbe was one of the most dangerous to those who had occasion to perform manipulations with it, and there have already been many instances of laboratory infection in countries where the disease prevailed. This misfortune had recently happened in Paris to a man who attended to the cultures in the laboratory of the three bacteriologists above mentioned. The disease followed its ordinary course with "undulating" pyrexia, profuse perspiration, and sharp pains of a myalgic character. The diagnosis was confirmed by the recognition of the Micrococcus melitensis in the blood and urine, as well as by the reactions of agglutination and fixation. Such instances of laboratory infection showed how easily Malta fever might be contracted anywhere and made evident the necessity of precautionary measures. As the agglutination reaction was commonly employed in laboratories for the diagnosis of the disease, it would be advisable to have recourse to cultures killed by the vapour of formol. M. Widal said that as Malta fever was increasing of late years in France the prevention of it ought to engage the attention of the sanitary authorities. It was necessary to make the public understand that the milk of goats should be boiled and that regulations should be made with respect to the importation of the animals. He, moreover, recommended that Malta fever should be made notifiable, as the bacteriological diagnosis of it and the method of transmission were fully known.

Cancer of the Lower Lip treated by Electro-coagulation.

Speaking at the Society of Medical Radiology and Electrotherapeutics recently, M. Fauchie-Villeplée described three cases of cancer of the lower lip which were successfully treated each at a single sitting in the practitioner's consulting-room, and without any subsequent interruption of the patients' ordinary occupations. The operations were performed under local anæsthesia by means of cocaine; deep cicatrisation took place rapidly, and only a very small scar was left. The observations were still too recent for the formation of an opinion as to the ultimate results, but from the point of view of the immediate results, electro-coagulation seemed to present several advantages. For the surgeon the operation was an easy one and did not require much apparatus, while for the patient it was a boon that only a single application was necessary and that little, if anything, had to be done in the way of previous preparation or subsequent attention. Radiotherapy, on the other hand, required several sittings. Surgical excision was not only more complicated than electro-coagulation but required the application of dressings and caused much greater loss of substance.

Ambulatory Treatment of Fracture of the Leg.

At a meeting of the Surgical Society held on Nov. 16th M. Routier presented a report on 15 cases of fracture of the leg treated on the ambulatory system by means of Delbet's apparatus. The cases were communicated to M. Routier by M. Schmid, who said that the results were excellent, both the reduction of the fractures and the retention of the bones in position being quite satisfactory. In some instances there was swelling which necessitated a modification of the apparatus. The duration of the treatment seemed to be shorter than usual, and on the removal of the apparatus the muscles showed no atrophy, neither had the integuments suffered in any way.

Appointment at the Faculty of Medicine.

At the general meeting of the Faculty of Medicine which was held on Nov. 24th Professor Landouzy was recommended for re-election as dean; out of a total of 59 votes 57 were given in his favour.

Treatment of Talipes Equino-varus.

At a meeting of the Pediatric Society held on Nov. 15th M. Jalaguier and M. Lamy showed a child who had suffered

from talipes equino-varus and had been operated on, by *évidement* of the astragalus, an operation which, of course, did not dispense with the necessity for the post-operative measures which were employed in orthopædic surgery. The operation was an easy one, and by far the least serious of those which were applicable to the bones of the foot; it might even be performed on a suckling infant. The loss of blood was insignificant, and risk of infection was avoided by the smallness of the incision in the skin and the absence of any thread or catgut. The correction of the malformation was perfect no subsequent shortening of the foot occurred, and the tibio-tarsal movements were preserved.

Nov. 28th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Avoidance of Pluralism in Hospital Appointments.

BY a recent change of policy in the making of appointments to private hospitals, a very welcome opportunity of using their knowledge for the public benefit is being given to the large number of *privat-docenten* living in this city. This new departure has for its aim the prevention of multiple holding of offices in hospitals. Hitherto in private charitable institutions the same man has very often filled two similar or even dissimilar appointments, and it has not been uncommon for a professor to occupy the position of consultant for some specialty or other in four or five different institutions, whilst hundreds of *privat-docenten* were condemned to comparative idleness. Now these hospitals have made it a rule to apportion such appointments—they are all honorary only—between two or more of the younger men; this will also hold good in the hospitals conducted by religious corporations, so that in a few years a number of the younger and more active scientific workers will have their appointments. Hitherto, even the posts of specialists for the working men's sick clubs and similar friendly societies have often been the object of cumulation. These appointments, too (they are, of course, not purely honorary, but carry some remuneration with them), will in future be given preferably to comparatively young men not yet holding any other similar post. In that respect the outlook for the better qualified men in Vienna is improving.

Proposed New Regulations for the Management of Hospitals and Public Charities.

The independence of the hospital staff will be seriously interfered with if some new legislative proposals should become law. The circumstances are that the political party now in power in Lower Austria is endeavouring to get into its hands the entire control of the public charitable institutions, including the hospitals and university clinics, under the pretext of financial consolidation of the bankrupt Hospital Fund. The latter fund is utterly inadequate and suffers from a chronic deficit, for which hitherto no remedy has been found, because neither the financial department of the State, nor that of the Empire, nor the municipalities, are willing to take over the indebtedness of the fund amounting to some 16 million kronen (£700,000). A scheme has now been worked out by the financial experts of the ruling party, which would not only provide the money necessary to pay off the debts, but would also ensure working capital for all the hospitals in Vienna and Lower Austria. The scheme necessitates a new tax of 5 per cent. upon all the rates and taxes levied hitherto throughout the area in question—no pleasant news for the public. It would also provide for all these institutions a governing body, which would contain, amongst 32 members, two medical men as representatives of the medical profession. The past history of this political party does not warrant the expectation that it will give considerate treatment to scientific and other medical requirements, and the hospital staff would be at the mercy of an official appointed by the governing body, whereas at present medical influence is nearly paramount in the great majority of hospitals here. It is also intended to introduce the system of whole-time hospital appointments whereby the holders of these positions would be bound never to take up private practice. In this way young medical men would be practically debarred from acquiring hospital experience before settling down in private practice, which would be a very undesirable prospect. Nevertheless, there is great danger that the Bill to this effect will be passed even if without those clauses which are simply impossible; in any case the effect which it would produce upon the medical profession would be so deleterious that a strenuous opposition is being already organised.

"606."

The great interest excited by Professor Ehrlich's discovery of the powerful microbicide termed "606" has been well illustrated in a discussion on its use, which took place quite recently in the Vienna Gesellschaft der Aerzte. The balance of opinion was evidently favourable to the new remedy, although several unpleasant temporary symptoms have been caused by it. For instance, acute neuritis of the vestibular nerve has been observed by Beck and slight pyrexia and malaise by other medical men. Ullmann has found by radiographic investigations that the deposit produced in the tissues by the injection was still present in the third week, the inference being that an injection must not be repeated earlier. In the clinic of von Neusser the action of "606" upon spirilla and spirochætæ has been carefully studied, and it was found that for them the substance was a powerful germicide. The usual dose administered here is from 0·4 to 0·5 gramme (from 6 to 7½ grains), preferably in a neutral solution. It has been tried with good effect in initial stages of progressive paralysis and was very useful in the painful stage of incipient tabes dorsalis. A very interesting communication on this subject was made by Dr. Kobler of Bosnia. In that part of Austria syphilis is very common, but it is easily influenced by mercury and iodides. A systematic investigation has been instituted by the Austrian Government in this new province, and the entire population would in course of time be examined for syphilis. Up to the present date 650 syphilitic patients who had had no treatment have received injections of "606," and were being kept under observation. The experience of several eminent clinicians showed that this substance was, as a rule, more efficacious in the early stages of the disease than the old remedies, and that in inveterate refractory cases it sometimes acted wonderfully well, but that there were a good many cases in which mercury and iodide of potassium could not be dispensed with. Wassermann's reaction was often positive for three or four weeks after the injection of "606," and relapses have been observed in Vienna as early as two weeks after the injection. It was therefore more than probable that the present mode of administration was not yet the ideal one. All the speakers agreed that it was inadvisable to use this substance in advanced cases of meta-syphilitic (systemic) affections of the nerves, and that its exact position in the materia medica has not yet been ascertained.

Nov. 28th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Convalescent Soldiers.

THE following notification has been issued by the Army Department, Principal Medical Officer's Branch, Simla:—

The station selected for the transfer of weakly soldiers to India during the winter instead of sending them as invalids to England are: *Kasauli* and *Subathu* for the reception of cases from the 1st, 2nd, 3rd, 4th, 5th, 7th, and 8th Divisions (except the Presidency Brigade); *Lebong* for the reception of all cases in the Presidency Brigade and Burma; *Mount Abu* for the reception of all cases in the 5th Division, for which Kasauli is not considered suitable. *Ourandhar* and *Khandhalla* for the reception of cases from the 6th Division; *Wellington* for the reception of cases in the 9th Division; *Karachi* for the reception of special cases from the 1st, 2nd, 3rd, 4th, and 7th Divisions. *Colaba* for the reception of special cases from the 9th Division. As regards the 4th Division, the men might in the first instance be interchanged between *Quetta* and *Karachi*, otherwise they should be sent to Kasauli.

The following stations have been reserved for enteric convalescents: Naini Tal for the reception of cases from the 1st, 2nd, 3rd, 4th, 7th, and 8th Divisions, and Jubbulpore, Jhansi, and Mhow. Wellington: An enteric convalescent depôt has been established for the 6th, 9th, and Burma Divisions and for Kamptee and Sitabuldi, also for Mhow and Jubbulpore when accommodation cannot be made available for convalescents at Naini Tal.

Report of the Chemical Examiner and Bacteriologist to the Government of Burma for 1909.

Major F. N. Windsor, chemical examiner and bacteriologist to the Government of Burma, in a report on the work carried out in his laboratories during 1909, shows that the number of articles examined by him has increased from 7274 in 1908 to 17,696 in the year under report. A great deal of the extra work thrown on the chemical examiner was caused by the large consignments of cocaine seized by the Excise Department, as the importation of this drug into British India and Burma has been forbidden except for medicinal purposes. The number of analyses made in the case of suspected human poisoning increased by 25 over the previous year, showing that crime of a nature requiring aid from the expert chemist for investigation is by no means decreasing in Burma. The number of cases connected with bloodshed increased by 57, and the articles by 103, while the percentage of detection was 51·4 as compared with 47·5 in 1908. The number of rape cases was 175, with a percentage of detection of 49·7. In the rainy season it is noted that any method of examining seminal stains frequently failed owing to bacteria invading and obliterating the spermatozoa. Major Windsor directs attention to the unfit condition of his laboratory for both chemical and bacteriological investigations, and Colonel W. G. King, C.I.E., I.M.S., late Inspector-General of Civil Hospitals in Burma, in his covering letter forwarding the report to the Secretary of the Government of Burma, expresses an opinion that the small sum of Rs. 25,000 which it is proposed to allot will be insufficient for the requirements of a laboratory worthy of the province.

Nov. 5th.

Obituary.

ANGELO MOSSO.

THE Senator Angelo Mosso died on Nov. 24th in Turin, at the age of 64. Comparatively short as was his life, he played many parts in the domain of biology, and in all of them acquitted himself with a skill and an address that explain the sense of loss which scientific Italy is feeling to-day. One of a gifted family, he enrolled as a student of medicine in the university of his native Turin, and, after a brilliant graduation, he entered the medico-military service. In this capacity he attended post-graduate courses at sister seats of learning, first in Italy, where for two years he worked with Moriz Schiff, then holding the chair of physiology in Florence, and afterwards in Germany, where he was a diligent student under Ludwig of Leipsic. Thence he proceeded to Paris, and returned in 1876 to Turin, an accomplished physiologist, with special knowledge of the virtues and action of drugs. His Alma Mater, on the strength of this, installed him in the chair of Materia Medica. With the aid of the government and the "Consorzio Universitario" he established in connexion with this professorship the first laboratory of pharmacology in Italy—an initiative since followed up in the sister schools. When Jakob Moleschott, the illustrious biologist and physiological chemist who, under the auspices of Cavour, rehabilitated the scientific bases of medical study in Italy, was transferred from Turin to Rome, Angelo Mosso was chosen to replace him in the Turinese chair—a choice more than justified by the ability with which he maintained the traditions of his Dutch predecessor. His prelections came to be the most frequented of the Subalpine School, and relays of students passed through his hands to fill posts of trust in the biological sciences throughout academic Italy. Honours of many kinds now came to him. He was elected Rector Magnificus of his Alma Mater and communal councillor for the city, in which capacity he did invaluable work in public hygiene and education. A favourite at Court, he was made in rapid succession Commendatore of SS. Maurice and Lazarus, Commendatore of the Crown of Italy, and decorated with the Cross of the Legion of Honour; while as Senator of the kingdom he showed himself an enlightened legislator, particularly in those questions, hygienic and educational, in which he had given such evidence of proficiency in his native city. Scientific distinction also fell to his lot in ample measure. He was a Member of the Academia dei Lincei of Rome (which corresponds to the British Royal Society), and also of a long list of learned bodies, Italian and foreign—the Imperial Society of Berlin having, indeed, elected him Corresponding Fellow only a few days before his death.

Master of a ready pen, he contributed largely and effectively to the literature of his favourite subjects, first on the action of tartar emetic, then on that of chloral, followed by monographs, "Sulle Irritazioni del Cervello," and, not less original and illuminating, "Sul Modo di Scrivere i Movimenti dei Vasi Sanguigni" ("On the Mode of Recording the Movements of the Blood-vessels"), "Sulla Attività Diastolica del Cuore" ("On the Diastolic Activity of the Heart"), and "Sul Modo di Scrivere i Movimenti del Cervello nell' Uomo" ("On the Mode of Recording the Movements of the Brain in Man"). This last work, coupled with his invention of the "strumento misuratore" (measuring instrument) enables us to compute the time, the duration, the degree of a sensation from without transmitted to the brain in the most diverse ways. On the strength of this he rose to the front rank of Italian physiologists and obtained the prize of 10,000 francs awarded for original research by the Accademia dei Lincei. On the lines of this work he published most interesting and suggestive monographs on Sleep, in its physiological and hygienic aspects, to say nothing of treatises on Respiration, on the Movements of the Intestine, on the Systemic Circulation, on the Temperature of the Brain, on the Apparent Death of the Heart, on Respiration in Tunnels, on the Ptomaines, as well as the widely diffused *opuscules* addressed *ad populum* on "Fear" and on "Fatigue."

One great achievement of his busy life was the foundation of the Institute for Nature Study on the Monte Olen, some 9000 feet above sea-level, in which he was loyally aided by brother scientists, Italian and foreign, and also by the subsidies of the home and continental governments. It was in 1905 that, together with a few of his class assistants, he worked at the "Capanna Margherita" (the hut called after the Queen Dowager of Italy, an enthusiastic mountaineer) and carried out his researches on the phenomena of respiration at altitudes above the snow-line. From this took origin the institute, now open for some ten weeks of the last summer and early autumn to nature-students of such nationalities as have subsidised it, and described in THE LANCET of Sept. 4th, 1909, p. 730. Already it has amply rewarded its originator and his coadjutors by the observations taken, classified, and put on record by its *personnel* on zoology, mineralogy, botany, meteorology, and, indeed, on every subject of scientific interest in the Alpine world. It will indeed be the true monument and, in a sense, the mausoleum of Angelo Mosso—a "point of pilgrimage" to succeeding generations of students, compatriot and continental, colonial and trans-Atlantic, intent on doing homage to the mentally gifted and philanthropically inspired investigator, teacher, and counsellor, whose death all Italy and, with her, the brotherhood of science are now mourning.

Professor Mosso's health had been showing signs of deterioration for some years back. A spinal affection had been partially overcome by relaxation of indoor work, only to be succeeded by symptoms of diabetes which still further curtailed the hours spent in the laboratory and indicated the open-air life to which he accordingly devoted himself. Even in these conditions his scientific and eudcational interests found congenial scope. He became, as his colleagues dubbed him, the "Apostle of Physical Exercise," inuring the academic youth to athletic games mainly on English lines and founding football clubs which have already given a good account of themselves "at the goals." The distraction of foreign travel, also prescribed, opened up to him a new field for investigation, and visits to Crete and Sicily fructified in admirable monographs on the treasure-trove of the pre-historic ages. But by this time the intense activity of mind and body was beginning to tell—"the sword was visibly wearing out the scabbard"—and the last few weeks saw him a prostrate invalid, loyally and lovingly attended by all that was most skilful and experienced of the Subalpine School. Gradually the faculties became blunted and the brain ceased to respond, till, on the morning of the 24th, his bed surrounded by his family and his more intimate colleagues,

he succumbed to what the medical bulletin affixed to the University gates calls "œdema cerebrale, originato da intossicazione diabetica." No more imposing funeral than that which closed "the last scene of all" has for many a year been witnessed in Turin, and the *oraisons funèbres*, eloquent and impressive as they were, conveyed but inadequately the sense of bereavement with which all Italians, from the King to the humblest of his subjects, are now mourning Angelo Mosso, "gone over to the majority."

THOMAS FRANCIS SPITTAL CAVERHILL, M.B., C.M. EDIN., F.R.C.P. EDIN.

THE death of Dr. T. F. S. Caverhill of Edinburgh took place at his brother's house at Jedburgh on Nov. 4th. For nearly a year he had been in failing health and unable to undertake active work, but it was not thought that his death would take place so soon. Born at Crichness, in the heart of the Lammermoors, he was the bearer of an ancient Scottish border name. He received his medical education at Edinburgh, where he graduated M.B., C.M. in 1878. In 1882 he was admitted a Member of the Royal College of Physicians of Edinburgh, becoming a Fellow in the following year. He was a resident physician and a resident surgeon of the Royal Infirmary and of the Royal Maternity Hospital, Edinburgh. Later he was physician of the New Town Dispensary and surgeon of the Eye Dispensary, Edinburgh.

For many years Dr. Caverhill was medical officer of health of the county of Haddington. He was greatly interested in army medical matters and held the rank of Surgeon-Colonel in the Lothian and Berwick Imperial Yeomanry. His sympathies for wounded cavalry soldiers were aroused by some public remarks of General Drury-Lowe on the cruel and apparently unavoidable hardships endured in long and rapid cavalry marches through a hostile country during the Egyptian campaign. After many experiments he evolved the mounted ambulance scheme for cavalry wounded, which was favourably commented on by H.R.H. the late Duke of Cambridge. Some of our readers may have witnessed the interesting display of Dr. Caverhill's Mounted Ambulance Company at the Military Tournament in the "eighties."

He was a vigorous advocate of the open-air treatment of pulmonary tuberculosis, and did much to further the "crusade against consumption" in Scotland. He established at his own expense the Manor Valley Sanatorium at Caverhill near Peebles, so that those who could not afford the usual rates of a private expensive sanatorium could, for a moderate fee, secure proper treatment there. With characteristic generosity he often went a step further and dispensed with fees altogether in necessitous cases. He held the traditional high ideals of the profession and constantly went out of his way to relieve other than physical miseries which so often are brought under the eye of a medical practitioner who enjoys the confidence of his patients, and was accordingly beloved to no ordinary degree.

Dr. Caverhill was a lover of all that related to Scottish lore and character, and gathered together a rare collection of prints of Mary Queen of Scots, of her contemporaries, and of her times. The prints being carefully chosen and arranged, form in themselves an interesting history of that remarkable queen. In Dr. Caverhill the medical profession has lost not only an able exponent of our science, but an exceptionally cultivated man, generous, public-spirited, and well-informed.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. N. Manolesco, formerly clinical professor of ophthalmology in Bucharest.—Dr. Gagnière, *professeur agrégé* in the Medical Faculty of the University of Montpellier.—Dr. Hugo Behrens, a German medical officer who wrote a number of novels under the *nom de plume* B. Renz. He was 90 years of age.—Dr. Baynes Walker, formerly professor of medicine at the Woman's Medical College of Pennsylvania in Philadelphia.

PROPOSED COTTAGE HOSPITAL FOR ST. AUSTELL.—About £1500 have now been raised towards the erection of the proposed cottage hospital for St. Austell. The institution is much needed for the district, and it is hoped that the work will shortly be commenced.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—H. E. Battle (Sections I. and II.), Leeds and University College Hospital; C. B. Davies (Sections I. and II.), Manchester; E. B. Keen (Section II.), Charing Cross Hospital; J. M. Moll (Sections I. and II.), Utrecht and St. Bartholomew's Hospital; W. H. Parkinson (Sections I. and II.), Manchester; and C. J. Thompson (Sections I. and II.), Birmingham.

Medicine.—E. G. Brisco-Owen (Section I.), Cardiff and Royal Free Hospital; A. Cordon (Section II.), Birmingham; and C. B. Davies (Sections I. and II.), Manchester.

Forensic Medicine.—C. B. Davies, Manchester; C. W. Jenner, London Hospital; J. M. Moll, Utrecht and St. Bartholomew's Hospital; and A. J. V. Mathews, St. Mary's Hospital.

Midwifery.—C. B. Davies and W. H. Parkinson, Manchester.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—H. E. Battle, A. Cordon, C. B. Davies, J. M. Moll, and C. J. Thompson.

FOREIGN UNIVERSITY INTELLIGENCE.—*Genoa:* Dr. Vittorio De Cigna has been recognised as *privat-docent* of Laryngology and Otology.—*Heidelberg:* Dr. Erwin Rohde has been recognised as *privat-docent* of Pharmacology.—*Kiel:* Dr. Arthur Wilke has been recognised as *privat-docent* of General Pathology and Pathological Anatomy.—*Lyons:* Dr. Guillemard has been appointed (after public competition) Professeur *agrégé* of Biological and Medical Chemistry.—*Padua:* Dr. Luigi Maccagi has been recognised as *privat-docent* of Operative Medicine.—*Palermo:* Dr. Vincenzo Greco has been recognised as *privat-docent* of Medical Pathology.—*Pavia:* Dr. Domenico Cesa Bianchi has been recognised as *privat-docent* of Pathological Histology.—*Parma:* Dr. Mario Pelagatti, Professor in Sassari, has been appointed Professor of Dermatology in succession to the late Dr. Mibelli.—*Prague (German University):* Dr. Robert Salus has been recognised as *privat-docent* of Ophthalmology.—*Rome:* Dr. Stefano Mircoli of Genoa has been recognised as *privat-docent* of Medicine.—*Saratoff:* Dr. Pavloff of Kharkoff has been appointed to the Chair of Histology.—*Sienna:* Dr. Luigi Baldassari has been recognised as *privat-docent* of Hygiene.

ROYAL DENTAL HOSPITAL OF LONDON.—The annual dinner of the staff and past and present students of the Royal Dental Hospital of London was held in the Whitehall Rooms of the Hotel Metropole on Nov. 26th. Mr. H. Lloyd Williams presided, and amongst those present were Dr. H. Campbell Thomson, dean of the Middlesex Hospital; Mr. Sidney Spokes, dean of the National Dental Hospital; Mr. L. A. Bidwell, dean of the Post-Graduate College of the West London Hospital; and Mr. H. S. Clogg, vice-dean of the Charing Cross Hospital. The announcement that their Majesties King George and Queen Mary had consented to act as patrons of the hospital was received with hearty applause. In proposing the toast of the past and present students of the hospital and school, Mr. Lloyd Williams having congratulated the prize-winners of the year, went on to say how glad he was to see his old friend, Mr. J. F. Pink, once more amongst them after his severe illness. Having referred to the many difficulties experienced by the staff and students in the early days of the hospital, the chairman said he considered that the new building in Leicester-square was one of the best that had ever been erected for a special purpose. The influence of the hospital was felt by the students in their after work, and all carried with them happy memories of the atmosphere of the old school. Mr. W. A. Maggs, responding for the past students, said that the authorities of the different dental schools worked together without jealousy, both staff and students feeling the greatest pleasure in helping those in need of dental work. The various deans frequently met together and consulted on the best means of assisting dental science as a whole. He hoped in the near future to see a research fund instituted to enable men to devote themselves to this special branch. Mr. F. Quayle, chief prize winner, mentioned that at the present time the students numbered amongst themselves men from South Africa, United States, and Australasia, and the effect of this was to widen the minds of Celts, Saxons, and Colonials alike. In his speech the dean, Mr. W. H. Dolamore, endorsed what the chairman had said in reference to the return of their secretary, Mr. Pink. He felt he could not let the

occasion pass without saying how much they were indebted to Mrs. Pink, who had so ably carried out her husband's work during his enforced absence. Mr. Dolamore alluded to the warm affection felt for the Royal Dental Hospital by its old students. Mr. Bidwell, responding for the visitors, said that no one recognised more than he did the importance of dentistry. Many patients would never have passed through his hands if they had applied in their early days to a dental surgeon. He felt it was more important to teach children the use of the toothbrush than to play the piano. Mr. J. F. Colyer chairman of the Medical Committee, in proposing the health of the chairman, stated that the hospital never had a more faithful servant or the students a more patient teacher. He was in all things a man of good judgment and active sympathy, whose sound rules laid down when he was the first curator of the mechanical department contributed so much to its success. In his reply, Mr. Lloyd Williams referred to the pleasure that the visitors experienced at the "At Home" that afternoon at the hospital. They all appreciated the excellence and great variety of the work done there, and he wished to express on behalf of the old students their indebtedness to the demonstrators for the trouble they had taken.

THE BRITISH MEDICAL BENEVOLENT FUND GUILD.—There was a large attendance at the New Hospital for Women on Nov. 29th, when Lady Frederick Brudenell Bruce presided over the annual meeting of the British Medical Benevolent Fund Guild. The various reports, which were read by Lady Tweedy, Mrs. H. D. Rolleston, Mrs. Hutchison, and Mrs Liveing, showed that much useful work in relieving distress among members of the medical profession and in helping the widows and orphans of medical men had been accomplished during the year. The treasurer's statement showed a balance on the year's working of £163. The reports were unanimously adopted. Lady Frederick Bruce congratulated the Fund on the excellent result of their work and made a special appeal on behalf of the "Father Xmas" branch. Sir William Church, in seconding the adoption of the reports, said that it was impossible for the parent society, the British Medical Benevolent Fund, to adequately deal with many of the distressing cases which came before its notice, and this proved the extreme necessity for the guild through which the personal services of ladies could be given. Various votes of thanks concluded the meeting.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on Nov. 24th, with Sir Francis Champneys in the chair. A letter from the clerk of the Privy Council requesting the Board to furnish the Lord President with statistics as to the number and distribution of certified midwives in the country for the use of the Austro-Hungarian Ministry of the Interior was considered and directions were given for the information to be supplied. A letter was considered from Dr. J. Niven, medical officer of health of Manchester, forwarding a copy of a resolution passed by the local supervising authority for that city as to the taking and recording of temperature. The Board decided that Dr. Niven be informed that the matter will be considered on the revision of the rules which is about to take place. A letter was considered from the Birkenhead Medical Society suggesting an amendment of Section 1 (2) of the Midwives Act, 1902, so as to prevent uncertified women holding themselves out as "emergency" women and practising as midwives with impunity. The Board decided that the Birkenhead Medical Society be informed that the suggestion will be borne in mind should an opportunity arise for dealing with it. A letter was considered from a certified midwife suggesting that the Board should issue a badge as the distinguishing mark of a certified midwife. It was decided that the question be referred to the Standing Committee for consideration and report. A letter was read from the clerk of the Cheshire county council reporting a certified midwife for an infringement of Section 1 (4) of the Midwives Act, 1902, and calling the attention of the Board to the fact that the Act prescribes no penalty for a breach of this subsection. The Board directed that the local supervising authority be thanked for their communication. Section 1 (4) reads as follows: "No woman certified under this Act shall employ an uncertified person as her substitute." Letters were considered from Dr. A. F. Whitwell of Shrewsbury, claiming a fee of 1 guinea for information given in the case of a certain midwife. The Board decided that a fee of 1 guinea be paid to Dr. Whitwell without prejudice to the action of the Board in any similar case arising thereafter.

THE late Dr. M. Krönlein, professor of surgery at the University of Zürich, has bequeathed a sum of £12,000 to build a surgical ward for children, £2000 to the pension fund of university professors, and several other sums of £400 each to various other charitable university institutions.

A COUNTY MEDICAL OFFICER FOR WEST SUSSEX.—The West Sussex county council at its meeting on Nov. 25th decided to appoint a county medical officer of health at a salary of £500 per annum with travelling and clerical and other out-of-pocket expenses. The recommendation of the public health committee was that the salary should be £600 per annum with the same additions, but the council decided on the smaller sum. It was explained at the meeting that the appointment was made in accordance with the provisions of the Housing and Town Planning Act, and a general order of the Local Government Board prescribing certain duties to be performed by the county medical officer of health; but although it was quite clear that the officer was necessarily responsible for the inspection of school children it was physically impossible for him to carry out those duties and the council had no intention of interfering with the duties of the present school medical officer.

DEATH OF MR. TREGENNA BIDDULPH GOSS.—Mr. T. B. Goss died at his residence, 1, The Circus, Bath, on Nov. 21st, in his seventy-fourth year. The deceased received his medical education at the Middlesex and Westminster Hospitals, and qualified M.R.C.S. Eng. and L.S.A. in 1863 and 1864 respectively. Mr. Goss shortly afterwards commenced practice in Bath, where he soon became very popular. He held several appointments; he was medical officer to the Royal School for Officers' Daughters, Lansdown; to Partis College, Weston; and for many years he was honorary surgeon to the Eastern Dispensary, Bath. From 1871 until 1908 he was medical officer to the Bath Post Office. Mr. Goss was a staunch Churchman, and for several years was sidesman at Walcot Church. He was also a prominent Freemason. By his death Bath has lost one of her oldest and most respected members of the medical profession. The funeral took place at Locksbrook Cemetery, Bath, on Nov. 25th. In accordance with the wishes of the deceased, the body was previously cremated at Woking.

SALE OF WAX ANATOMICAL MODELS.—A number of wax anatomical models were sold by Mr. J. C. Stevens at his auction rooms, King-street, Covent Garden, London, on Nov. 25th, by the order of the trustees of a deceased medical man. They were the personal work of the late M. L. Loreau, préparateur to the Salpêtrière and Bicêtre Hospital, Paris, and "considered by experts to be the finest in existence." All were mounted in glazed walnut cases, and the original cost was stated to have been nearly £500. They comprised models of the brain as a whole and various sections of the base of the brain, of the spinal cord with its membranes, ganglia, &c., the nervous and vascular supply of the teeth, and models showing the glandular and muscular structure of the lower jaw. One half-length model represented various hernia in the male. A case of specimens, comprising sets of fœtal, deciduous, and permanent teeth, the antrum of Highmore, the inferior dental canal, edentulous jaws, &c., was included. The total sum realised was £27 7*s*.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on Nov. 18th. There were present Dr. F. de Havilland Hall (in the chair), Dr. M. Greenwood, Dr. M. G. Biggs, Dr. F. J. Allan, Dr. F. C. Martley, Dr. J. Pickett, Dr. J. W. Hunt, Dr. H. A. Sansom, Dr. W. Knowsley Sibley, Mr. Edward Bartlett, Mr. J. Brindley James, Mr. F. S. Edwards, Mr. Frederick Wallace, and Dr. J. B. Ball. The records of the business for the month of October were exceptionally good, showing a considerable margin in favour of the funds. The sickness experienced has been unusually light, and there is no doubt that 1910 will add a considerable sum to the already large financial reserves of the society. A very good feature of the

business is the large number of members who avail themselves of the facilities offered by recent alterations in the rules to increase the amount of their sickness benefits. Prospectuses and all further particulars on application to Mr. F. Addiscott, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

UNIVERSITY OF LONDON: GENERAL ELECTION.—CANDIDATURE OF SIR VICTOR HORSLEY.—At a meeting of the Liberal Association of the University of London held on Nov. 28th, Sir Thomas Barlow being in the chair, Sir Victor Horsley, F.R.S., was unanimously adopted as the Liberal candidate. The nomination will be held at the University on Saturday, Dec. 3rd, at 12 noon, and the polling begins on Monday, Dec. 5th, at 8 A.M., and continues till Friday, Dec. 9th, at 4 P.M.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Report on Unqualified Practice.

THE report founded on the Local Government Board inquiry into the extent of the practice of medicine and surgery by unqualified persons has been issued in the form of a small Blue-book. The information embodied in it has been supplied by medical officers of health. The Blue-book throws a lurid light on the evils arising from unqualified practice.

The Dissolution.

Parliament was prorogued, and afterwards dissolved, on Monday, Nov. 28th. The new Parliament after the General Election will assemble on Jan. 31st, 1911.

HOUSE OF COMMONS.

WEDNESDAY, NOV. 23RD.

The Superannuation of Asylum Officers.

Sir WILLIAM COLLINS asked the Secretary of State for the Home Department whether, in the event of any officer of an asylum, to which the Superannuation Act of last session applied, believing himself to be prejudiced in regard either to his right to a superannuation allowance, or as to the amount thereof, he would be prepared to receive and determine an appeal in accordance with Section 15 of the Act.—Mr. CHURCHILL wrote in reply: I am about to take the opinion of the law officers of the Crown on several points which have arisen under Section 15 of the Asylum Officers' Superannuation Act, and I therefore think it would be better to defer answering this question for the present.

THURSDAY, NOV. 24TH.

A Death from Anthrax.

Mr. JOWETT asked the Secretary of State for the Home Department whether his attention had been called to the death of John Beauland, who recently contracted anthrax at the works of Messrs. J. E. Addy and Company; and whether he would examine the depositions of evidence given at the subsequent inquest.—Mr. CHURCHILL answered: I have received reports of this case, from which it appears that the requirements of the regulations which apply to the sorting of wool were not adequately observed by the firm. A prosecution of the firm has been directed.

Dust in Wool-combing Factories.

Mr. JOWETT asked the Secretary of State for the Home Department whether the inquiry which he directed to be made last January into the conditions under which the process of raising a stack of wool was carried on and the means of protecting the workers in wool-combing factories against dust had been made, and, if so, who conducted the inquiry; and what was the nature of the report.—Mr. CHURCHILL replied: Inquiries have been made by the factory inspectors in the districts concerned at all the works which are under the wool-combing regulations as to the conditions under which the process of raising a stack or blending is carried on and the means for protecting workers against dust. The reports which have been received point to the need of steps being taken to safeguard the workers and show that in some works satisfactory measures had already been adopted, such as the use of a steam jet for keeping down the dust and exclusion of workers until the dust is settled, or the provision of exhaust ventilation. Before taking action the chief inspector has thought it desirable to consult the Bradford Anthrax Investigation Board, and it is hoped that its reply will be received very shortly.

BOOKS, ETC., RECEIVED.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

Genito-Urinary Surgery and Venereal Diseases. By J. William White, M.D., and Edward Martin, M.D. Ninth edition. Price 21*s.* net.

Applied Anatomy. By Gwilym G. Davis, Associate Professor of Applied Anatomy, University of Pennsylvania; M.D., Universities of Pennsylvania and Goettingen. With 630 illustrations, mostly from original Dissections and many in Colour, by Erwin F. Faber. Price 24*s.* net.

Disease of the Pancreas, its Cause and Nature. By Eugene L. Opie, Professor of Pathology, Washington University, St. Louis, Mo. Second edition, rewritten. Price 15*s.* net.

Normal Histology. With Special Reference to the Structure of the Human Body. By George A. Piersol, M.D., Sc.D. Eighth edition (rewritten). Price 15*s.* net.

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.

New Reduction Methods in Volumetric Analysis. A Monograph. By Edmund Knecht, Ph.D., M.Sc. Tech., F.I.C., and Eva Hibbert. Price 3*s.* net.

The Voice: An Introduction to Practical Phonology. By W. A. Aikin, M.D. Price 7*s.* 6*d.* net.

The Dawn of Character: A Study of Child Life. By Edith E. Read Mumford, M.A. Price 3*s.* 6*d.*

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta. ESSON, R. L., AND CO., Johannesburg.

Practical Motherhood. By Helen Y. Campbell, L.R.C.P. and S. Edin., L.F.P. and S. Glasg. Price 7*s.* 6*d.*

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta. HODGES, FIGGIS, AND CO., LIMITED, Dublin.

Dublin University Press Series. A History of the Theories of Aether and Electricity from the Age of Descartes to the Close of the Nineteenth Century. By E. T. Whittaker, Hon. Sc.D. Dub., F.R.S.; Royal Astronomer of Ireland. Price 12*s.* 6*d.* net.

MACLEOD, EVAN, 30, Holborn, London, E.C.

Surdus in Search of His Hearing. An Exposure of Deafness Quacks, Frauds on the Deaf, and a Reliable Guide to the Best Means of Help for the Deaf. Second Section. By Evan Yellon, Editor of the Albion Magazine for the Deaf, &c. Price, two volumes, 5*s.* net.

MEDICAL SCIENCE PRESS, Saint Louis. (Distributing Agents: INTERSTATE MEDICAL JOURNAL COMPANY, Metropolitan Building, St. Louis, Mo., U.S.A.)

Andreas Vesalius, the Reformer of Anatomy. By James Moores Ball, M.D. Price $5.00.

MILLS AND BOON, LIMITED, London.

The Food Reformer's Companion: With Ninety Recipes. By Eustace Miles, M.A. Price 2*s.* 6*d.* net.

NEWS PRINTING CO., Paterson, N.J., U.S.A.

Thirty-third Annual Report of the Board of Health of the State of New Jersey, 1909, and Report of the Bureau of Vital Statistics.

OLIVER AND BOYD, Edinburgh.

The Transactions of the Edinburgh Obstetrical Society. Vol. XXXV. Session 1909–1910. Price not stated.

PARTRIDGE, S. W., AND CO., LIMITED, London.

The Probationer. By A. M. Irvine. Price 2*s.* 6*d.*

PEARS, A. AND F., LIMITED, 71–75, New Oxford-street, London, W.C.

Pears' Shilling Cyclopædia. Entirely and absolutely new edition. Price 1*s.*

SAUNDERS (W. B.) COMPANY, Philadelphia and London.

A Text-book of General Bacteriology. By Edwin O. Jordan, Ph.D. Second edition, thoroughly revised. Price 13*s.* net.

A Manual of Diseases of the Nose, Throat, and Ear. By E. B. Gleason, M.D., LL.D. Second edition, thoroughly revised. Price 12*s.* net.

Biology, General and Medical. By Joseph McFarland, M.D. Price 7*s.* 6*d.* net.

SCIENTIFIC PRESS, LIMITED, London.

Surgical Instruments and Appliances used in Operations. An Illustrated and Classified List, with Explanatory Notes. By Harold Burrows, M.B.Lond., B.S., F.R.C.S. Third edition, revised and enlarged. Price 1*s.* 6*d.* net.

SHERRATT AND HUGHES, London and Manchester.

Medical Etiquette. (Handbook of Elementary Deontology.) By Dr. George Surbled, Physician to the Anne-Marie Hospital, Professor of Deontology at the Paris Post-Graduate Medical School. Translated from the second French edition by W. P. Grant, M.Sc., M.B., Ch.B., M.R.C.S., L.R.C.P. With a Preface by Sir Dyce Duckworth, Bart., M.D., LL.D. Price 5*s.* net.

SMITH, ELDER, AND CO., London.

The Cradle of the Deep. An Account of a Voyage to the West Indies. By Sir Frederick Treves, Bart., G.C.V.O., C.B., LL.D., Serjeant Surgeon to H.M. the King, Surgeon in Ordinary to H.M. Queen Alexandra. Popular edition. Price 6*s.* net.

The Poetical Works of Mrs. Horace Dobell, with a Biographical Sketch. Price 10*s.* 6*d.* net.

"THE MEDICAL OFFICER," 36–38, Whitefriars-street, London, E.C.

The Medical Examination of the School Child. By D. A. Carruthers, M.D., D.P.H. Price 2*s.* 6*d.* net.

UNIVERSITY PRESS, Cambridge.

Plant-Animals. A Study in Symbiosis. By Frederick Keeble, Sc.D. Price 1*s.* net.

UNWIN, T. FISHER, Adelphi Terrace, London; and Inselstrasse, 20, Leipsic.

Aspects of Death and their Effects on the Living, as illustrated by Minor Works of Art, especially Medals, Engraved Gems, Jewels, &c. By F. Parkes Weber, M.A., M.D., Fellow of the Society of Antiquaries and of the Royal Numismatic Society of London. Price not stated.

VOGEL, E. D., Bookseller, Easton, Pa., U.S.A.

Internal Secretions from a Physiological and Therapeutical Standpoint. By Isaac Ott, A.M., M.D. Price $1.00.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BENTON, G. M., M.B., Ch.B. Vict., has been appointed Senior House Surgeon at the Royal Infirmary, Manchester.

BOURKE, ULICK J., L.R.C.P. & S. Edin., has been appointed Assistant Medical Officer at the Barnes Convalescent Home of the Royal Infirmary, Manchester.

BUCHANAN, JOHN D., M.B., B.Ch. R.U.I., D.P.H. Vict., has been appointed Resident Medical Officer at the Fever Hospital and Assistant to the Medical Officer of Health for Blackburn.

COWAN, JAMES, M.R.C.S., L.R.C.P., has been appointed House Physician at the Royal Infirmary, Manchester.

DAVIES, E. T. H., M.D. Lond., has been appointed Surgical Registrar at the London Temperance Hospital, Hampstead-road.

ELAM, W. H., F.R.C.S. Eng., has been appointed Certifying Surgeon under the Factory and Worshop Act for the Barnet District of the county of Hertford.

HIGGINS, T. T., M.B., Ch.B. Vict., has been appointed Junior House Surgeon at the Royal Infirmary, Manchester.

HUTCHINSON, R. C., M.B., Ch.B. Vict., has been appointed House Physician at the Royal Infirmary, Manchester.

JACKSON, R. A., M.B., Ch.B. Vict., has been appointed Senior House Surgeon at the Royal Infirmary, Manchester.

LAING, C. Y., M.R.C.S., L.R.C.P., has been appointed House Physician at the Royal Infirmary, Manchester.

PORTER, ALEX., M.B., Ch.B. Vict., has been appointed House Surgeon to Special Departments at the Royal Infirmary, Manchester.

WARBURTON, G. B., M.B., Ch.B. Vict., has been appointed Accident-room House Surgeon at the Royal Infirmary, Manchester.

WOODALL, A. F., M.B., Ch.B. Vict., has been appointed Junior House Surgeon at the Royal Infirmary, Manchester.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARNSLEY, BECKETT HOSPITAL.—Second House Surgeon, unmarried. Salary £80 per annum, and all found.

BEDFORD COUNTY HOSPITAL.—House Physician. Salary £80 per annum, with apartments, board, and laundry.

BENENDEN SANATORIUM.—Medical Superintendent. Salary £250 per annum, with rooms, board, and laundry.

BERMONDSEY INFIRMARY, Lower-road, Rotherhithe, S.E. — Second Assistant Medical Officer. Salary £120 per annum, with rations, washing, apartments, &c.

BODMIN, CORNWALL COUNTY COUNCIL.—County Medical Officer of Health. Salary £500 per annum.

BRECONSHIRE COUNTY COUNCIL.—County Medical Officer of Health and County School Medical Officer. Salary £500 per annum.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with apartments, board, and laundry.

CAIRO, EGYPT.—Medical Tutor at School of Medicine and Registrar to Kasr-El-Ainy Hospital. Salary £.E.600 a year.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £70 per annum, with board, lodging, and washing.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C. —Registrars, Assistant Anæsthetists, and Assistant Dental Surgeon.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—Consulting Surgeon.

DUBLIN, DR. STEEVENS' HOSPITAL.—House Surgeon. Salary £100 per annum, with apartments.

GLOUCESTER, BARNWOOD HOUSE HOSPITAL FOR MENTAL DISEASES.—Second Assistant Medical Officer. Salary £150 per annum, with board.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Two Assistant House Surgeons. Salary £75 per annum, with board, residence, and laundry.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with residence, board, and washing.

INDIAN MEDICAL SERVICE, India Office, London.—Fourteen Commissions in His Majesty's Indian Medical Service.

KING'S COLLEGE HOSPITAL, London, W.C.—Assistant Ophthalmic Surgeon.

LEAMINGTON SPA, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—House Governor and Secretary. Salary £200 per annum.

LEICESTER CORPORATION ISOLATION HOSPITAL.—Resident Medical Officer and Assistant Medical Officer of Health. Salary £150 per annum, with board and residence.

LEICESTER INFIRMARY.—Second House Surgeon for six months. Salary at rate of £100 per annum, with board, apartments, and washing. Also Honorary Pathologist.

LINCOLN GENERAL DISPENSARY.—Resident Junior Medical Officer, unmarried. Salary £175 per annum, with apartments, &c.

LONDON COUNTY ASYLUM, Colney Hatch, New Southgate, N.—Junior Assistant Medical Officer, unmarried. Salary £160 per annum, with board, apartments, and washing.

MANCHESTER, ANCOATS HOSPITAL.—Honorary Surgeon.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Clinical Assistants for six months.

PARK HOSPITAL FOR CHILDREN, Hither Green, S.E.—Senior Assistant Medical Officer. Salary £250 per annum. Also Assistant Medical Officer. Salary £150 per annum. Both with board, lodging, and washing.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Honorary Surgical Registrar. Also Pathologist. Salary £50 per annum.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon and House Physician, both for six months. Salary at rate of £80 per annum, with board, residence, and washing, in each case.

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East.—Milroy Lecturer for 1912.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Assistant Physician. Also Female Junior Obstetric Assistant and Clinical Assistants.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Assistant Physician.

ST. LUKE'S HOSPITAL FOR MENTAL DISEASES, Old-street, London, E.C.—Second Assistant Medical Officer, unmarried. Salary £130 per annum, with board, apartments, and washing.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing.

SOUTH UIST.—Medical Officer. Salary £100, with house.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

SWINDON, G.W.R. MEDICAL FUND SOCIETY.—Assistant Medical Officer, unmarried. Salary £300 per annum.

TREDEGAR WORKMEN'S MEDICAL AID AND SICK RELIEF FUND.—Chief Medical Officer. Salary £750 per annum, with house.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—Senior Resident Medical Officer. Salary £120 per annum, with board, residence, and washing.

WAKEFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer. Salary £140 per annum, with apartments, board, washing, and attendance.

WEST HAM HOSPITAL.—House Physician; also Junior House Surgeon. Salary of former £100, and latter £75 per annum, with board and rooms.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Assistant Physician. Also Honorary Medical Registrar.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Resident Obstetric Assistant for six months. Board and lodging provided.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, rooms, and laundry. Also Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Tredegar, in the counties of Monmouth and Glamorgan; at Stourport, in the county of Worcester; at Mid-Calder, in the county of Edinburgh; and at Poole, in the county of Dorset.

Births, Marriages, and Deaths.

BIRTHS.

ALCOCK.—On Nov. 26th, at 22, Devonshire-street, W., the wife of N. H. Alcock, M.D., D.Sc., of a daughter.

MITCHELL.—On Nov. 25th, at Birdsgrove, Woking, the wife of Howard V. Mitchell, M.R.C.S., L.R.C.P., of Clacton-on-Sea, of a daughter.

WHYTE.—On Nov. 28th, at Swatow, China, to Dr. and Mrs. G. Duncan Whyte, a daughter.

MARRIAGES.

COX—WOOLFORD.—On Nov. 1st, at Great Marlow, Bucks, Stafford Mouritz Cox, M.D. T.C.D., to Sophia Woolford, daughter of the late William Woolford, of London.

DREW—MARSHALL.—On Nov. 18th, at Bolton, Lancs., John Harmer Drew, M.D., B.S. Lond., M.R.C.S., L.R.C.P., of Plymouth, son of the late G. F. A. Drew, D.I.G. R.N., to Ada Georgiana, fourth daughter of the late Cornelius Marshall and of Mrs. Marshall of High Bank, Bolton.

MIDDLEBROOKE—WRIGHT.—At St. Chad's, Longsdon, on Nov. 24th, by the Rev. W. Langworthy, of Foston, Herbert Edwin Middlebrooke, of Long Bennington, Grantham, to Mary Ethelwyn, eldest daughter of Robert Wright, J.P., of Leek, Staffs.

STEWART—FRANKS.—On Nov. 26th, at St. Marylebone Parish Church, by the Rev. W. D. Morrison, LL.D., Rector of the Parish, Purves Stewart, M.D., F.R.C.P., of 94, Harley-street, London, W., to Elizabeth Phipps Franks, daughter of the late William Franks, Esq., of Liverpool.

DEATHS.

BRIEN.—On Nov. 24th, suddenly, at Rockferry, Cheshire, Edward Henry Brien, M.D., aged 47 years.

FORRESTER.—On Nov. 25th, at Bournemouth, Charles Carmichael Forrester, M.B., C.M., D.P.H. (late of the Ministry of the Interior, Egypt), fourth son of the late William Forrester, of Arngibbon, Perthshire.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

AN AMUSING PROPOSITION.

THE following communication has been received by a well-known medical agent; no word from us is needed to accentuate its humour:—

DEAR SIR,—With reference to your advt. in THE LANCET of this week, I have pleasure in herewith replying to same. I see that you are willing to accept a partnership, and I herewith give you brief particulars of my proposition. I have discovered a cure for the most prevalent of the venereal diseases, and I am desirous of exploiting same. I have a medical and surgical knowledge, but have not graduated and have no degrees, and must therefore have a fully qualified medical practitioner at the head of the medical section. The salary would be between £500 and £1000 per annum, and in accordance with the increase of patients, could be materially increased. The *demand* for this is *enormous*, and as my treatment only takes from 1-2 months to effect a permanent cure (whereas all other methods take 2 years), there is practically a monopoly before it. I have studied minutely the awful conditions and results brought about by this terrible scourge, and apart from any pecuniary motives, I am most anxious to exploit this, if only for the purpose of removing this dread taint from humanity, and so make life for some of the sufferers worth living. I shall be glad to go further into the matter and give you further particulars at an interview, and should be glad if you will make an appointment either by 'phone or letter. Thanking you in advance."

We are certain that this letter was written in absolute good faith, the writer believing that he was enlisting the services of the medical agent in the matter of a professional transaction.

SUPERSTITIOUS REMEDIES.

To the Editor of THE LANCET.

SIR,—With regard to the curious fact that the Welsh word *eryrod* means "shingles" as well as "eagles," will you allow me to point out that the Welsh-English Dictionary of Dr. Wm. Owen Pughe (second edition, 1832) gives the following definition: "Eryri, *s.f.* (eryr)—What is precipitated or thrown out violently, an irruption; the shingles; called also eryr and eryrod." Spurrell (third edition, 1866) gives: "Shingle—Math o grugdardd," which translated means "shingle—a kind of pustule." Richards (fourth edition, 1839) gives no definitive meaning, merely saying, "Eryr, yr eryr, or eryri, or eryrod, *s.f.*—A disease called the shingles." Although there is just a hint in Pughe's definition as to why the word is applied to the disease shingles, none of these dictionaries clear up the question raised by your correspondent as to how this use of the word came about. Hoblyn, it may be mentioned, gives as the probable derivation of the word "shingles" the Latin *cingulum*, a girdle (so-called from the situation of the disease on the trunk of the body).

One of the daily papers, in quoting from THE LANCET the original paragraph, drags in, a little unkindly perhaps, the Salisburian taunt—"the Celtic Fringe." Superstitiousness is not confined to any specific parts of the British Isles. The person who shrinks from passing beneath an upstanding ladder we rub shoulders with every day in the London streets; and the Devil-scaring horse-shoe, is it not gravely installed in many an English home? A fortnight back a lady seating herself at table in certain tea-rooms at Richmond withdrew from her muff a lump of coal which she explained she had that morning picked up in the roadway "for luck." She further volunteered the statement that a little time previously while walking along a Kensington street she saw a lump of coal on the road, and while she was looking at it a carriage stopped and a lady alighted and straightway picked up the piece of coal, asking at the same time the pedestrian why she had not appropriated it. "I thought it rather large," was the reply. "The larger the lump, the greater the luck," rejoined the lady as she re-entered the carriage proud in the possession of her talismanic treasure.

Absurd as are these things, there is an aspect of credulity to which even they must knock under—namely, that unbounded gullibility which allows in this year of grace One Thousand Nine Hundred and Ten the quack to thrive as he has never thriven before—a species of asininity, again, not absolutely peculiar to the "Celtic Fringe."

I am, Sir, yours faithfully,

Stoke Newington, Nov. 21st, 1910. WM. ROBERTS.

ERECTING A BED IN A BALCONY.

COUNSEL recently moved in the Chancery Division, before Mr. Justice Warrington, for an injunction to restrain a gentleman living in a flat at Hove from placing a canvas erection or screen in the balcony of his flat and using it as a sleeping place. Mrs. Chandless, the plaintiff, was an elderly lady who had purchased her house, No. 10, King's-gardens, Hove, for £10,000, and Mr. Ford, the defendant, had rented a flat on the first floor of No. 9, for which he paid 10 guineas per week. Having been ordered by his medical adviser to live as much in the open air as possible, the plaintiff had a canvas structure in the nature of a tent or screen put up in his balcony to shelter a bed, in which he admitted that he slept at nights, although in his affidavit he denied "using the balcony as a bedroom," from which it may be inferred that he did not use it as a dressing-room. The plaintiff was apprehensive, however, lest he should be suffering from "consumption or some infectious disease," and it was stated that she endeavoured to protect herself by putting up a partition or screen outside her windows which she caused to be sprayed periodically with disinfectants. In her affidavit she stated that she had seen the bed on the balcony and a nurse sitting at a table with a lamp, and had also seen the gentleman in his bed, and had heard him give directions as to when he should be called. In asking for an injunction to prevent the described use of the balcony, counsel relied upon a covenant relating to the occupation of the flats, which, he said, were not to be used so as to cause offence or damage to other occupants or so as to interfere with the pleasurable enjoyment of their property. After hearing arguments on both sides, his lordship held that as the defendant was not suffering from any infectious disease he had not done anything to which a reasonable person could object, and he consequently refused to grant the injunction asked for. In comment, it may be said that the question whether the defendant might obtain sufficient fresh air without resorting to the balcony at night should be a matter for the decision of his medical attendant, from whom no evidence was apparently put forward at the hearing of the motion. The alarm of the plaintiff on the score of possible infection was, of course, groundless, but it may fairly be pointed out that, apart from this and from the applicability of the covenant referred to, the use in the manner described of the balcony of a flat on the first floor in what house agents would term "a first-class residential neighbourhood" is unusual and not unlikely to be resented by those living in other flats in the same building or in adjoining houses, or, in the case of a street, by residents on the opposite side.

WANTED—SUGGESTIONS FOR TREATMENT.

To the Editor of THE LANCET.

SIR,—Could any of your correspondents advise me as to the safest anthelmintic to give a woman, nearly five months pregnant, who is suffering from tape worm? I am, Sir, yours faithfully,

Nov. 28th, 1910. TÆNIA.

HEALTH AND HOSPITALS IN GRENADA.

ACCORDING to the report of the Governor of Grenada on the annual Blue-book of the Colony, the population at present consists of 35,463 males and 38,697 females—total, 74,160. The birth-rate per 1000 of the mean estimated population in 1909 was 34·76, a very low figure for Grenada; and the death-rate was 18·82, also very low. Although the health of parts of the colony was disturbed by outbreaks of enteric fever and influenza, the death-roll of the year was small. The first-mentioned disease was practically confined to the Carriacou and St. George's districts—66 cases with 9 deaths occurring in the former, and 14 cases with 1 death in the latter. In the past Grenada has been little troubled with this disease. Influenza was epidemic towards the end of the year, and its effects seem to have been most felt in St. Andrew's, where 26 of the 39 deaths attributed to it were recorded. 872 patients were treated during the year in the Colony Hospital, of whom 495 were discharged cured, 247 relieved, and 44 died. In the out-patient department there were 1575 attendances given. The number treated in the Yaws Hospital again showed a marked increase, being 420, as compared with 266 in 1908, and the admissions were 361, as against 207. Of these, 339 were discharged cured. There was one death, its cause being general tuberculosis. In St. Andrew's District Hospital 159 patients were treated, 128 discharged cured, and 10 relieved. At the District Dispensary attached to this institution 9951 prescriptions were compounded. The free prescriptions have increased from 1857 in 1902 to 6402 in 1909. In the Carriacou District Hospital 278 patients were under treatment, of whom 203 were discharged as cured, 35 as relieved, 5 as not improved, and 12 died.

The rainfall in 1909 was heavy, but was fairly evenly distributed over the year. At the Richmond Hill Observation Station, in the south of the island, 80·54 inches were received, as compared with 68·44 in 1908, while at Plaisance, an estate in the mountains, no less than 212 inches were recorded. In Carriacou 67 inches were registered, and on three occasions there was an abnormal downpour. On April 22nd, in the "dry" season, 3½ inches fell there; on August 21st 5 inches fell in three hours, and on Sept. 16th 3 inches in less than an hour.

A DISCLAIMER.

THE article by Mr. John McElroy, published in THE LANCET of Nov. 12th, having been largely copied by the lay press, the author has written to say that some remarks which might be construed to mean that information had been given by him to a lay paper are incorrect. He regrets that such an impression should be conveyed to his medical brethren, and desires to point out that he had absolutely no knowledge of the copying until his attention was called to it.

CENTIGRADE AND FAHRENHEIT.

To the Editor of THE LANCET.

SIR,—Everybody knows the usual formula for converting degrees Centigrade into degrees Fahrenheit—viz., divide by 5, multiply by 9, and add 32. The following alternative method may be found easier to perform mentally as the figures can be more easily retained in the memory—viz., multiply by 2, deduct one-tenth of the product, and add 32. Example (*a*), 30° C. = 86° F. Method: 30 × 2 = 60. 60 − 6 = 54. 54 + 32 = 86. Example (*b*), 37° C. = 98·6° F. Method: 37 × 2 = 74. 74 − 7·4 = 66·6. 66·6 + 32 = 98·6. Example (*c*), 40° C. = 104° F. Method: 40 × 2 = 80. 80 − 8 = 72. 72 + 32 = 104.

I am, Sir, yours faithfully,

London, Nov. 17th, 1910. F.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1910:—

Dec. 8th and 9th (London, Guildhall).—Conference of Health-promoting Institutions and Fifth Annual General Meeting of the National League for Physical Education and Improvement.
,, 19th–22nd (Rome).—Twentieth Congress of Internal Medicine.

In 1911:—

Feb. 20th–25th (Cairo).—Fifth International Congress for the Blind.
March 2nd–6th (Berlin).—Thirty-second Balneological Congress.
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
April 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
May–October (Dresden).—International Hygiene Exhibition.
May–October (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May–October (?) (London, Shepherd's Bush).—Coronation Exhibition.
June (Paris).—First Congress of the International Medical Association for the Prevention of War.
June 5th–8th (Kolberg, Prussia).—Fifth International Congress of Thalassotherapy.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Birmingham).—British Medical Association.
July 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September (Brussels).—Exhibition of Fractures.
,, (Turin).—International Congress of Pathology.
Sept. 11th–15th (Berlin).—National Congress for the Study and Prevention of Infantile Mortality (*Gouttes de Lait*).
,, 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
,, 18th–23rd (Sydney).—Australasian Medical Congress.
,, 24th–30th (Rome).—International Congress on Tuberculosis.
,, 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.
October (Cologne).—International Congress of Criminal Anthropology.
Dec. 4th–9th (Havana, Cuba).—American Public Health Association.
(Date not fixed) (Genoa).—International Exhibition of Marine Hygiene.

In 1912:—

July (?) (Cologne).—International Congress of Nurses.
September (Prague).—International Congress of Radiology and Medical Electrology.
September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.

In 1913:—

(London).—Seventeenth International Congress of Medicine.
(Dresden (?)).—International Conference on Cancer.

In 1915:—

(London).—International Prison Congress.
(London).—Imperial Exhibition (?)

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 30th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Nov. 24	30·04	S.E.	0·49	47	41	33	38	39	Overcast
,, 25	29·78	S.E.	0·05	47	42	38	38	39	Overcast
,, 26	29·95	S.W.	...	42	41	33	34	34	Foggy
,, 27	29·83	N.E.	...	52	52	34	36	37	Overcast
,, 28	29·36	N.W.	0·63	51	44	37	38	39	Cloudy
,, 29	29·83	S.W.	...	46	41	34	34	34	Foggy
,, 30	29·87	N.E.	...	44	42	34	34	39	Overcast

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

FRIDAY.

CLINICAL SECTION (Hon. Secretaries: Albert Carless, James Galloway): at 8 P.M.

Cases and Specimens.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Discussion on Dilatation of the Heart and Heart Strain (resumed by Dr. W. Collier (Oxford), followed by Dr. S. West, Dr. A. Morison, Dr. F. J. Poynton, Sir John Broadbent, Dr. C. W. Chapman, Dr. F. P. Weber, and Dr. L. Guthrie).

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—8.30 P.M., Clinical and Pathological Evening.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

WEDNESDAY.—5 P.M., Sir Alfred P. Gould, K.C.V.O.: Cancer. (Bradshaw Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. S. E. Dore: Clinique (Skin). 5.15 P.M., Lecture:—Dr. W. W. H. Tate: The Significance of Pain as a Symptom of Disease of the Pelvic Organs.
TUESDAY.—4 P.M., Dr. J. Collier: Clinique (Medical). 5.15 P.M., Lecture:—Dr. H. Campbell: The Treatment of Bronchitis in the Aged and Feeble.
WEDNESDAY.—4 P.M., Mr. B. M. White: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. D'Oyle Grange: Infective Arthritis.
THURSDAY.—4 P.M., Dr. R. Wells: Clinique (Medical). 5.15 P.M., Lecture:—Mr. S. Hastings: The Results of Nasal Obstruction.
FRIDAY.—4 P.M., Dr. G. Thompson: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Bidwell: Surgical Treatment of Hæmorrhage from Gastric and Duodenal Ulcer.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: Pneumonia.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine.
THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. Bernstein.
FRIDAY.—10 A.M., Medical Registrar: Demonstration of Cases in Wards. Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Mr. J. Cantlie: Applied Anatomy of the Abdomen.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).
TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations. Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting). 4.30 P.M., Special Demonstration:—Dr. A. J. Whiting: Selected Medical Cases.
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie).
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Dr. A. G. Auld: The Diaphragm in Health and Disease.
FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Dr. James: The Signs and Treatment of Dental Caries.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Dr. Fenton: The Weak Heart.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Mr. L. Paton: Optic Neuritis.
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. G. Holmes: Cerebral Tumour.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Mr. C. Nourse: External and Middle Ear.
FRIDAY.—3.45 P.M., Lecture:—Dr. Abercrombie: Clinical Cases.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Bullous and Vesicular Eruptions—I., Urticaria; II., Pemphigus; III., Pompholyx; IV., Varicella.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Mr. S. Bishop: Appendicitis. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (7th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (8th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (10th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

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The Bradshaw Lecture

ON

CANCER.

Delivered at the Royal College of Surgeons of England on Wednesday, Dec. 7th, 1910,

BY SIR ALFRED PEARCE GOULD, K.C.V.O., M.S. LOND., F.R.C.S. ENG.,

SENIOR SURGEON TO THE MIDDLESEX HOSPITAL.

MR. PRESIDENT AND GENTLEMEN,—In 1884 the late Sir William Savory chose as the subject of the third Bradshaw lecture the Pathology of Cancer. He pronounced the cancer cell to be an "embryonic" or "rudimentary" form of cell, possessing great powers of multiplication and of endurance, but differing from true embryonic cells in its lack of power of differentiation. And then he used these remarkable words:—

> And while tumours of the most innocent type touch, and indeed pass into, natural structures, the most malignant touch, if they do not actually pass into, the class of parasites. ..... The interval between the worst kind of cancer and a parasite must be a very narrow one.

He suggested that the experiments on cancer grafting had probably failed owing to the "crude conditions under which they have been performed." He concluded thus:—

> Before we shall ever be able to answer the question, Why or how do tumours form? it seems to me we must be able to solve the problem of normal growth and development, and to answer the question why or how it is that these continue up to a certain point and then suddenly cease.

For the succeeding 19 years the Bradshaw Lecturers dealt with other subjects, but in 1903 Sir Henry Morris gave a learned review of the many theories that had been advanced to explain the origin and nature of cancer, and specially discussed two theories: the microbic or parasitic theory, which he held to be "non-proven," and Cohnheim's theory of "cancer matrices," ante-natal and post-natal. This theory he strongly supported as explaining all the facts of the disease then known, and he confidently foretold for it a speedy acceptance by all pathologists.

Two years later, in 1905, you, Mr. President, announced, as the title of your Bradshaw lecture, "Carcinoma is a Parasitic Disease," and stated:—

> That the carcinoma cell is an independent organism, like many a protozoon; that it lives a life which is wholly independent and proper to itself; and that it lives as a parasite in the body of the animal which is affected with carcinoma, deriving its nourishment from the host, and having nothing to pay the host for the sustenance of which it robs him.

You shrank from accepting Hauser's suggestion that the protozoal cells of cancer are derived or descended from the living cells of the host, and asserted rather that "the parasite is introduced into the body from without."

It is needless to say that each of these divergent theories has been discussed from the standpoint of a very wide and accurate knowledge of the subject, and that each in turn has been supported with extraordinary ability and with the enthusiasm of a strong personal belief. For me to attempt another review of the same facts and arguments would be to act the disastrous part of Phaeton, and yet I propose, Sir, to raise once again the great problem of the nature of cancer, not because I can read aright the riddle solved so differently, and with such mutual destructiveness, by my predecessors, but because within the last few years the workers in our cancer laboratories have added so much to our store of knowledge that it seems wise to see how far the new facts support or refute former conclusions. We are like children putting together a dissected picture, we slowly look over and often vainly try to fit together the irregular pieces of the puzzle, but gradually order comes there and there out of chaos, and as piece after piece finds its proper setting the picture grows until the fitting in of the final fragment reveals the whole design.

DEVELOPMENT OF CANCER RESEARCH.

In addition to the influence of the general progress of biological knowledge, two discoveries have caused a great development in cancer research: the proof that cancer can be transferred from animal to animal, and the demonstration of the influence of radio-active bodies upon cell growth. Scientific workers have devoted themselves to the solution of the problem of cancer with new courage and more confident hope since they saw that it could be submitted to that experimental method which has so often dissipated the darkness of ignorance. All over the civilised world cancer research laboratories, more or less exclusively devoted to this quest, have been founded, and never before have the efforts of scientific men been so largely centred in the study of any one disease. Highly gifted investigators are devoting themselves with praiseworthy devotion to the study of the internal structure and arrangement of cancer cells, to a search for the forms and evidences of the presence of an invading organism, to a close scrutiny of all that takes place in the artificial transmission of the disease from animal to animal, and to the investigation of the various abstruse problems in bio-chemistry and physics that it is hoped may aid in the discovery of the nature and cause of cancer. This College, in conjunction with our sister in Pall Mall, by the initiation, control, and housing of the Imperial Cancer Fund, has taken a very prominent part in this movement, and it is a matter of great satisfaction that the researches carried out in our laboratory are universally recognised as having been of fundamental importance. We gladly recognise that all the success which has attended, and may hereafter attend, the labours of Dr. Bashford and his distinguished associates is not due to the association with these Royal Colleges, nor to the sources from which the fund has been collected, but to the ability, the wide knowledge, the patience, and the honesty that are associated with the laborious industry of the workers. It is not my purpose to give a detailed account of the latest results of cancer research, but rather briefly to enumerate some of them, and to see whether and how far they enable us to unravel what has hitherto been a tangled skein.

INCIDENCE OF CANCER IN MAN AND ANIMALS.

It is now known that *cancer occurs in all races of men.* Wherever adequate investigations have been made cancer has been found, and the fuller our knowledge of any people the ampler is the evidence of the presence of cancer among them. We are unable, therefore, to attribute the disease directly to the influence of race, of climate, of diet, of occupation, of soil, of the subtler accidents of civilisation, or to any of the associated and complex conditions that may be summarised as "environment." Not that these factors are without influence. Certain occupations are assuredly attended with peculiar liability to cancer; I need only mention chimney sweepers and workers in X rays, tar, and paraffin; and the beneficent effect of circumcision in greatly diminishing the incidence of epithelioma of the penis, and the pernicious influence of the use of the kangri, show us how the disease may be affected by social customs. It is clear, however, that we may not regard any of these conditions as the essential cause of cancer, for the disease occurs in their absence, and we must carefully guard against confusing subsidiary, accelerating, predisposing factors with the inevitable, constant cause of the disease.

Human statistics cannot be relied upon to substantiate or define the influence of race. Dr. Bashford has been at great pains to point out the imperfect character of all statistics of cancer incidence, and he has clearly shown that the proportion of cancer reported among different nationalities is at present only a measure of the value of the material submitted to examination, and must not be taken as a true picture of the actual frequency of cancer. Only as care in diagnosis, in pathological examination, and in records improves and becomes uniform in all races of men, shall we be able to state with precision what influence race, among many other factors, has upon the incidence of cancer. The experimental study of cancer has, however, shown that we must not assume that all races of men are equally liable to cancer. Very early in the investigations into the inoculability of mouse cancer

it was realised that there were serious discrepancies in the results obtained by different expert workers. Some of these discrepancies were caused by differences of technique, others by inattention to the age of the mice used for the experiments, and others again to the particular tumour experimented with. Chiefly owing to the work of Dr. Bashford these causes of variation in the results obtained have been recognised and eliminated, and the influence of race has thereby been demonstrated. Such facts as these have come to light. Haaland found that a certain tumour grew on inoculation in nearly 100 per cent. of Berlin mice, in 24 per cent. only of Hamburg mice, and failed altogether to grow in Christiania mice. Loeb has a sarcoma which was readily propagated in white rats, and could not be inoculated into coloured rats. Tyzzer has a carcinoma found in a Japanese waltzing mouse, which he can transplant successfully in practically 100 per cent. of this particular family of mice, but which altogether fails to grow when inoculated into common mice. On the other hand, Jensen's tumour, which grows readily in common mice, cannot be inoculated with success into the Japanese waltzing mice. In hybrids resulting from the crossing of common white mice and Japanese waltzing mice, the Japanese tumour grows as uniformly and even more rapidly than in the pure Japanese mice, but in the second and third generations of the offspring of these hybrids the Japanese tumour cannot be inoculated at all. In his earliest inoculations of Jensen's tumour, Bashford found it impossible to succeed with blue mice, while he obtained 25 per cent. of success with other tame mice. He also relates that a tumour sent to him by Dr. Michaelis of Berlin was transplanted into 19 Berlin mice, with the result that nine tumours grew, but only one small tumour developed in 182 tame London mice similarly inoculated. It is, of course, most important to keep clearly before one's mind the difference between the liability to occurrence of sporadic cancer in an individual or animal, and the susceptibility of such an individual or animal to the successful inoculation with cancer transferred from another. Such facts as I have just mentioned, however, make it imperative upon us, while recognising the presence of cancer throughout the human race, to keep a mind open to receive a demonstration, should it come, of the influence of race upon the incidence of cancer, apart from all accidental and accessory conditions.

Passing now from this first fact—that cancer is a disease of man wherever and however he lives—I would next remind you that we have recently learnt that *cancer is a disease that occurs in all vertebrate animals.* It is not limited to man, nor even to man and primates, nor even to the great family of the mammalia; it has been proved to occur in birds, reptiles, and fishes. The disease, as met with in the lower vertebrates, is not a similar disease, but veritable cancer, with the same histological characteristics and with those special biological features that we find in man—the uninterrupted growth, the power of infiltration, and the formation of metastases. The importance of this demonstration is enormous. It dissipates at once all those theories which would find the cause of cancer in any condition peculiar to man; we have to seek it in some influence which man shares with all other vertebrates. When we reflect that there is no known instance of an external infective agent or organism which spontaneously attacks and produces its characteristic pathological effects in all vertebrata, or in all the varying physical conditions of environment in which cancer is found, the parasitic theory of cancer fails even to be a satisfactory "working hypothesis." We can only adopt it, if the fact is demonstrated and Koch's conditions of proof are fulfilled; and such a demonstration is certainly not forthcoming.

That cancer can be transferred from host to host is now attested by thousands of successful experiments upon mice, rats, and dogs. Four facts have come to light during these inoculation experiments which are important to bear in mind. In the first place, the successful grafting of cancer from animal to animal is far more difficult to accomplish than is the inoculation of microbic disease. In the second place, it has been found that it is always difficult to succeed in the primary grafting experiments of a sporadic mouse tumour into another mouse, or in the first graftings of a tumour upon a fresh family of mice. In the third place, as I have already mentioned, it has been found that when allowance has been made for these variations the success of grafting experiments may vary considerably in different races or families of mice. And then towering above these lesser facts is the greater, all-important one, that *cancer cannot be transferred to an animal of another species.* Cancer of a mouse is readily transferred to other mice, but it cannot be grafted upon a rat, or upon any other animal of another species. The same holds true of cancer of the rat and dog, and in this specificity of cancer we see the cause of failure of all experiments to graft the human disease upon lower animals. These failures were not due, as Savory suggested, to the "crude methods" employed, but to the working of a biological law.

The fact that an inoculable disease is specific in the sense that it cannot be transferred from species to species surely must be one of great importance in any consideration of its nature, for the grouping of animals into species is not artificial. The differences that we recognise between species have a greater element of permanence than those between varieties; the offspring of crossed varieties are fertile, while the hybrids of crossed species are almost invariably infertile; the number of chromosomes in somatic cells differs widely, but it is constant for every species. Difficult, therefore, as it may be to express the distinguishing limitations of a species in terms which will satisfy the exacting criticisms of modern schools of biologists, all agree that the word connotes a reality, that it indicates an important step in the path of evolution, and that the limits between species are true landmarks. The enormously wide range of the incidence of cancer, the uniformity of its biological characters, and its specific inoculability are a triad of facts unique in pathology and of tremendous significance. Apart from many minor considerations, I venture to submit that they are inconsistent with what we know of infective or parasitic diseases. They, too, are no doubt "specific," but the specificity is attached to the disease, and neither to the animal nor to the tissue in which it occurs. The tubercle bacillus leads to the same disease in the guinea-pig as in the man from whom the virus may have been taken. The minute anatomy of tubercle is the same in whatever part or tissue of the body it arises; it does not vary with its primary site, as is constantly the case in cancer. Cancer is distinguished from all infective and parasitic diseases by the fact that the cellular parentage of a malignant growth is always definitely marked, and that whether it originates in squamous, columnar, or spheroidal epithelium, in endothelium, or in any of the forms of connective tissue cells, it retains throughout its whole life, and wherever found, characteristic features of its parent cell. Parasitic diseases are anatomically and etiologically specific—specific in their structure and cause; cancer is specific not in structure, perhaps not in cause, but in the physiological character of its cells.

THE CANCER CELL.

The essential part of every cancerous growth is the living cancer cell! The cell, whether of carcinoma or sarcoma, is the one essential part, that which contains within itself all the potentialities of the whole of cancer. While it lives as a cell, the cancer is living, when it dies as a cell, it is impossible to find or develop or excite any of the parts, or agencies, or faculties of a cancer. By no one has the demonstration of this fact been carried so far, or made so indubitable, as by Bashford and his fellow-workers in our laboratories. Their investigations into what takes place in the "early stages" of successful transference of a cancer from mouse to mouse have revealed, that in the tiniest practicable graft, all the introduced stroma, and many of the centrally placed cancer cells die, but that the cells, or some of them, in the periphery of the graft live, do not undergo degenerative changes, and after a few days—usually about four—excite the formation from the fibroblasts of the host, of a new supporting and vascular stroma, and themselves show the changes indicative of cell division. The parenchyma of the tumour, which ultimately may grow to a huge size, all develops directly from those cancer cells of the graft which were able to withstand the hurtful influences of the process of grafting. While it is possible to transfer cancer from mouse to mouse so long as care is taken to introduce living cancer cells in the graft, it is impossible to do this when the cancer cells are destroyed by pounding in a mortar, or their vitality has been injured, as by the influence of heat. Indeed, Schwann's

great doctrine of "*omnis cellulae cellula*" is peculiarly true of cancer.

On the other hand, it has been equally clearly shown of inoculated infective granulomata that they grow not from the graft but from the connective tissue of the host. This difference between cancer and infective granulomata is of fundamental importance, a veritable *differentia*. The metastases of cancer and of granulomata may be alike in some of their coarser anatomical features, such as their site, but in their nature, in their true biological characters, they are absolutely distinct, with a distinction which is vital and fundamental. If the living cancer cell is the essential part of cancer it is important to know what are its anatomical and physiological characteristics. A study of them demonstrates that the cancer cell is only a variation of a normal cell—it possesses neither in structure nor in powers anything not found in the healthy cell. Let me rapidly mention the established facts about living cancer cells.

First, *they possess a great power of continuous multiplication*. So far as the experiments with Jensen's tumour have gone it seems that the grafting can be carried out with it as successfully now after seven years as at first and that from the small sporadic tumour in the mamma of a mouse a mass of cancer has been grown through an unknown number of mice, amounting to far more than a thousand times the bulk of the original tumour, or even of the original mouse. Bashford has particularly laid stress upon this striking fact, and has spoken of it as a "new" biological fact, but in that I think he has probably exceeded. Certainly in the protozoa such apparently endless multiplication and growth of living cells can be recognised. And when we cast our minds back to the development of the human ovum—a single cell—and remember that from it directly descends the entire mass of cells which form and maintain through his threescore years and ten the full stature of a man, we see a power of cell growth which we need not shrink from comparing with that of a Jensen's cancer cell. But it is particularly noteworthy that in cancer this power of continuous multiplication is spontaneously manifested most often in the cells of an organism that has passed the period of youth and maturity, and has already entered upon the declining phase of life.

The second characteristic feature of the cancer cell is that *it retains the inherited limitations to type* of the cells among which it first appears. The descendants of an epiblastic cancer cell retain, in the main, the features of their early parent—a hypoblastic cancer cell bears its own family likeness, and the sarcoma cell is always a distinctively mesoblastic cell. Even in those remarkable experiences that have been so carefully studied and admirably recorded by Bashford and Haaland, when they observed in a series of transplantations of an undoubted epiblastic cancer of a mouse its gradual conversion, first into a cancer with a richly cellular stroma, then into a "mixed" tumour, and finally into a sarcoma, it is clear that the mesoblastic cancer (sarcoma) thus formed sprang from the connective tissue cells of the hosts, and that its cells are in no sense or degree the lineal descendants of the original cells of the epiblastic cancerous parenchyma.

Thirdly, *cancer cells develop and differentiate but little and irregularly*. Thus in a squamous epithelioma there is great variation in the extent to which keratinisation of the cells occurs, and in some cancers we see such departures from type as a change from squamous to columnar cells and from spheroidal to columnar cells, or *vice versâ*; the differentiation of a mammary cancer may be into acinous or glandular carcinoma or into a combination of the two. This variation in growth has been best observed in the experimental work in laboratories, where the opportunities of studying the same strain of tumour in many succeeding stages of its growth and through many hosts afford scope for observation such as can never be found in human pathology.

The development of the cancer cell is neither purposeful nor effective. In glandular carcinoma no regular grouping of acini around primary ductlets is found, nor does the cell metabolism issue in useful secretion. In a squamous carcinoma no impermeable protective covering is formed, and in a sarcoma no useful fibrous bands or aponeuroses, no attached and functional muscles, no perfectly constructed and useful bone is formed. In cancer there is cell multiplication in exaggerated degree, but a lack of adaptation to the many and varied needs of the organism. The cancer cell shows no new faculty or endowment, no power of "rising on its dead self"; it is a less highly endowed cell than its physiological parent. Then, again, *cancer cells exhibit periodicity in their growth*. Bashford has found that a mouse tumour has its period of active growth succeeded by one of less activity, and that the success of artificial transference of the disease to other mice rises and falls with this wavelike activity of the tumour, and he has found that this periodic activity is transmitted to the tumours which arise from the grafts—that it is an inherent or inherited property. Similar variations in the rate of growth and activity of cancer are also seen in the human subject, and we see periodic activity in metastases—periodic activity in their occurrence as well as in their growth. We must not look upon such variations as due, of necessity, to a change in the resisting forces of the patient; they are probably due to the inherent periodic growth of cancer. Physiological periodicity of cell growth is, of course, well recognised; I need only mention such examples as the sexual periodicity in animals and especially in the human female, the periodic growth of young animals, the periodic growth of hair, and the periodicity in the life-history of salmon, and the periodic variation in the colour of the fur and feathers of many mammals and birds.

The study of the form of cancer cells and the attempt to find in it some index of their nature has yielded but little that is positive. The many determined efforts to see within them foreign living forms, whether of bacteria, of protozoa, or of yeasts, have failed. Bacteria may, of course, intrude within a cancer cell, but it was a cancer cell before the intrusion, and we may assert with some confidence to-day that there is no visible evidence of parasitism in the cancer cell. Nor has the hopeful and brilliant study of the mitoses of cancer by Walker, Moore, and Farmer, and their followers lifted the veil. It seemed that the theory that cancer was a gametoid tissue would explain much, or at any rate establish on a firm footing the nature of the disease. But we must regretfully consent to see that hope unfulfilled, and admit that mitosis is no key to the riddle. Quite recently, however, it has been shown by Beckton that all the cells of man, except the keratin cells of squamous epithelium, the cells lining the conducting tubes of the kidney, the cells of unstriped muscle, and the unimpregnated ovum, contain certain granules, which are known as Altmann's granules. While unrecognisable in the protoplasm of the ovum, these granules are seen in the unincubated blastoderm of the egg, and are readily recognised after six hours' incubation. Beckton has found them in mouse embryos of 8 mm. and 12 mm. in length, and in the rat embryo of 30 mm. They appear, therefore, very early indeed in the descendants of the original single ungranulated cell of the ovum. Beckton states that these particular granules are seen in the cells of the stroma of carcinoma, *but not in the cells of the parenchyma*, and while abundant in the protoplasm of inflammatory and granulomatous tissue they are invariably absent from the cells of sarcoma. Beckton examined also 21 mouse tumours sent him by Dr. Bashford, and in 14 of them there were no granules, but in five instances they were present. They are therefore commoner in mouse tumours than in human malignant growths. Should further observations confirm Dr. Beckton he will not only have given us a very useful method of diagnosis, but he will have established a morphological difference between cancer cells and most normal cells. He will also have afforded an anatomical proof that cancer cells are not embryonic cells.

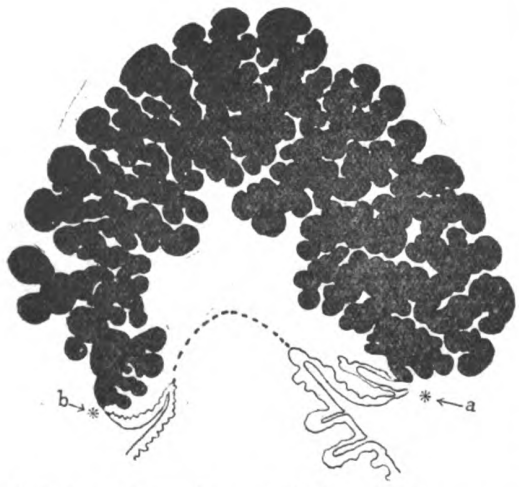
Of the *intracellular metabolism of the cancer cell* we know but little; it seems to beget no toxin, to generate no new substance, and to depart but little from the chemistry of health. And yet we cannot doubt that its special biological characters are inseparably linked with some intracellular chemical peculiarities. We have evidence of this furnished by some very careful spectroscopical observations made by Mr. Mottram in Dr. Lazarus-Barlow's laboratory, by which he has shown that the potassium content of the red corpuscles of cancerous patients is considerably higher than in health, the difference being represented by the figures 1·5 and 3. The sodium content, on the other hand, shows no change. The importance of this observation is enhanced by the further

fact that while the sodium content of all carcinomatous tumours is about the same, the potassium content of primary cancerous growths is higher than that of secondary, and the potassium content of squamous-celled tumours is higher than that of spheroidal celled. Mottram has, therefore, shown that the cancer cell has a chemical coefficient, but it is a modification in degree, and not in kind, of that of the healthy cell. These are the facts at present known about cancer cells as independent entities. We must now look at them as members of a community, and study their relations to neighbouring cells.

First we must notice *the disproportionate growth of the cancer cell.* It bears no relation to the growth, the needs, or the condition of the neighbouring cells and tissues, and, as it often tends to outgrow its stroma, and, by the pressure of its cells, to compress the capillaries, we have in this fact an explanation of the frequent degeneration, fatty and otherwise, of the cancer cells. The hæmorrhage which so frequently occurs in some cancerous growths may also be in part due to the same fact. The disproportionate growth of the cancer cell has been mistaken for evidence of its being an independent organism, but we shall see abundant reason for rejecting this view and for being certain that a cancer cell is an altered body cell.

The pressure caused by the incessant and disproportionate *multiplication of the cancer cells causes not only complicated infoldings of the cancer itself, but flattening and distension of the adjacent soft tissues.* In his second Scientific Report, Dr. Bashford has published drawings of an epithelioma of the lip to show the enormous folding up of the cancerous parenchyma, and that what at first sight appears to be a solid infiltrating growth is really an immensely extended superficial growth, folded up into a ball, filling at first the narrow space it acquired for itself by pressing aside the yielding tissues of the lip and then projecting on the surface. (Fig. 1.)

FIG. 1.



Squamous celled carcinoma of the lower lip in a man. The growth is a folded and crumpled sheet intercalated between the outer and inner surfaces of the lip. Shows folding of skin (*a*) and mucous membrane (*b*) over the margins of the growth, with great lateral displacement of the normal tissues adjoining either margin.

Bormann has shown that the papillæ immediately next the growing edge of an epithelioma of skin or tongue are not exaggerated in size or cell activity, but are compressed and stunted. These observations run right athwart the commonly received notion that as soon as epithelial or other cells have acquired "malignant" properties they burrow deep into the surrounding tissues, and that the similar adjacent cells also show active growth (Fig. 2) and a readiness to participate in the disorder, as if "infected" by the malignant tendency. Unless Bashford's and Ribbert's statements are erroneous, they afford a demonstration that cancer cells in their growth give a qualified obedience to the law which regulates and controls the growth of the normal cells from which they are derived.

But if the first effect of cancer cells upon their neighbours is to compress them, their second and far more important power is to *invade the adjacent tissues.* This power of infiltration, as it is called, or permeation, is so well recognised that I need only mention it. The growth may penetrate even to bone and marrow, and in doing so cells, or groups of living cells, pass into lymphatic or vascular channels, and are carried along by the slowly or swiftly moving stream therein, and may lodge in distant parts and develop into metastases. But they may not do so. Handley's studies of the process of

FIG. 2.

Squamous celled carcinoma of the lower lip in a man. Shows sharp demarcation of the growth from the adjacent skin (*a*) and mucous membrane (*b*). At (*a*) the elongated epithelial papillæ of the skin are displaced by pressure of the growth; they are also being undermined and will be pushed off. At (*c*) the hair follicles already show displacement from pressure.

lymphatic permeation have shown us that the passage of a cancer cell along a lymphatic is attended with great peril to it, the lymphatic endothelium has great power of cancer destruction, and for every cancer embolus that resists it successfully and thrives and multiplies—bursts through the lymphatic wall and develops as a metastasis—many a one falls a prey and dies. The same holds true of the hæmovascular embolisms. These have been studied by Borrel, Haaland, Bashford, Murray, Tyzzer, and others, and the resisting or destructive influence of the vascular endothelium on the cancer cells has been clearly demonstrated. The cancer cell when it wanders from its proper plane or sphere has to fight for its life; normally and in favourable conditions the "odds" are against it, and our post-mortem records bear abundant testimony to the ability of the forces of resistance to these cell intrusions to limit the disease in many cases to the area originally attacked, even up to the death of the patient from the disease. While, therefore, we must not for a moment under-estimate the grave importance of the permeation of cancer and its tendency to develop metastases by the transference of the living cancer cells to distant parts of the organism, we must be careful to regard this in its due proportion and to remember that all infiltration and every metatasis is only accomplished at a period later than the earliest onset of the disease and after the overthrow of very real natural resistance.

In this connexion I would mention that cancer-bearing mice are not a favourable soil for the grafting of other cancerous tumours until the period at which they spontaneously develop metastases. In the earlier stages the resisting forces of the organism can hold at bay the cancer cells whether spontaneously or artificially introduced into the tissues; in later stages either form of inoculation becomes potent. The occurrence of metastases is the resultant of two forces—the vigour of the invading cancer cell and the resistance of the tissues to its development within them. This resistance may be inherited or racial, naturally acquired by age, artificially acquired—as shown by Bashford's experiments with the inoculation of various tissue-extracts—and it may be lessened by the persistent presence of a primary cancerous growth.

A very interesting fact about the influence of the

cancer cell upon its neighbouring cells is its *compelling them to form a supporting and vascular stroma for it*, of a type governed by the cancer cell and not by the stroma-yielding mesoblastic cells. Along with this, however, there is clear evidence that the surrounding cells exert an influence upon the cancer cell; this is shown by its greater vitality and power of multiplication in the young than in the old, by its more active growth in certain races or families of animals, and by its inoculability being limited to animals of the same species. Two other facts are also full of significance: In the experiments in the propagation of mouse cancer it has been shown that when a graft is implanted in a fresh family or race of mice it grows with great difficulty, and that with each generation of grafts the success increases until it often reaches 100 per cent. This must not be confused with the increased virulence of an infective organism that may be produced by passing it through a series of animals, for the virulence of the cancer cell is only raised for the one particular variety of mouse and not for others. It is a subtle influence of the host upon the introduced cancer cell which makes it more congenial to the tissues of the particular variety of mouse. And then we have the remarkable fact that Bashford discovered that in certain cases the repeated inoculation of an epithelial cancer stimulates the mesoblastic tissues of the host so intensely that the stroma becomes proportionately more and more abundant, and more and more richly cellular, while the epithelial growth lessens, until the carcinoma is replaced by a sarcoma. No more surprising, wonderful fact has yet been forthcoming from cancer laboratories than the demonstration of this "transformation" of an epiblastic malignant growth into a mesoblastic cancer, the carcinoma exciting the development of a sarcoma, and thereby being itself destroyed.

What is the meaning of all this? Remember that the escape of epithelial cells into the tissues beneath them is a physiological process. Years ago Dr. Creighton demonstrated it in the case of the breast; he also showed that these permeating epithelial cells were destroyed in the lymphatics. Permeation is not a new power of cancer cells, although it exists in them in an unusual degree. I think we can recognise in the facts I have just mentioned evidence that the cancer cell is not an alien cell; it influences, and is itself influenced by, its neighbours as a normal cell is. The mutual adaptation and mutual influence of the cancer cell and its stroma surely speak of common descent—of blood relationship, if I may use that term. If, now, we attempt to piece together these various facts, what disease picture do they make? When we consider the intimate connexion shown between cancer cells and the cells of the individual, and, perhaps, above all, the artificial conversion of a carcinoma into a sarcoma, we cannot recognise in cancer an independent parasitic growth, protozoal or other. Not only are the necessary evidences of the presence of specific pathogenic microbes absent, but both in broad outline and in particular detail the life-history of cancer is fundamentally different from that of the great host of known bacterial and other invasions. Nor is it possible any longer to see in cancer a reversion to the embryonic type of growth; that, before all else, is orderly, regular, with a long vista of development, differentiation, and functional activity. Cancer is cell life that is disorderly, irregular, with a minimum of development, differentiation, and function. Still less can we find a satisfactory explanation of this great disease in a circumstance so accidental, so trivial, as the sudden awakening into activity of entirely supposititious "embryonic rests."

WHAT IS CANCER?

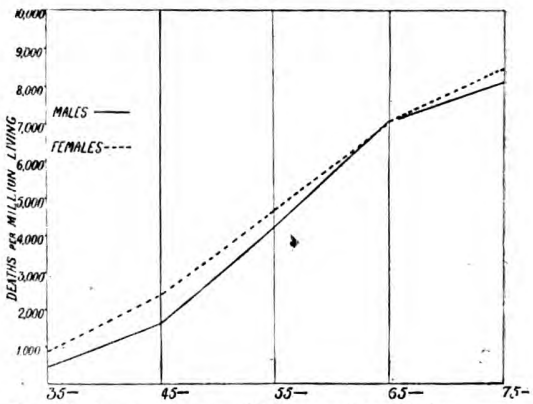
What, then, is cancer? Before answering the question, think of the fertilised human ovum, a single nucleated cell. Picture it dividing into 2, 4, 8, 16, and 32 cells, all similar in size, form, and structure. Trace on these cells as they multiply by division and see them silently range themselves in the three primary embryonic layers—epiblast, mesoblast, and hypoblast, and by that step effect a separation of cells which to our senses appear identical, but whose destiny marks them out as absolutely distinct. Follow on the wonderful drama of development, try to realise the orderliness of it all, the varying differentiation of epithelia, endothelia, and connective tissues. Observe the intimate association of these embryonic layers in the evolution of parts and organs, their perfect coöperation, their mutual dependence. See the rising up here of mesoblast into papillæ, ever clothed with epiblast, and there the down-growth of epiblast or hypoblast into glands ever supported and nourished by mesoblast. Know that all this goes on with unerring precision, but with almost endless variation in proportion, with countless differences in form and function of cell, with an ordered cycle of chemical changes so wide in its range, so varied in its detail, that we seem to be only at the threshold of a knowledge of it. Remember that this development proceeds with measured step to a certain definite extent only, that then in spite of all kinds of variation in supply and demand, and of adverse and favourable conditions, a certain level of cell life and growth is maintained for a more or less determined period, and that then first here, then there, the processes seem to abate and fail, the flame of life seems to flicker until the unknown and wonderful changes of age draw on. I have failed to bring up before you a tithe of the marvels of the full development of a man from a single fertilised cell, or of the equally marvellous maintenance of his full manhood through the years of maturity and of the gradual decline into old age. But even in my faulty picture of it we see the outworking of a wondrous law, obedience to which brings perfection of development, of life, and of health.

Now summarise our facts about cancer. Consider the disproportionate multiplication of certain cells, their imperfect, irregular, and useless differentiation; their failure to form Altmann's granules, their excessive affinity for and need for potassium, their insistent intrusion into surrounding tissues, their imperfect coöperation with the other cells, and, finally, their selfish greed which enables them to live when other cells are failing and perishing for lack of nourishment—what is it all but a failure of, or a revolt against, that great cytological law or impulse which first manifests itself in the primary division of the ovum, and lasts on till the death of the organism? Cancer is not a disease attacking the body from without, it is the result of a breach or failure of fundamental cell law; a law of which we know only the results; a law so majestic that obedience to it results in perfect development, perfect health, the full measure of days, and disobedience to it may slowly spell out all the inscrutable woes of cancer.

Let us look now at certain conditions which are known to exert an influence on the causation of cancer, and see what confirmation they afford to this view of the nature of cancer.

1. *Age.*—And first it is fully established that cancer is greatly influenced by age. In man its incidence rises with

FIG. 3.



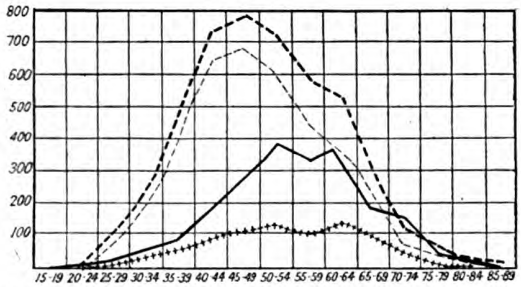
Mortality from cancer per million living at each of five groups of ages from 35 years upwards (1906).

each decade after the third. Of animals this is as true as of man. Thus the average life of mice in laboratories is three years, and sporadic cancer occurs almost invariably only after they have reached the age of two. It is from India, where the cow is a sacred animal, and is allowed to live to old age, that we have most evidence of the occurrence of

cancer in that animal. What we have so long known in the case of man, therefore, must not be regarded as in any sense an "accident" or peculiarity in him—it is one of the fundamental facts of cancer. (Fig. 3.) Cancer is undoubtedly a disease that generally arises in cells that are growing, or have grown, old. But senility of tissue is not a necessary condition of its growth, and indeed is not a favouring condition. Who of us has not been impressed by the terribly rapid advance of the disease as it occurs in young adults? Who has failed to notice the equally slow and difficult progress it makes in some old people? Of all conditions which influence the rate of progress of cancer in any particular site, I know of none more potent for mischief than the youth of the individual. From the cancer laboratories we get most definite statements that it is in young mice that cancer grafts grow with most certainty and with most rapidity. So important is this that Bashford has had to point out that, before a just comparison can be made between the results of inoculations under varying circumstances, it is absolutely essential that the experiments should be carried out in animals of known age and of the same age. Now this fact—supported alike by clinical human experience and by experimental animal experience—teaches us that the condition precedent to cancer is not in the nutrition of the tissues outside the cancer cell but within the cancer cell itself. The external conditions for the growth of the cancer cell are more favourable in the young than in the old, and a cancer cell having once started on its errant course can profit to the full from the greater nutritive vigour of the young. Incidentally this fact is a strong indication that cancer is not an infective disease, allied to bacterial invasions. So far as is known of them, old age is not a favouring factor; and it is the veriest negation of all our knowledge of these diseases that a condition favourable to their origin is unfavourable to their spread.

2. *Sex.*—It is well known that cancer is more frequent in women than in men, and that its incidence increases earlier, and attains its maximum sooner in them than in men; after the age of 70 the incidence is practically the same in the two sexes. The greater frequency in women is due to the special liability to the disease of the generative organs of that sex. (Fig. 4.) I have prepared a chart founded on the

FIG. 4.



Unbroken line = cancer in males. Thick broken line = cancer in females. Thin broken line = cancer of uterus, vagina, vulva, and breast only. Crossed line = cancer in females, excluding cancer of uterus, vagina, vulva, and breast.

statistics of the Middlesex Hospital (see Third Report from the Cancer Research Laboratory). The chart shows the close parallelism of the cancer curve in women and in their generative organs only, and the near approach of the curve for women, when we exclude disease of their generative organs, to that for men. In other words, the different incidence of cancer in the two sexes is not a sex difference affecting all the body tissues, but is the result of the special liability to the disease of organs possessed by one sex only. Now these organs—chiefly the breast and the uterus—have a definite functional life which does not correspond at all with the life of the individual, but starting at about 14 usually begins to terminate about 50, and during those years these organs are the seat of frequently repeated periods of great cellular activity followed by periods of decline and atrophy. It is, I believe, because of this fact, that these organs are specially prone to cancer as they get old—before the rest of the woman ages—and so we see the explanation of the facts that cancer is more frequent in women than men, and that its age-incidence differs in the two sexes.

3. CHRONIC IRRITATION.

Of the reality and importance of chronic irritation as a condition precedent of cancer I cannot stay to speak, nor need I: the facts are too well known. Attempts have been made to find the underlying cause of cancer when it follows chronic irritation in some change in the subepithelial tissues, and the Hunterian lectures of my colleague, Dr. Victor Bonney, on this subject are no doubt fresh in your memory. He showed that interference with the continuity and perfection of the subepithelial elastic tissue layer always preceded a carcinomatous growth, and, conversely, that cancer never originates in perfect normal tissue. It has been objected that his beautiful preparations fell short of a demonstration, that the changes shown were antecedent to the earliest development of cancer, and that they were as compatible with consequence as with precedence. It is, however, surely a striking fact that these changes are only met with at the seat of the primary growth and in the nearest lymphatic glands, and not in the true secondary growths. But while accepting Dr. Bonney's demonstration, I think we cannot for a moment regard any change in the subepithelial tissue of a part as the sole or most significant change in what have been well called "precancerous conditions." The essential features of such chronically irritated and precancerous tissues are increased cell formation associated with defective differentiation or cell development, and the changes in the subepithelial tissues may be either a result of this or another expression of similar nutritive changes.

The cytological effects of what we call chronic irritation are essentially two—increased cell multiplication and defective intracellular metabolism. Now the life of a cell is not to be expressed in periods of time, but in terms of its multiplication or proliferation. An epithelium does not become old because its individual cells have existed for a particular length of time, but when the multiplication of the cells necessary for its maintenance has been repeated a certain great number of times. Therefore chronic irritation, by adding to the frequency of cell division, is producing the special condition of cellular old age; it is, indeed, equivalent to the ageing of a tissue. Its other effect is equally significant. The imperfect cell development and metabolism carried on for generation after generation of cells is clearly akin to senile defects in cell growth and metabolism, as shown, for instance, in diminished secretion and in the impairment of all nervous functions. The word "irritation" is rather apt to suggest a stimulating process; it is important to remember that chronic irritation is the most effective mode of hastening on changes closely akin to, though not identical with, those of old age—the conditions in which we have seen cancer to occur most often.

4. *X Rays.*—Prolonged exposure to X rays may undoubtedly cause cancer. The evidence of the influence of X rays upon cell life is most important. Lazarus-Barlow and Somerville Hastings have shown that in the ova of Ascarides exposed to X rays the division of the cells is more rapid than in "controls," while fewer of the ova come to maturity. If we look at the hands of an X ray worker we see the same thing—increased production of epidermic cells, with imperfect development of the too numerous cells. Think of this progress carried on and on, will it not cause a premature ageing of the formative epithelial cells, associated with an imperfect elaboration of the cells?

5. *Alcohol.*—The last etiological factor to which I can refer is alcohol. To some extent this causes cancer by directly or indirectly inducing chronic irritation; but let us note that it is a protoplasmic poison—that is, a substance which directly interferes with, and mars, cell metabolism and cell life. The influence of alcohol on the incidence of cancer is really important. Dr. Tatham's statistics of the mortality of various occupations from certain diseases revealed the fact that cancer is twice as frequent among brewers and London publicans as among clergymen, and that the cancer incidence in any trade varies with the attendant habits as regards alcohol. Dr. Newsholme has dealt with this subject in the light of figures obtained from the United Kingdom Temperance and General Provident Institution, and has shown that the mortality from cancer

among the insured in that institution, if represented by the figure 100 among the non-abstaining males, would be represented by 72 among the abstainers. He laid emphasis upon the fact that this statement was based upon scanty evidence; I have therefore endeavoured to increase the evidence, and Sir Thomas Whittaker has very kindly brought the figures up to date; and the following table, which is prepared in identically the same manner as that given by Dr. Newsholme, shows that from the larger number of lives the same conclusion is to be drawn:—

United Kingdom Temperance and General Provident Institution.

Ages of insured persons and of persons dying in each group.	Aggregate population or years of life at risk during years 1891, 1896, 1901, and 1906.		Deaths during the years 1891, 1896, 1901, 1906. From all causes.		From malignant diseases.		From malignant diseases (males alone).		Ages.
	Abstainers' section.	Non abstainers' section.	Abstainers' section.	Non-abstainers' section.	Abstainers' section.	Non-abstainers' section.	Abstainers' section.	Non-abstainers' section.	
Under 24	2,314	445	6	2	—	—	—	—	—24
25—34	8,559	4,140	23	23	—	—	—	—	25—34
35—44	13,406	9,005	58	58	1	4	1	4	35—44
45—54	15,645	13,571	143	177	20	14	20	14	45—54
55—64	12,475	14,000	229	365	20	38	20	33	55—64
65—74	6,858	8,833	301	516	22	64	20	50	65—74
75—	2,121	2,736	274	408	13	20	12	17	75—
—	61,378	52,730	1,034	1,549	76	140	73	118	—

PRIMARY CANCER NOT ALWAYS SINGLE.

It comes to this, then, that all these so-called causes of cancer—age, chronic irritation, X rays, and alcohol—agree in being conditions that wear out the cells of a part; they add to the number of cell generations, they deteriorate the evolution of the individual cell, they appear to lessen the hold over the cell of the great primal cell law, and so they cause cancer. One objection that may well be raised to this view lies in the occurrence of primary cancer as a single lesion. It is easy at the first blush to find in this a complete refutation of what I have been trying to establish. But the more I have thought of this objection the less convinced I am of its worth. A physiological essay *de senectute* would be very valuable. Wherein lies the true essence of senility? Is it simultaneous in all our tissues? Are we animated illustrations of Oliver Wendell Holmes's "wonderful one-hoss shay"? And, if not, if one organ or tissue may grow old before its fellows, are we quite wise in holding that all the individual cells of a given organ must grow old together?

But we must not lose sight of the fact that cancer is not always single in its primary seat. My colleague, Dr. Young, among others, has published a number of instances of multiple primary cancer in the Fourth Report of the Middlesex Hospital Cancer Research Laboratory. In my limited experience I have seen such cases as these: in one case a woman presented three cancerous growths in her left breast, all of them noticed at the same time, no one of them larger or notably different in any way from its fellows. I removed the breast, and have one half of it on the table before me. Three times I have been consulted by women with a tumour in each breast, small, far distant from each other, and, except for enlarged glands in the axilla, without evidence anywhere of metastasis, so that I could only regard them as simultaneous primary cancers. One of these patients submitted to amputation of both mammæ in 1899, and has remained without evidence of metastasis until now, so that it is reasonably certain that in her case one breast was not infected from the other. Many times I have seen cancer occur in the breast at an interval after removal of the opposite breast when there was no evidence of metastasis elsewhere, and the subsequent progress of the case was so exactly similar to the disease occurring in one breast only, that I was forced to see in it a new attack of the disease, and not the development of a metastasis from the earlier tumour. Twice over it has happened to me to be called to do colotomy for chronic intestinal obstruction that had become complete, and in which examination of the rectum revealed a stenosing growth within easy reach of the finger, but further examination showed a second independent, annular carcinomatous growth, in one case in the descending colon, and in the other in the transverse colon.

Last year I was consulted by a patient whose left breast had been removed for cancer in 1902; she had had three subsequent operations. She came to me complaining of an extremely severe pain along the distribution of the ulnar nerve, and I found a very dense, and firmly fixed lump of growth close to the coracoid process. I advised her to try what radium would do to relieve her pain; immediately after exposure to radium for 48 hours, carried out by Dr. Finzi, she lost all pain in the arm and hand, and it never returned. The radium was applied on a few subsequent occasions in the hope that it would lead to the disappearance of the growth—of this happy result I saw no proof; but meanwhile an epithelioma developed in the left labium majus, ran a rapid course, and was the cause of her death in December, 1909.

In the lip I have, on several occasions, seen two or more quite independent primary growths, and in June last I saw a very early epithelioma of the tongue which proved, when subsequently removed by Mr. Spencer, and examined by Dr. Bashford, to be starting from four separate centres. Of multiple rodent ulcers I have had very numerous instances. Multiple epithelioma in lupus and in X ray dermatitis is also well known, and from Kashmir we are told of multiple kangri cancer. Were I, on the other hand, to try to give you any adequate conception of the irregular incidence of old age, I should need a separate lecture and a much wider knowledge than I can even pretend to possess. But let us take one example—and that the best known of all, the hair—what numerous varieties in the senile changes in the hair we see! It may fail to grow without change of colour; it may lose its colour and persist in growth; again, these variations may affect the hair in one part of the body only, or in small areas only, or even be limited to the product of a single hair follicle. If age can thus influence the growth of certain hair-forming epithelium, why may not the age-effect that leads to cancer start in a single epithelial cell?

IMMUNITY.

The only other aspect of the cancer problem to which I would refer is expressed in the word *immunity*. This word is specially associated with the processes by which we are enabled to withstand successfully the attacks of pathogenic organisms. It is clear, however, that if cancer is not due to any similar cause, but arises from a failure to continue the cellular development of a part exactly in accordance with the pattern of normal growth, we must not look for immunity from this disease along the lines in which we find it for infections. Careful search by many observers has failed to find evidence in cases of cancer of the activity of these protective forces which play so great a part in the life-history of infective diseases. In the last Croonian lecture at the Royal College of Physicians Dr. Andrewes gave a very full account of the part played by leucocytes in protecting against infection. There is no like tale to be told of their activity and power against cancer. Blood changes there are in the *late stages* of the disease, when other factors than the presence of a malignant growth are active, but none of a protecting character have been demonstrated in the early stages of cancer, when that disease alone is present to disturb the harmony of nutrition. We have in this another fact which strengthens the contention that cancer is not an infection disease. If the disease differs wholly in nature from those infections in which immunity has been chiefly studied, the problem of cancer immunity will also be different.

Accepting the view of cancer that I have tried to submit to you, cancer immunity might be evidenced in one or more of the following ways:—

1. The power of living cells to conform to the law of normal development and to avoid that increased multiplication,

defective differentiation, and tendency to intrude themselves into, and grow in, neighbouring cell territories, which together connote cancer.

2. Opposition to the intrusion of cancer cells into, and their development in, heterologous tissue.

3. Inhibition of the growth of cancer or destruction of living cancer cells.

What can we say under each of these heads? Does clinical experience or experimental pathology throw any ray of hope across the dark sea of malignant disease? They do. The deep impress of the primal laws of development holds the cells of our tissues in true and loyal obedience to the very end, in the almost infinite majority of cases, and in the large majority of individuals. The incidence of disease, and immunity from its initial attack, are of course complementary, and the same fact can be expressed either in terms of disease or in terms of immunity. Thus the public have been distressed by the oft-repeated statement that 1 out of every 8 women who reach the age of 35 dies subsequently from cancer; and of the men who attain 35 years, 1 of 13 dies from cancer! This no doubt is true, but we can express the same fact in terms of immunity, and say that 7 out of the 8 women and 12 out of 13 men of 35 years of age will not die from cancer! This is the great initial fact of cancer immunity—that in spite of added years, and of all the unfavourable conditions which tend to wear down the obedience of cell life to its fundamental laws, 90 per cent. of men and women who pass down the hill of life hold this dread enemy at bay. The two ways of quoting our cancer statistics always remind me of a scene in that incomparable allegory which we all had read to us in our childhood, and therefore too often put aside in our maturity. You remember, sir, that when the Pilgrim is taken into the Interpreter's house to have some of the mysteries of human experience explained to her she is shown, to use Bunyan's inimitable words, "a room where was a man that could look no way but downwards, with a muck-rake in his hand. There stood also one over his head with a celestial crown in his hand, and proffered him that crown for his muck-rake; but the man did neither look up nor regard, but raked to himself the stones, the small sticks, and the dust of the floor." The 1 in 10 of failure that our pathologists tell us of is "muck-rake lore"; the 9 in 10 of success in the great drama of cell-life is like the angel's crown—it is immunity.

Of the second kind of immunity—the opposition to the intrusion of cancer cells into the heterologous tissue—we have plenty of evidence. There is first of all the difficulty in cancer grafting, and then the fate of many of the cancer cells and minute cancer emboli that get into lymphatics and blood capillaries; the majority of them are overwhelmed by the opposing influence of the endothelial cells, and only one here and there is ever able to survive. Or let us recall our clinical experience of the very slow progress of many cancers, of their long-enduring limitation to their primary site, in some cases, and of the extraordinarily long period—amounting to ten or even more years—that may elapse between the removal of an active cancer and the development of a metastasis. Do not all these well-established facts tell us that the organism is not left powerless, defenceless, before the intruding cancer cells, and that the opposing foes are not so unevenly matched as students of the failures of these saving powers—the "muck-rake" students—would persuade us? There is a force of immunity which can protect, and does protect, against the chief mischievous power of malignancy; and when a surgeon asserts that every case of cancer can be cured by a sufficient and sufficiently early operation, I can assent when I remember the reality and the efficiency of this force of immunity, which is his great ally.

The third form of immunity is what is popularly known as the "cure of cancer"—*the disappearance of cancerous growth*. Those who are studying the disease in mice report to us that in these animals it is quite a frequent occurrence for a grafted cancerous growth, after attaining some size, to slowly shrink and disappear, and in some series of experiments a large proportion of the grafts that have "taken" have, after a period of growth, spontaneously vanished. Among the 500 sporadic cases of mouse cancer observed by Bashford this event has been witnessed only two or three times. In human pathology, I fear, it is a still less frequent fact, *but it undoubtedly is observed* It is most frequently seen in the gradual absorption and disappearance of small secondary nodules in the skin and subcutaneous tissue. It is occasionally witnessed on a grander scale. Many years ago I showed a patient at meetings of the Clinical Society of London who recovered spontaneously and completely when she seemed to be at death's door from cancerous deposits in the lung and the neck of the femur, secondary to cancer of the breast. She remained well for several years; unfortunately, I have been unable to trace her for the last four years. More recently I have had an equally satisfactory and striking case.

A woman, aged 52 years, was admitted to my cancer ward of the Middlesex Hospital on Feb. 28th, 1906, suffering from advanced cancer of the uterus; that organ was fixed in the pelvis, the cervix was ulcerated, and masses of growth were felt invading the anterior wall of the rectum; she suffered from constant discharge and irregular hæmorrhages. In February, 1907, I find this note: "The vaginal cervix is the seat of a nodular growth, which is hard, but apparently not ulcerated; it extends all round the cervix and infiltrates the posterior wall of the vagina and anterior wall of the rectum. There is also some extension down the left vaginal fornix. The uterus is fixed." She became slowly but steadily worse, and for many months was unable to leave her bed, owing to frequent hæmorrhages and the consequent weakness and the pain, which movement increased. In the early summer of 1908 she gradually lost the use of her lower limbs, and the paralysis extended to both upper limbs until she was literally unable to move hand or foot. My colleague, Dr. Campbell Thomson, kindly examined her on several occasions and satisfied himself that the paralysis was due to exaggerated peripheral neuritis. During the late summer she improved, and when I returned from my holiday at the end of September, 1908, I found that she could just move her hands a little; she was also stronger, with less pain and less discharge, and a local examination showed that the uterus was less firmly fixed than before. Not to weary you with details, the patient got quite well, all the local evidences of disease vanished, and I made this note in July, 1909: "Uterus is small, senile; vagina narrowed at its upper end, vaginal cervix very small, no ulceration or growth to be felt in cervix or vagina; uterus is mobile. The original disease has entirely disappeared."

After keeping her for several months to make sure of her recovery we had to discharge her from our Cancer Charity as she no longer fulfilled the necessary condition of suffering from cancer, and she now earns her living by needlework.

Here is another case:—

(*a*)[1] A trained nurse discovered a lump in her left breast in 1896 when she was 46 years of age. In June, 1897, Dr. Anderson of Faversham removed the breast, and in September, 1898, he removed a lump from the axilla. In January, 1899, she came under the care of Mr. Farnell of Eastbourne, who removed a recurrence in the axilla and two or three nodules in the skin. In May of the same year he thoroughly cleared out the axilla, as there was evidence of more extensive disease there. In November, 1899, and in March, 1900, he excised small recurrences in the axilla. In May, 1900, he again operated upon the axilla and found it impossible to remove the growth under the arm. I saw this patient in September, 1900; the wound in the axilla was unhealed, and there was a firmly fixed mass of growth just below the clavicle; the upper limb was greatly enlarged from œdema. Mr. Farnell and I advised the patient to submit to a certain treatment, which was forthwith carried out. The wound quickly healed; the œdema of the arm and all evidence of the presence of a growth disappeared.

I saw this patient last month, after an interval of ten years, and found her enjoying excellent health; the scars of her numerous operations are the only sign that she has ever been the subject of cancer.

Here is another case:—

(*a*) A single woman, aged 41 years, was admitted under my care in January, 1900, with cancer in both breasts. The disease had been noticed on the right side for two and a half years, and there had been ulceration for a year and ten months; on the left side it had been known to exist for six weeks, and the lump had doubled in size in that time. The disease infiltrated the entire right mamma and the skin covering it, and fixed the part to the ribs beneath; there were enlarged glands in the right axilla and beneath the lower end of the right sterno-mastoid muscle. Several nodules of secondary growth were scattered around the primary growth, and above the nipple was an ulcerative surface measuring 2¼ inches by 3½ inches. There were also two areas of marked venous congestion of the skin, one below this breast and one over the pectoral muscle towards the point of the shoulder. In the outer part of the left mamma was a firm infiltrating mass the size of a large walnut, and in the left axilla were enlarged and tender glands. On Jan. 31st an operation within the abdominal cavity was carried out. Within three weeks the congested areas I have mentioned had become pale, the ulcer was healing, and the secondary nodules were smaller. By March 9th there was no nodule to be felt in the left breast, and I could only detect in that axilla one tiny gland the size of a buckshot; on the right side the lower half of the breast was free from all evidence of growth and the ulcer was healed. By March 27th all that was left of the originally extensive disease were two or three very small nodules of the skin of the chest. On April 18th symptoms of intestinal obstruction developed, an operation was performed, and I regret to say that this patient died quite suddenly while some adhesions were being separated. At the necropsy a few small nodules of growth were found in the subcutaneous tissue over the right breast. No other traces of cancer could be detected. A nodule removed in March presented characteristic appearances of spheroidal carcinoma with a relatively large amount of connective tissue.

[1] Cases marked (*a*) were treated by double oöphorectomy.

Here is another good case:—

(*b*)[2] A woman, aged 57 years, was first seen by me in July, 1903. Her left breast had been removed for carcinoma in April, 1900; four operations for recurrence had been performed since. There was a very considerable local recurrence, enlargement of the third costal cartilage, deposit in the lower flap and under the arm. All the growths have disappeared, the patient is in good general health, and continues at her work. I have seen her from time to time during the last seven years, the last time in October of this year; she was then quite well, except for a little superficial ulceration, which seemed to be due to the treatment that had been employed.

Here is a somewhat similar case:—

(*b*) A woman, aged 44 years, was first seen by me at Middlesex Hospital in September, 1909. Her right breast had been removed for carcinoma. There was an extensive secondary deposit in the chest wall with a wide and deep ulcer. Under treatment this ulceration rapidly cleaned and healed, and the growth has disappeared, leaving a very little thickening to be felt where before there was a mass of deposit.

Her health is quite good and she does all her work.

(*b*) A woman, aged 43 years, was first seen by me in May, 1909. Her left breast had been removed for carcinoma. There was a considerable secondary mass of growth in the lower flap and under the axilla. Under treatment the deposit has steadily decreased in size, and in November of this year there was only a slight thickening to be felt.

Her health is good and she is doing full work.

(*b*) A man, aged 44 years, was sent to me from another hospital as an incurable case in December, 1903. A columnar carcinoma of the rectum had been removed by Kraske's method. There was local recurrence of the disease, and a mass of growth the size of an orange protruded from the sacrum. Thirteen months later—January, 1905—the following note was made: "Good general health, doing all his work (as a postman), no sign of disease." In August this year, 1910, he was seen again, and gives this history. At the end of 1905 there was noticed a warty condition of the old scar; this ulcerated. It was removed, and proved to be a squamous epithelioma. The wound healed well, and he has had no further trouble.

He continues his work as a postman, and enjoys good health. He was seen in October of this year, nearly seven years after his first visit.

Several years ago I excised the left superior maxilla of a woman for cancer. Some months later her attendant in the country sent her back to me at the hospital with extensive recurrence; the cavity left by the removal of the bone was filled with a mass of growth. A year later the doctor asked me to see his patient again, and to my delight I found her in excellent health, and without a trace of the local disease.

(*b*) Another case that I can never forget was that of a woman who had had her left breast removed for cancer and subsequently came to the Middlesex Hospital Cancer Charity with local recurrence, growth in the glands of the neck, and a large brawny arm. She got quite well, and was able to earn her living again at the wash-tub. I had another similar case where the "brawny arm" got quite well, and all the recurrence of the disease disappeared.

THE HOPE OF CURE.

This is not an exhaustive list of such cases that I have myself seen, and I am sure that my experience is not singular. In some of them the disease was not "cured" in the sense of being wholly and permanently removed, but in several there is strong reason for thinking that this word "cure" may be justly used. In many of the cases treatment directed to this end has been carried out; in some there has been no special treatment. In my brief records of these cases to-day I have not mentioned the treatments employed, because my present purpose is not to vaunt a remedy but to state a fact—that cancer, even when advanced in degree and of long duration, may get better, and does sometimes get well. *There is cure of cancer*, apart from operative removal.

All therapeutic cures are obtainable only by the working of physiological forces, and the first hope of therapeutic success comes with the observation of the efficiency of unaided Nature to accomplish cure. You may say to me there is little comfort in all this; you enunciate a philosophical concept, and you tantalise by a record of very rare exceptions in the grey, grim drama of cancer. Not so. These cases, rare though they be, are the sun of our hope. In the darkness of night it is everything to know that there is a sun towards which the earth is revolving, and that if we fix our eyes on the East we shall soon see the grey promise of the dawn and then the many-coloured heralds of the golden sun itself. And as the victims of cancer call to us in the dark night of despair, "Watchmen, what of the night," oh! it is much to know that for cancer-stricken man there is also a sun of healing. We envy the astronomers who know so well the laws regulating the movements of the spheres, that they foretell the happenings of the universe with a precision that is the despair of workers in all the other branches of natural science. But with all their knowledge of these laws they cannot hasten on the day, or affect in one small circumstance the movement of a planet, or alter the destiny of a single grain of meteoric dust. But when the biologist shall know the laws that govern cell-growth, with a knowledge akin in its sweep and accuracy to that of the astronomer, he will have power—the power to prevent, to control, to cure, cancer.

[2] Cases marked (*b*) were treated by Roentgen rays by my colleague Mr. Cecil Lyster.

CONGRESS IN BERLIN.—A National Congress for the Study and Prevention of Infantile Mortality under the auspices of the *Gouttes de Lait*, will be held in Berlin from Sept. 11th to 15th, 1911. The committee of organisation will have charge of the Infants Department of the International Hygiene Exhibition to be held in Dresden from May to October, 1911. The general secretary is Dr. Kellner, professor and director of the Kaiserin Augusta Victoria Hospital at Charlottenburg.

FOREIGN UNIVERSITY INTELLIGENCE.—*Düsseldorf* (*Academy of Practical Medicine*): Dr. Bruno Oertel, *docent* of otology and laryngology, has been granted the title of Professor.—*Giessen:* Dr. Otto Kuffler has been recognised as *privat-docent* of Ophthalmology.—*Göttingen:* Dr. Fromme, assistant in the Surgical Clinic, has been recognised as *privat-docent* of Surgery.—*Gratz:* Dr. Alois Materna has been recognised as *privat-docent* of Pathological Anatomy.—*Halle:* Dr. A. Eberth, professor of pathology, proposes to retire at the close of the current session.—*Heidelberg:* Dr. Ernst Kürz has been appointed Director of the Institute of Forensic Medicine in succession to Dr. Knauff.—*Königsberg:* Dr. Arthur Brückner, *privat-docent* of ophthalmology and surgeon to the ophthalmic clinic, has been granted the title of Professor.—*Leipsic:* Dr. Heineke has been appointed Extraordinary Professor and Director of the University Surgical Clinic in succession to Dr. Perthes, who goes to Tübingen.—*Lyons:* Dr. Courmont, *agrégé*, has been appointed to the chair of General Pathology and Therapeutics.—*Naples:* An Academy of Marine Medicine is to be established with departments for Naval Surgery, Tropical Diseases, and Climatology.—*Tübingen* (*Medical Missionary Institute*): Dr. Fiebig, the recently appointed director, has been obliged by illness to resign the post.—*Valencia:* Dr. Juan Campos Fillol has been appointed Adjunct Professor of General Pathology.—*Vienna:* Dr. Karl Fleischmann has been appointed Director of the Rothschild Hospital.—*Warsaw;* Dr. S. M. Maximovich has been appointed to the chair of General Pathology.

MEDICAL JOURNALISTS' CONGRESS.—The first Congress of French Medical Journalists, which has been organised by the Association of French Medical Journalists, will take place in Paris on March 23rd, 1911. The President is Dr. Maurice de Fleury and the secretary-general is Dr. Cabanès, whose address is 9, rue de Poissy, Paris (5e). The subscription is 6 francs, except to foreign members, who do not pay any subscription. This amount is payable before Feb. 1st, 1911, to M. Le Sourd, 49, rue Saint André des Arts, Paris (6e). The Congress will be held in the hall of the Hôtel des Sociétés Savantes, rue Danton, Paris, and will begin at 9 A.M. on the date fixed. The questions on the agenda are as follows: (1) On the Right of Reproduction of Medical Articles, opened by M. Vitoux; (2) Relations of the Medical Press with Congresses and other Movements of Interest for the Art and Practice of Medicine, opened by M. Ausset; (3) Organisation of an Immediate Reserve or Benevolent Fund, opened by M. Duchenne (Chatel-Guyon); and (4) Usurpation of the Title of Doctor, opened by M. Dieupart. The titles of communications intended to be presented to the Congress must be sent to the Secretary-General before Feb. 1st, 1911. A dinner by subscription will also take place the same evening at 7.45 P.M. Special reductions in railway rates may be obtained by members of the Congress travelling over the French railway companies' systems, by filling up and returning a form which will be supplied by the secretary of the Congress upon application.

The Bradshaw Lecture

ON

THE RESULTS OF BRONCHIAL OBSTRUCTION.

Delivered before the Royal College of Physicians of London on Nov. 1st, 1910,

BY G. NEWTON PITT, M.D. CANTAB., F.R.C.P. LOND.,

PHYSICIAN TO GUY'S HOSPITAL AND LECTURER ON MEDICINE.

MR. PRESIDENT AND GENTLEMEN,—My first duty is to thank your predecessor in the chair for the honour he has done me in nominating me for this lectureship to-day, and to express the diffidence I feel in choosing a subject on which it may seem there is not much that is new to be said.

We are met to-day to do honour to the memory of Dr. William Wood Bradshaw, who, it would appear, was a man of wide interests; he contributed papers on such subjects as the use of cod-liver oil in chronic rheumatism, on narcotics, on abdominal abscess, and other non-professional articles to the *Miscellany* and elsewhere. Born at Bristol in 1801, according both to Foster's "Alumni Oxiensis" and to the inscription on his grave, he was educated at the Westminster and Middlesex Hospitals, taking his M.R.C.S. in 1833. In the early part of the same year he became M.D. Erlangen. He became an Extra Licentiate of this College in 1841, after examination by the President and the "Elects," which entitled him to practise beyond seven miles from London. In 1854 he was elected a Fellow of the Royal College of Surgeons of England. In 1859 Dr. Coplans Hawkins and Dr. R. P. Smith nominated him as a Member of this College, which nomination was approved. At the mature age of 43 he matriculated at Newton Hall, Oxford, and was granted a degree in 1847 without any examination. He married the widow of a wealthy jeweller at Andover, and, according to Mr. Rickman Godlee, to whom I am indebted for his portrait and for much of this information, her money was to be left away in case she re-married; but they bought the reversion, married, and settled down at Reading. He seems to have been a cultivated, refined, somewhat eccentric man with a rather theatrical manner, and never did much practice. He died in 1866; his widow founded a lectureship at each of the Colleges in order to perpetuate his memory.

THE RESULTS OF COMPRESSION OF A BRONCHUS.

The results of compression of a bronchus may be the following.

1. The lung may be slightly reduced in size. There may be definite diminution in the entry of air, but the resonance may be unaltered, and even post mortem beyond an increase in the amount of mucoid contents, and a diminution in the amount of air in the lung, this may be all that can be observed even when there has been definite pressure on the tube.

2. The chest may be hyper-resonant, the lung over-distended, and the diaphragm displaced down abnormally. This occurs only with partial obstruction of the tube when respiration is vigorous, and will be discussed under the results produced by aneurysm.

3. The lung may be reduced in size, airless and solid from collapse. The chest will be dull on percussion. This results when the obstruction to the tube is complete or when respiration is feeble. It may occur within a few hours, and was studied by Lichtheim by observing the effects of introducing foreign bodies into the bronchi so as to completely block them, but practically complete obstruction is generally due to other causes and rarely to the presence of a foreign body. In the early stage the bronchi beyond the obstruction are empty. The lungs in the first and second conditions also tend gradually to become more or less airless.

4. The bronchi become filled with retained secretions, at first chiefly mucus, but catarrhal changes soon ensue, cells accumulate, together with purulent and inflammatory products.

5. Secondary inflammatory changes take place, due partly to the entry of secretions into the alveoli, so that what has been called a retention pneumonia ensues; the alveoli fill with catarrhal cells and giant cells appear, although they are unconnected with tubercle, as has been shown by inoculating animals with the products. When alveolar walls remain long in contact, organisation with obliteration takes place and new connective tissue is formed. The bronchi normally often contain a few staphylococci and streptococci, which when retained in suitable media begin to develop, with the result that pyrexia and a more or less acute pneumonic change develops.

The changes that have taken place so far may all pass away and leave but little damage; but two further changes soon take place—a general fibrosis of the lung beyond the obstruction and a bronchiectasis. These ultimately develop, whatever be the initial process, if the obstruction persist.

6. Dilatation of the tubes. This does not take place equally in all the tubes obstructed, and its distribution is largely determined by local causes. When only one branch of a bronchus has been pressed upon, the dilatation is limited to the tubes in its area. Generally the tubes at the posterior and lower part of the lung are the most affected, probably because the secretion tends to stagnate there and set up local destructive changes as the patient is in the semi-recumbent position.

Normally there is a constant secretion of mucus in the bronchi, which passes imperceptibly out into the larger tubes and thence to the trachea, but we are quite ignorant what is the amount normally secreted in 24 hours. When a bronchus is occluded the mucus at once begins to accumulate and is capable of being secreted under pressure, so that as with an obstructed gall-bladder the tubes become over-distended. Now bronchial contents cannot pass through the bronchial wall on account of the basement membrane; they can only pass out by the bronchus, or be sucked back by inspiration into the alveoli which remain patent, and so on into the lymphatics and the glands. Normally the contents pass almost entirely by the bronchus, because the initial act of expiration consists in the contraction of the lung by its own elasticity, which as the alveoli empty drives the secretion out of the smaller bronchioles into the larger tubes, to be then carried on by the forcible muscular expiration. With a collapsed lung this initial mechanism fails. As the alveoli become blocked, there is a greater suction on those that remain, and this leads to further occlusion of the alveoli, but the movement of the chest on the affected side is always more or less feeble. The result is that, whether the lung is distended or collapsed, the bronchi become distended with mucoid or muco-purulent contents under high pressure, and hence the walls yield. Owing to the interference with the circulation, which is largely dependent on the suction of the alveoli as they open up with inspiration, the arteries being on the proximal and the veins on the distal side, the tissues are insufficiently nourished, and this, added to the local irritation, causes the bronchial walls to deteriorate, so that the elastic and muscle fibres tend to disappear and local dilatations occur.

It is an old controversy as to whether inspiratory or expiratory efforts are the more efficient in the production of bronchiectases, and I am sorry to say that at the present day the latter theory seems to have the more advocates. In the cases under consideration it is difficult to see how violent expiration, compressing the lung forcibly, as with a cough, can throw any greater strain on the inside of the bronchi than it does on the outside. If the same pressure is applied all round the wall of a bronchus it cannot tend to dilate it. The increased pressure of the contained air is the result of the pressure applied to the outer surface of the bronchus. On the other hand, if it is borne in mind that aspiration is applied to the surface of the lung by inspiration, which tends to open it up, and if the alveoli fail to respond, strain is thrown on the deeper parts such as the bronchi; if there is no obstruction they open up and fill with air from the trachea, but when the bronchus is obstructed they must be subjected to strain which tends to dilate them. The feebleness of the respiratory movements spares them greatly, but the contracted condition of the lung tends to set up an inspiratory dyspnœa, and paroxysms occur from time to time, especially with exertion, which must aspirate the tubes and gradually make them dilate.

Consequently we do not find marked dilatation except when there is also in these cases definite fibrosis. The slighter degrees of dilatation are associated with but slight consolidation of the lung. The presence of pleuritic effusion

usually inhibits, or entirely prevents, the dilatation of the bronchi, because the lung not being in contact with the pleura is no longer held up by capillary attraction between the two surfaces, and therefore is not subjected to so much aspiration. There is no evidence that connective tissue in contracting is capable of producing traction on the tubes at all comparable with that exercised by the powerful suction action of inspiration. It was noted many years ago by Dr. Charlton Bastian that in one-fifth of all cases of cirrhosis of the lung the tubes are not at all dilated. This is what might naturally be expected, as respiration would probably be feeble in many, but if the fibroid change were the essential cause of bronchiectasis it would be inexplicable.

It has been suggested that the accumulated weight of the contained secretions will suffice to distend the terminal tubes when a bronchus is compressed by an aneurysm. The terminal tubules are not the ones that are especially dilated, and the tubules lie in a closed box, the chest, and are supported outside by the same pressure as that inside them. The pressure inside the chest may be slightly increased, but there is no difference between the pressures inside and outside the bronchi, which is the important factor.

The essential factors which lead to dilatation of the tubes would therefore appear to be local changes in the walls, the accumulation of secretion under tension, and the effects of inspiration on a lung which is not capable of expanding satisfactorily.

7. Fibroid thickening of the lung. There are several factors which conduce to this result: inflammatory and organising connective tissue changes result (*a*) from the retention of the secretions, (*b*) from the prolonged collapse of the alveoli, (*c*) from the broncho-pneumonia, (*d*) from the peri-bronchial changes which follow on the destruction of the bronchial epithelium, which generally takes place, and finally (*e*) from the interference with the pulmonary and lymphatic circulations which normally depend on the opening up and the contraction of the alveoli. Moreover, when we bear in mind that in health the alveolar surface of each lung amounts to 100 square metres, each air cell being bathed in a film of blood 10μ in thickness, we can realise what a difference it must make to the nutrition of the tissues when the alveoli fail to open and the amount of the circulating blood is enormously reduced; hence retrograde fibroid changes must gradually develop. The fibroid change is therefore also a natural sequence of obstruction, but the causes are not quite the same as those which produce the bronchiectasis.

8. Secondary infections producing a septic pneumonia breaking down into abscesses are not infrequent and vary with the cause; in some they are essential and early, in others a late and accidental development.

9. Gangrene. This especially occurs with malignant disease and when the pulmonary artery is occluded. The communication between the bronchial and pulmonary arteries is a free one, but varies in different cases, and hence gangrene does not always occur even when the pulmonary artery is compressed. The condition may also result from a very virulent infection.

10. Putrefactive changes. Although the bronchi are often dilated, the contents are not always foul. The change is always a serious one, as it accelerates the destructive changes in the lung and introduces a severe toxic poison into the system; the organisms are usually anaerobic, and hence are but rarely cultivated.

11. As a secondary result of the bronchiectasis, especially if foul, there may be a pleurisy or an empyema.

Although stridor is a symptom that at once attracts attention, it is to be noted that it was present in but a very small proportion of the cases examined; it is marked when the trachea is involved, but otherwise was noticeable in only two or three of the cases of growth and aneurysm, yet severe dyspnœa was common.

CAUSES OF BRONCHIAL OBSTRUCTION.

Bronchial obstruction may arise from causes without or within the bronchus. Usually only one bronchus is affected, but in some cases the trachea is involved, as well as one or both bronchi. The external causes producing compression are:—

1. Aneurysm of the aorta (35).
2. Malignant disease (56).
   (*a*) Bronchial glands—
      (1) Primary, usually sarcoma (26);
      (2) Secondary to growth at a distance (6).
   (*b*) Œsophagus, epithelioma (16).
3. Enlarged caseous or suppurating glands (12).
4. Gummata (2).
5. Abscess (3).
6. Dilated left auricle (1).

The internal causes are:—

1. Bronchiolitis.
2. Syphilitic ulceration with scarring (5).
3. Primary malignant disease of a bronchus (usually columnar-celled carcinoma) (8).
4. Foreign bodies in the bronchus (8).

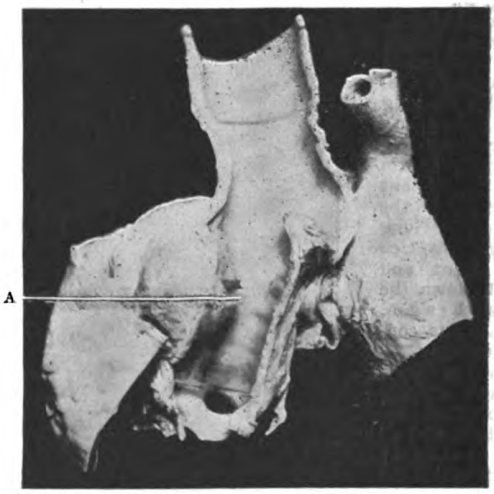
The material I propose to discuss is collected from our records at Guy's Hospital, and I desire to thank my colleagues for their kind permission to refer to cases under their care. I shall only discuss the general results and give a few illustrative cases.

ANEURYSM OF THE AORTA.

During the period taken, out of 11,000 post-mortem examinations there have been 140 aneurysms of the thoracic aorta. Thirty compressed the left bronchus, and 16 of these eroded into it; five compressed the right bronchus and none eroded it. To contrast the results of compression produced by the various causes it may be noted that in this series, 16 cases—i.e., one-half—there was bronchiectasis beyond the obstruction, but in only eight was it associated with a marked fibroid thickening of the connective tissue and increased pigmentation of the lung with a thickened pleura. In several (6) there was also an acute terminal pneumonia, and in four an acute septic pneumonia; in 3 there was an acute gangrene, and sometimes there was an acute pleurisy, but only once was there a pleuritic effusion. When there was no definite dilatation of the tubes the lungs generally showed bronchi full of muco-purulent secretion, often with collapse and a more or less airless lung.

The dilatation of the tubes takes place only in the part of the lung beyond the obstruction and is irregularly distributed, being generally least marked in the anterior part. The amount varies greatly; in some cases the distension of the tubes is but slight, when the lung may be also collapsed or pneumonic. Marked increase in the fibrous tissue, as it occurs less frequently, appears to be to some extent a secondary change and to be partly set up by the absorption of the irritating contents. In advanced cases the fibrous trabeculæ stand out, the lung is very tough, and may be riddled with inter-communicating cavities. In only one in 12 was an acute gangrenous condition noted, although in many the contents were very foul. The bronchiectasis requires at least two or three months in which to develop, but occasionally it took a year or more, and it is very remarkable how very latent the constitutional symptoms may be so long as the changes are limited to the fibroid lung beyond the obstruction. When much foul secretion is expectorated the healthy part of the lung is apt to become infected, and if an acute

FIG. 1.



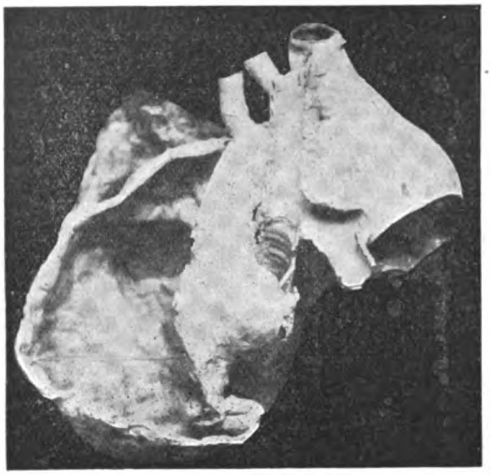
Trachea and bronchi opened from behind to show that an aneurysm of the transverse part of the aorta presses on the anterior and outer part of the left bronchus. In this case the aneurysm is just beyond the transverse arch and has ruptured into the bronchus at A.

septic pneumonia develop the disturbance to health is intense.

The *ascending arch* is not in very close relationship with the right bronchus, and only occasionally will an aneurysm of this part (usually a saccular one) compress the bronchus, and then on its anterior surface; not infrequently it will also involve the trachea; in none of the cases did it rupture into the bronchus. Occasionally the azygos vein, which is in close relation to the right bronchus, may also be compressed, and this may be the explanation of the only case with pleuritic effusion. In none of the right-sided cases did the breath sounds entirely disappear, nor did a local bronchiectasis develop.

A sac connected with the latter part of the *transverse arch* may compress more or less completely the left bronchus on its outer and anterior surface, and often the trachea as well, and very rarely the left pulmonary artery which lies above the bronchus (Fig. 1). This arterial stenosis probably accelerates retrograde changes in the lung and the development of the fibroid thickening, but it did not in any case lead to gangrene. In no case did an infarct form, and in only one did an aneurysm rupture into the pulmonary artery. When the aneurysm comes off lower down it will compress the bronchus from behind and on its outer side (Fig. 2).

FIG. 2.



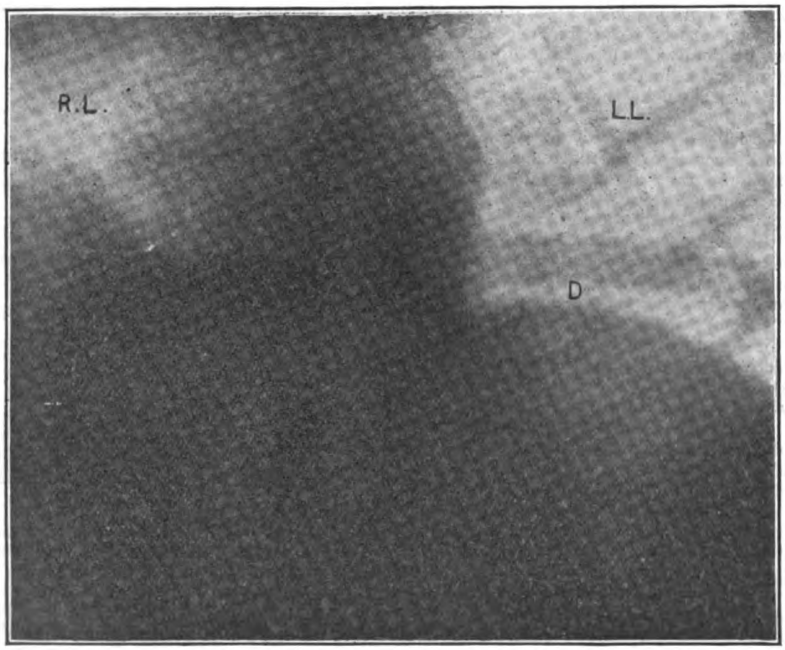
A similar specimen with an aneurysm of the descending aorta; laid open, this is seen to lie on the posterior surface of the left bronchus which it compresses.

Sometimes, however, before the bronchus is completely occluded the lung will become over-distended, there will be a hyper-resonant note, and the distended lung may displace the heart and push down the diaphragm. That this condition may result has been almost entirely overlooked by authors, and no reference is made to it in the text-books. Yet over-distension we know not infrequently results if the respiration is vigorous, when there is laryngeal obstruction in diphtheria, in tracheal obstruction from an enlarged thyroid, thymus, or aneurysm, in asthma with spasm and therefore, with stenosis of the smaller bronchi, and in acute bronchitis and bronchiolitis.

It is also what we might expect. With inspiration the chest expands and the surface of the lung closely attached to it by capillary action follows, and the air is sucked past the obstruction as the lung attempts to open. With expiration there is a contraction of the lung due to its elasticity, which is feeble but sufficient for ordinary purposes. This drives the air from the smaller to the larger bronchi, because the pressure in the former is the greater. When forcible expiration is applied, the bronchi as well as the lung tissue are compressed with an equal pressure; if there is no obstruction the air passes on and the pressure therefore falls in the larger bronchi. When an obstruction exists, however, this mechanism fails, the air has greater difficulty in escaping than it had in entering, and the lung becomes over-distended. The pressure may be so much raised that the diaphragm may be displaced two inches and the heart pushed out of position.

This condition gradually develops and persists for a certain time, but by degrees the bronchi fill with secretion, thus increasing the difficulties of the ingress of air, and as the contained air is not replaced, and is subjected to high pressure, it becomes absorbed by the pulmonary blood, while the lung becomes solid, airless, and dull on percussion. Lichtheim has shown experimentally that when the bronchus is completely occluded this airless condition develops almost at once.

FIG. 3.



Skiagram of the chest taken from the front, showing the greatly over-distended left lung due to pressure on the bronchus by an aneurysm. The left lung is over-transparent, the diaphragm is pushed down, and the heart is pushed over to the right. R.L., Right lung. L.L., Left lung. D, Upper edge of diaphragm on left side.

In six of the cases the symptoms were so suggestive of pneumothorax that this diagnosis was more than once suggested.

This possibility of over-distension as a result of bronchial obstruction has been so far overlooked by all authors that the only definite recognition of the condition I have noted is by the late Dr. Pearson Irvine, who, in the Pathological Transactions for 1878, recorded a case of aneurysm pressing on a bronchus in which the lung was larger than normal, although fibroid and bronchiectasic; he came to the conclusion that the result of the pressure had been first to over-distend the lung, that then secretion had accumulated in the bronchi, and the air had been absorbed, while fibrosis and bronchiectasis had resulted from the greatly increased tension, which had compressed the blood-vessels and impaired

the nutrition of the tissues. C. Jacobsohn has also more than once noted that the position of the dulness produced by a growth at the root of the lung may vary with respiration owing to the over-distension of the affected lung, which is best shown by the X rays.

CASE 1. *Saccular thoracic aneurysm compressing the left bronchus and producing an over-distended lung.*—By some it was thought that the case was one of pneumothorax. The patient was a man, aged 29 years, admitted in November, 1905. He had been in the army and had had syphilis. Cough had been present for a year and had been worse for the last three months, with dyspnœa and pain in the left chest. He had no great distress while in bed; the left chest moved badly; there was no tactile vocal fremitus, and no voice nor breath sounds on the left side. On percussion, the note was hyper-resonant. There was no cardiac dulness on the left, and on the right there was dulness, which varied with respiration, extending from the fourth rib out to beyond the right nipple and down to the liver. There was marked epigastric pulsation, the heart sounds were faint, and no bruit was audible. There was compensatory breathing over the right chest. There was considerable uncertainty with regard to the diagnosis, but it was thought that most probably the condition was due to an aneurysm pressing on the left bronchus. The patient was examined with the X rays. The whole of the left side of the chest was remarkably transparent compared with the right; no foreign body was visible; the heart was displaced nearly 2 inches to the right of the sternum with deep inspiration, and back again behind the sternum with expiration. The diaphragm was depressed on the left side, but no trace of any aneurysm could be seen. (Fig. 3.) The temperature was normal and the pulse 72. There were no stridor, no evidence of any syphilitic ulceration of the trachea and bronchi, and no expectoration. It was elicited that three

FIG. 4.

The bronchi laid open from behind. A, Small saccular aneurysm can be seen opening into the descending aorta, compressing and almost occluding the left bronchus, through which a glass rod, A, has been passed.

months previously a crust of bread had gone "the wrong way," but had this passed into the bronchus there would have been evidence before now of septic pneumonia. The extreme translucency and distension of the left chest, with the absence of any change in the aorta, threw a doubt on the diagnosis of aneurysm, and it was thought that a possible explanation of such marked translucency might be a pneumothorax, although no bruit-d'airain could be elicited, and there was no evidence on the screen of a lung compressed by air. The left axilla was explored with a Southey's tube, but no air escaped. The result of this exploration was to produce an acute attack of pleurisy, and he felt very ill for some time. His temperature two days afterwards was 99° F., and on the next day 101·6°, with a pulse of 112 and intense pain. The temperature did not reach the normal again for nine days.

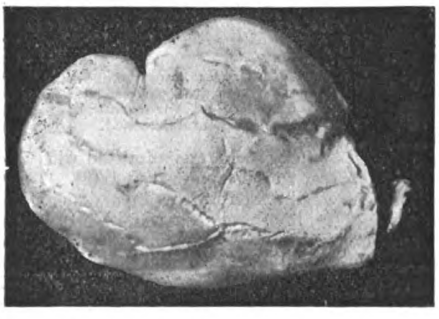
In December the patient was tested with tuberculin with a negative result. Later his opsonic index to tubercle was 0·38. As the condition still remained obscure, the chest was again explored in December with a negative result, except that there was again a sharp attack of pleurisy with pyrexia which lasted for ten days, when the condition again quieted down. At the end of December, 1906, there was an impairment of resonance developing at the left base; there were still an absence of air-entry, diminished tactile vocal fremitus and voice sounds. He now developed pain, with sweating at night, cough, and expectoration, and at the apex behind

FIG. 5.

A section of the corresponding lung showing the reduced size of the lung with fibrosis and bronchiectasis, which has resulted. The fibrous trabeculæ stand out, and there is in addition a destructiv ecavitation in the posterior part of the lower lobe.

there were distant breath sounds. A somewhat tympanitic note was noticed near the cardiac area. No tubercle bacilli could be found. During the next month or two he had a large amount of muco-purulent expectoration which was not foul. In February he began to develop slight clubbing of the fingers, and a rub was audible over the left chest. On Feb. 27th he had a rigor with a temperature of 105° and a leucocytosis of 33,700. He had a sharp attack of pleurisy lasting for ten days. In March the impulse of the heart had returned to the left side of the sternum. There were consonating râles at the back of the left lung and not much difference between the note on the two sides.

FIG. 6.



A piece of over-distended lung showing lines of interstitial emphysema.

It was at first difficult to explain the attacks of severe pleurisy which followed both attempts at exploration. It was clear afterwards that infective fluid from the distended bronchi had inoculated the pleura, as doubtless owing to the great pressure under which it was retained some leaked into the pleura from the puncture. Had the lung not been under tension it would probably not have set up any infection. The

obstruction to the bronchus was not complete as there was expectoration, although the movement was so feeble that we could not hear air being sucked up to the surface of the lung. It is noticeable that so long as the lung remained quiet, and before it became fibroid, so that the contents did not pass into the lymphatics but remained in the lung, or were expectorated, the patient remained free from fever, yet the faintest trace in the pleura set up a violent reaction.

His symptoms gradually quieted down, and he continued fairly well. I did not see him from April, 1906, to the end of February, 1907, when he was seized with general pains, pyrexia, and troublesome cough. Soon the expectoration became abundant and extremely foul, so that he vomited frequently. On readmission he was very ill and feeble. The left chest was contracted; the movement was deficient; there was an impaired note at the apex and below, and also in the axilla it was dull. Over the upper spaces the air-entry was deficient and broncho-vesicular; below it was lost. Numerous râles were audible, with compensatory breathing on the right side. The pulse was irregular, 108; the impulse was dragged three-quarters of an inch outside the nipple by contraction of the lung. A diagnosis of gangrene of the lung was made. The condition proved fatal on the 26th, three days after admission

Post mortem a saccular aneurysm opening just at the commencement of the descending aorta had compressed the left bronchus and produced a condition of fibrosis of the whole of the left lung with recent septic broncho-pneumonia. (Fig. 4.) There was bronchiectasis of the tubes beyond the compression, with cavitation due to recent putrefactive infection, which was most marked in the posterior part of the lower lobe. (Fig. 5.)

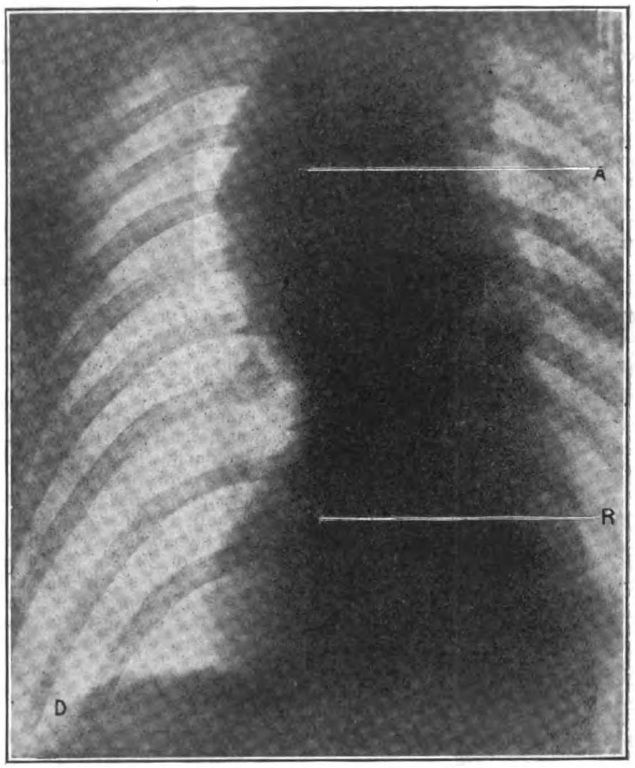
Until I saw this case I was quite unaware that a partial compression of a bronchus was capable of producing an over-distended lung, which might be confused with pneumothorax.

CASE 2.—The patient was a man, aged 30 years, who was admitted with bronchitis and intense dyspnœa, which soon proved fatal. The trachea was found to be compressed by an aneurysm of the transverse aorta. The lung was enormously over-distended (Fig. 6) and had ruptured, producing interlobular emphysema, as shown by the lines of the interlobular septa which, when fresh, were distended with air, but now are collapsed and empty.

I am indebted to Dr. E. W. Martin for the two following skiagrams which excellently illustrate my contention. Fig. 7 represents a chest taken from the back. The left side is uniformly transparent; the intercostal spaces are wider than on the right. The diaphragm is flattened and displaced downwards and the heart to the right. The aneurysmal dilatation of the arch, with the marked excursion of pulsation, is well shown. There were well-marked signs of an aneurysm compressing the left bronchus. The condition was diagnosed on account of this skiagram as pneumothorax with aneurysm, but the appearance is really due to an over-distended lung. This will be at once apparent if we contrast it with an equally good skiagram of a pneumothorax, also taken so long ago as 1902 by him. (Fig. 8.) Here the air space is more transparent than was the over-distended lung, but the lung, shrunk up near its root, is obvious, due to a ruptured phthisical cavity above this, which was wanting in the other picture. The heart and diaphragm are more displaced, and the latter has a much sharper outline.

[Since the lecture Dr. Martin has been able to obtain me the following notes of the case, which was in Victoria Park Hospital in 1902. There was pulsation over the upper part of the sternum, with a dull note. The note over the left chest was resonant; no cardiac dulness; apex beat was one inch to the left of the sternum in the fifth space; the heart sounds were very feeble, but best heard on the right of the sternum; extremely feeble breath sounds all over the left chest, it hardly moves at all, and the whole chest, back and front, is larger than the right. An exploring syringe was introduced into the seventh space on the left side, and connected with a tube under water, when about 30 bubbles of air escaped. The condition at that time was considered to be one of pneumothorax and aneurysm. The escape of the bubbles of air naturally suggested this; the skiagram, however, is definitely that of an over-distended lung, and I am supported in this view by Dr. Hugh Walsham. The air must therefore have escaped from the interior of the lung itself, and the explanation is that it must have been retained under great pressure, which is also indicated by the condition of the lung.]

FIG. 7.



A skiagram of chest taken from behind showing over distended, abnormally transparent left lung due to aneurysm compressing left bronchus. A, Aneurysm. R, Heart displaced to right. D, Left diaphragm displaced and flattened.

CASE 3. *Aneurysm compressing the left bronchus. Signs at one time suggesting pneumothorax.*—The patient was a man, aged 39 years. In October, 1906, there was pain behind the sternum. The physical signs on admission left it doubtful whether he had pneumothorax or an obstruction of the left bronchus. There were cough and stridor, there was deficient movement of the left side, but it looked enlarged. Some hyper-resonance was present. There were no tactile vocal fremitus and no breath sounds, and the voice sounds were diminished; on the right side there was compensatory breathing. The heart sounds were not well heard on the left side, but were better than normal on the right side. On Dec. 15th a skiagram showed slightly increased opacity in the region of the aorta. On Jan. 7th there was no dulness; no breath sounds were audible over the left chest. In February breathing was audible behind in the upper part, but the cardiac impulse was not palpable. In March there was a better entry of air into the left lung with a few râles. The impulse was in the sixth space one inch outside the nipple. On March 14th the left base was becoming dull; when the patient went out in May the left chest had an impaired note with deficient breath sounds. Fatal hæmoptysis occurred a few weeks later.

CASE 4. *Saccular aneurysm compressing and eroding the left bronchus; high-pitched note over the left chest; signs suggestive of pneumothorax; fibrosis with bronchiectasis.*—The patient, a man, aged 38 years, had had cough and pain in the chest for six months. The left chest was *less flattened* than the right, there was defective movement, and a *high-pitched note* all over on the left side. There was no cardiac dulness and no dulness in the axilla. Voice sounds were deficient and breath sounds absent. Behind, the *left chest bulged more* than on the right; there were diminished tactile vocal fremitus and voice sounds. The chest circumference was 36 inches and the expansion three-quarters of an inch. The heart sounds were indistinct, but were best heard behind the sternum and to the right. Diagnosis: growth or pneumothorax. The temperature oscillated between 102° F. and normal while the patient was in the hospital. On April 26th, 1902, the chest was *smaller*, being only 34 inches, and there was a slightly impaired note over the præcordium. Fatal hæmoptysis occurred.

Post mortem a saccular aneurysm was found opening into and compressing the left bronchus. There was a septic pneumonia of the left lower lobe, with fibrosis and bronchiectasis.

CASE 5. *Aneurysm of the descending aorta opening into the left bronchus. ? Pneumothorax or aneurysm.*—The patient, a man, aged 38 years, had dyspnœa and pain with impaired movement and absence of breath sounds on the left side; there was a hyper-resonant note and the heart was displaced to the right. On Sept. 20th, 1897, there was some dulness at the left base. Fatal hæmoptysis occurred while the physician was preparing to explore. ? Pneumothorax or aneurysm.

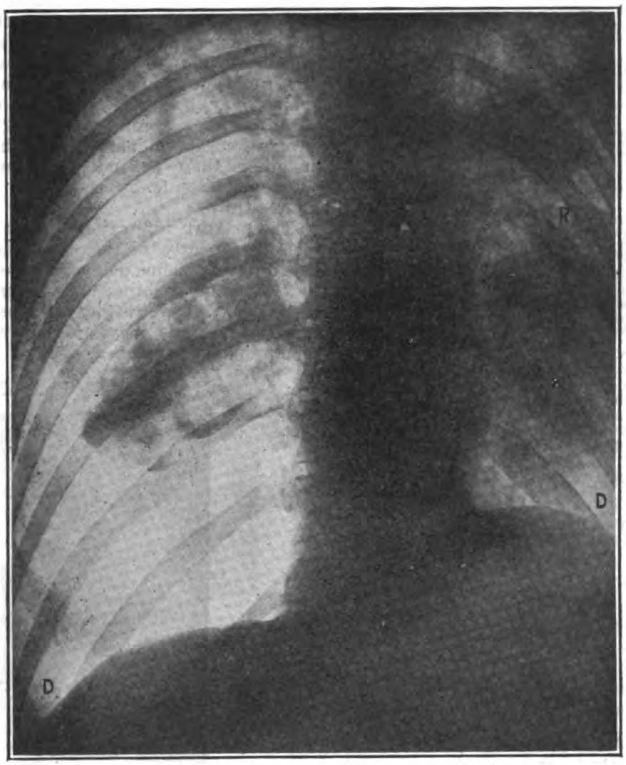
Post mortem there was an aneurysm at the commencement of the descending aorta, which had opened into the left bronchus near the point of bifurcation. The lungs were mottled with blood that had been sucked in; the edges were emphysematous. The lower lobe was solid, mottled grey-green, with a quantity of odourless pus in the tubes.

CASE 6. *Aneurysm compressing the left bronchus; left lung over-distended, the signs suggesting pneumothorax.*—The patient had a well-formed emphysematous chest, the left side being *more bulky and larger* than the right and moving scarcely at all. No apex beat could be felt; there was a slight pulsation in the third right space 1½ inches from the edge of the sternum. There was a *hyper-resonant note* in the left chest obliterating the cardiac and the splenic dulness. Breath sounds were absent on the left side and very faint at the apex; there were no tactile vocal fremitus, no voice sounds, and no bruit d'airain. The circumference of the left chest was 18 inches; at the level of the right nipple 17½ inches; at the level of the left 17¾ inches. There was no movement on the left side. Diagnosis: pneumothorax due probably to the rupture of a phthisical cavity. The temperature was remittent. Later the note at the left base was slightly impaired.

The following is a remarkable instance in which the patient survived 20 months after the first severe hæmorrhage from the erosion of the aneurysm into the bronchus, the opening being probably a valvular one, which he was able to close by retracting his head and thus diminishing the antero-posterior diameter of his chest.

CASE 7. *Aneurysms of the aorta, one compressing the left bronchus, and another the trachea; recurrent hæmoptysis for 20 months before death.*—The patient, a man, aged 50, under the care of Dr. M. Parry-Jones of Derby, had four years ago dyspnœa on exertion, when an aneurysm was suspected; 20 months before death hæmoptysis (one pint) occurred; the blood came more rapidly when he leaned forwards, and was checked when he drew back his head. He also noticed that turning his head to the right reduced the volume of his right pulse. Gradually a slight pulsation with a diastolic jog developed beneath the left clavicle. There were diminution of breath and voice sounds on the left side, but no dulness. There were four further attacks of hæmoptysis amounting to several ounces during the next year, but by reducing his fluid to 13 ounces and keeping quiet he kept them in abeyance.

FIG. 8.



Complete pneumothorax left side; heart displaced in front of sternum. D, D, Diaphragm displaced and flattened. R, Right lung subject of caseous tubercle. Note the wider intercostal spaces on the left side.

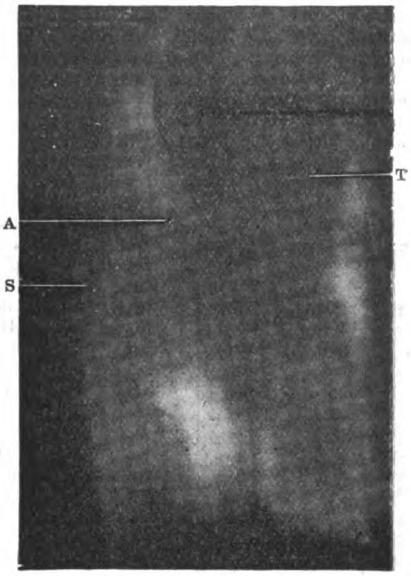
Three dilatations were found involving respectively the ascending, transverse, and descending portions of the arch. The opening into the air tubes was closed up. There was no great bronchiectasis. It is remarkable he should have survived the first rupture for 20 months.

CASE 8. *Saccular aneurysm of the descending aorta which compressed the left bronchus and the œsophagus.*—The patient, a man, aged 49, under the care of Dr. W. P. Morgan of Seaford, had had pain for a year in the left chest and cough for three months. Recently there had been expectoration in the morning streaked with blood. He had dysphagia, liquid food frequently coming back again into his mouth after some little time if he swallowed. Dyspnœa ensued on exertion; there was defective movement on the left side, with distension of the veins on that side of the chest. There was resonance with deficient breath sounds over the left side, and a very marked delay (almost one second) in the onset of inspiration, which was quite noticeable when a double stethoscope was used. There were deficient voice sounds and the tactile vocal fremitus note was very slightly impaired, if at all. (Fig. 9.)

The features especially associated with bronchial pressure from aneurysm may be summed up as follows: 1. The left bronchus is involved six times as often as the right. 2. The right is very rarely eroded. 3. Resonance with silence. There are deficient or absent breath sounds over the left lung with a resonant or hyper-resonant lung. This does not necessarily indicate more than a partial occlusion of the bronchus, and occasionally in an early stage the left lung may be over-distended and be too transparent to X rays. The condition has then to be diagnosed from pneumothorax. 4. With X rays dilatation of the aortic arch can generally be detected as the disease of the wall is generally multiple and diffuse. The local aneurysm often is best shown in a

view in the half-turned position with the patient sitting up. The deficient and delayed movement of the lung, the alteration in its density, and the abnormal position and movement of the diaphragm are usually obvious. Occasionally no local aneurysm nor yielding of the aorta can be detected. 5. Later, the development of an impaired note rather than complete dulness, with gradual development of bronchiectasis. It is remarkable how the amount of change which develops is always under-estimated owing to the breath

FIG. 9.



A skiagram of an oblique view, showing an œsophagus with its upper part distended with bismuth and milk. The spine S lies to the left, and the shadow of a saccular aneurysm A extending up to it can be seen compressing the œsophagus; below this point a linear trickle of bismuth alone passes. The shadow extends higher than the point of compression. T is the thoracic aorta.

sounds being absent or feeble. 6. Absence of pleuritic effusion. 7. Retardation of the onset of inspiration on the affected side. 8. In nearly half the cases more or less hæmoptysis. Pain with dyspnœa on exertion are very constant symptoms.

As soon as the mucous membrane ulcerates the liability of the contents of the bronchi to become freshly infected is greatly increased, as the spot is very apt to become a nidus for organisms itself. Hence necrotic changes in the lung occur more often when the tube is ulcerated than when it is only compressed, just as primary growths in the bronchus are especially associated with gangrene.

MALIGNANT DISEASE (55 CASES).

The growth may originate (1) in the bronchus, (2) in the glands at the root of the lung, (3) it may be a secondary deposit in the glands at the root of the lung and grow into it along the bronchus, and (4) as an epithelioma of the œsophagus ultimately invading the bronchus.

1. Primary growth in a bronchus is rare (8); in four cases it started in the right and in an equal number in the left. The growth is generally a columnar-celled carcinoma —at least four-fifths of cases of primary cancer of the lung start in the bronchial mucous membrane. Most of the cases came under observation for pleuritic effusion, which not infrequently required tapping more than once. In half the cases gangrene of the lung developed. In some a fragment of growth was expectorated, and thereby its malignant nature determined. There are generally pain and pressure signs.

2. Growth in the glands (26 cases) half affecting each bronchus. Two were described as lymphadenoma, but as they eroded the bronchus it is more probable that they also were sarcomatous.

3. Secondary deposits in the glands at the root of the lung (6 cases); the growth compressed the bronchus and invaded the lung.

4. Epithelioma of the œsophagus (16 cases). The two bronchi are invaded with equal frequency. In four they were only compressed; in the others the growth had fungated in. With epithelioma the pulmonary condition rapidly proves fatal, with a septic pneumonia, abscess formation, or gangrene. Bronchiectasis and fibrosis have not time to develop. The rapidly fatal changes are due to the infection with food from the communication with the œsophagus. The food is doubtless often squeezed in by the contraction of the œsophagus owing to the obstruction of its tube beyond by growth. In one case a deposit in a gland led to compression of the lower branch of the left bronchus with the development of bronchiectasis beyond. A troublesome paroxysmal cough, pyrexia, and pain are the indications of the onset of trouble in the lung to which foul expectoration is soon added.

The special features of malignant disease are the frequency with which pleuritic effusion and also gangrene develop (more than half). The effusion is an early sign, and both this and the collapse of the lung, as well as the growth itself, all give dulness which is often quite marked. It has been pointed out by writers that the physical signs given by the changes in the lung and the pleura are obvious at an early stage and tend to obscure the evidence of the growth itself. In many the pulmonary artery is also compressed and may be occluded, and this much more frequently so than by an aneurysm; hence the rapid development of extensive patches of gangrene which may lead to the development of large cavities, often without fibroid thickening of the wall. In a small proportion fibroid changes in the lung are well marked; in others there has not been time for them to take place. Bronchiectasis is by no means always present, but only in one-third.

The massive infiltration of the root of the lung occludes not infrequently the lymphatics and blood-vessels as well as the bronchi: hence œdema of the pulmonary tissue tends to develop and the bronchi to become more rapidly overfull of secretion. Stridor is not infrequently present, especially on exertion, but is most marked when the growth has also compressed the trachea.

FIG. 10.

The left lung presents a large cavity the anterior wall of which was torn on removal. When fresh the walls were flocculent, but unfortunately in preparing the specimen they have become smooth. A probe A can be seen projecting through the remains of the bronchus; the pulmonary artery was also involved.

CASE 9. *Squamous epithelioma of root of the lung with destructive disease of the lung beyond.*—The patient was a man, aged 65 years, who for 20 months expectorated material of the colour of strawberries and cream, at one time amounting to a pint a day. The only physical signs owing to the occlusion of the bronchus were deficient breath sounds over the left base.

Post mortem the left lower lobe of the lung was excavated out into a cavity 4½ inches across, with necrotic, flocculent walls; there were numerous dilated bronchi in the rest of the lobe with fibrosis. The bronchus and pulmonary artery were compressed, being embedded in the mass of growth. The

primary seat was not determined as the post-mortem examination was limited to the thorax (Fig. 10).

This specimen is of interest as showing the early formation of a single large cavity from destructive changes from necrosis, and in this instance without any foul secondary putrefactive changes. It illustrates the fact that the physical signs of a large cavity over 4 inches across may be almost *nil* when there is stenosis of the bronchus, owing to the absence of any breath sounds. Contrast it with the extensive fibrosis and the usual absence of large cavities which result when the pressure is due to an aneurysm.

As another example showing how a mass of sarcoma growing into the root of the lung associated with occlusion of the pulmonary artery tends to form large cavities, in addition to a general fibrosis of the lung with moderate dilatation of the tubes, the following may be quoted.

CASE 10.—The patient, a woman, aged 38 years, died a few hours after admission. At the inspection the left lung was healthy. A section has been made of the right lung, with the mass of growth at its root. A rod has been passed through the much-constricted bronchus. The pulmonary artery except for a small branch was occluded. Almost the whole of the lower lobe was excavated out into a cavity. There were smaller cavities in the lower part of the upper and middle lobes with general dilatation of the tubes in a dense fibroid tissue. (Fig. 11.)

FIG. 11.

CASE 11. *Primary cancer of bronchus; expectoration of a nodule of growth; duration of symptoms three and a half years; fibrosis with bronchiectasis.*—The patient, a man, aged 40 years, first noticed some wheeziness in September, 1901, and during the year 1902 he became short of breath on exertion; he lost half a stone in weight, there was an ounce of muco-purulent secretion daily, and on exertion or deep breathing there was some stridor. The wheeze or musical whistle with expiration was loudest when he lay on his left side. He had no pain. In October there were deficient breath sounds with a slight squeak, and deficient voice and tactile vocal fremitus over the left side, with dulness in front at the apex. There was similar deficiency in breath sounds at the apex; the base was fairly normal; the right side was quite normal. With a skiagram there was a slight opacity at the left apex, but less than is often met with in growth, although the evidence pointed in that direction. There was no evidence of aneurysm. He was subject to attacks of pyrexia with an increase in the expectoration. He continued to lose weight, and towards the end of the year there was a pleuritic rub. He had a few slight rigors. In December the dyspnœa had increased considerably, and he was very frequently sick unless very careful with his diet. A rough, blowing systolic bruit developed to the left and above the heart; the resonance became more impaired above, and the breathing indeterminate, with an increase in the voice sounds. The impulse of the heart was pulled upwards and outwards. There was pulsation over the affected area at the left apex which apparently was transmitted from the heart and was not due to an aneurysm. The diaphragm was as high as the fifth rib in the axilla. During the year 1903 he was able to get about if he moved slowly. Expectoration was limited to half an ounce; it was slightly blood-stained, but never offensive. The amount of blood varied somewhat.

The patient continued fairly well until May, 1904, when he had an attack of pericarditis which lasted for six weeks. In December, 1904, he coughed up a piece of tissue an inch long and three-eighths of an inch in diameter, which came away quite easily with only a little hæmorrhage. On microscopical examination this was found to be a portion of glandular carcinoma composed of tortuous columns of columnar cells; there were also cells in alveoli which communicated with these columns. Another nodule was expectorated in the following March. On April 18th, 1905, I again saw him with Dr. R. P. Cockburn of Ealing. The patient had got worse during the last six months, frequently expectorating as much as an ounce or two of blood. The dyspnœa had increased. He was practically confined to his bed. For a long time he was unable to lie on his left side, and latterly only on his right side. There was pulsation as high as the third space above the nipple, to the left of the heart; there were a noisy, wheezy stridor and noisy expectoration. We came to the conclusion that a nodule of the growth had fungated through, probably into the trachea, and it was a question whether there was not originally a foreign body in the left bronchus which was the starting point of his trouble. He died the next day.

On post-mortem examination the right lung was found over-distended but otherwise normal; there was an adherent pericardium. There was a mass of growth at the root of the left lung in which the bronchus and vessels were embedded. No foreign body was found; the left lung was extremely contracted. The upper lobe was reduced to a mass about two inches across and seven inches long, riddled with small bronchiectasic cavities, while the lower lobe was converted into a very dense fibroid mass no bigger than the lung of a child of six and was also riddled with cavities.

COMPRESSION BY INFLAMED GLANDS (12 CASES).

The 12 cases were: enlarged glands 7, suppurating and opening into a bronchus 5. These cases occur mainly in infants in whom the glands are active and the antero-posterior diameter of the thorax is so small that a mass of glands at the bifurcation of the trachea may lead to serious symptoms, but especially when they press on the trachea. They less often compress the bronchi seriously, and this generally only occurs when there are enlarged glands on each side of the bronchus, which accounts for the comparatively few cases in which enlarged caseous glands give rise to pressure symptoms. The cases of pressure on the trachea are apt to be looked upon as due to laryngeal diphtheria, but the absence of movement of the larynx is of diagnostic importance. Their enlargement may be made out by dulness internal to root of one scapula, by the opacity shown by X rays, by the absence of breath sounds on one side, and by a venous hum over the sternum on retracting the head, although I have only been able to elicit this sign three or four times.

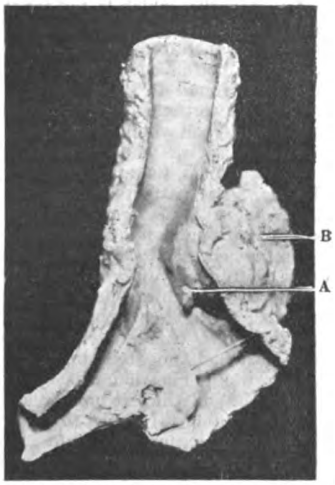
When a suppurating gland breaks into a bronchus the child has severe dyspnœa with violent paroxysms of cough, and may bring up some purulent secretion, while there is soon an active development in the lung beyond of fresh physical signs. When in a child there are evidences that a bronchus is compressed it is far more likely to be due to an enlarged caseous gland than to a foreign body, unless there is a definite history of sudden onset of symptoms after swallowing something. Most of the cases due to caseous glands are complicated with phthisis; less than half of them are diagnosed; but X rays make it much easier to do so now than formerly.

In 3 cases abscesses opened into a bronchus: (1) empyema, right side; (2) suppurating bronchial glands secondary to suppurative pylephlebitis; and (3) abscess communicating with the œsophagus and gangrenous cavity in the lung.

CASE 12. *Compression of trachea and right bronchus by enlarged caseous gland.*—A child, aged 2 years, was admitted to hospital in 1910 with dyspnœa and stridor, which was supposed to be due to laryngeal diphtheria. On examination it was found that there were deficient breath sounds over the right side, with impaired resonance. The larynx did not move with respiration, and compression of the root of the right lung by caseous glands was diagnosed. The child died a few hours later. A large caseous gland compressed the

trachea in front, just above the bifurcation. Another large gland between the bronchi was softening; the right lung was collapsed and airless; the left lung was normal (Fig. 12).

FIG. 12.



A trachea and bronchi laid open from behind showing the opening (A) into the right bronchus of a caseous gland (B) which had suppurated.

DILATED LEFT AURICLE.

A cause of pressure sufficient sometimes to cause physical signs during life but rarely to present much evidence post mortem is a dilated left auricle due to mitral stenosis, to which attention was directed many years ago by Dr. Wilkinson King.

CASE 13. *Pressure on left bronchus by dilated left auricle.*—In 1888 a woman, aged 50 years, was seen suffering from mitral stenosis with a greatly dilated left auricle. At the inspection there was also a softening ante-mortem clot in the appendix. The left base was airless and sank in water; it could be inflated less than the right one, which was also œdematous and engorged. Both were deficient in air. The left bronchus was markedly compressed by the dilated left auricle.

FIBROUS BRONCHIOLITIS DUE TO IRRITANT GASES.

Inhalation of irritant gases is a well-known cause of intense dyspnœa and bronchitis, not infrequently fatal, with a greatly over-distended lung, of which we have had examples from time to time. Fraenkel has shown that this condition may be due to an acute fibrous obliterating bronchiolitis, which may develop within a fortnight. He has recorded cases after inhalation of the fumes of chlorine, of cow hair and lime dust, and after calcium chloride dust.

A man after inhaling chlorine had intense dyspnœa, which passed off but returned next day, when he was cyanosed, with an extremely distended lung and fine crepitations. The condition again cleared up, to return again after a week, when he died. Widespread fibrous peribronchial inflammation was found round the smaller bronchioles, with necrosis of the lining epithelium, producing constriction of the tubes with dilatation beyond. Schmorles has described a similar condition in the broncho-pneumonia of measles, with obliteration of the bronchioles. The ingravescent cyanosis with dyspnœa and a rapid and great increase in the size of the lung are the essential points, especially when there has been exposure to irritant gases.

STENOSIS OF THE BRONCHI FROM SYPHILIS.

Out of seven cases, two were due to gummata pressing on a bronchus. The way in which the tubes dilate under violent inspiratory efforts with bronchial obstruction is well shown in a case (No. 14) of a man, aged 64 years, where a gumma pressed on the upper division of the right bronchus. The upper and middle lobes were over-distended, the lower lobe was airless from compression with five pints of fluid. The illness was rapidly fatal. The second (No. 15) was a chronic case with a gumma compressing the superior cava and the right bronchus; the bronchi beyond were dilated up to their extremity and their walls were thickened; the lung was solid. There was extensive pleuritic effusion into the left side secondary to the pressure on the cava.

There were five cases of cicatricial stenosis of the bronchus secondary to syphilitic ulceration, and the patients were all under the age of 40. In two the larynx was also involved, in four the trachea, and in four there was bronchiectasis. Stridor is generally present, but often is independent of the bronchial lesion. There are generally other signs of syphilis present, so that an accurate diagnosis can be made in the majority of cases.

CASE 16.—The patient was a man, aged 38 years; he was admitted with extreme laryngeal stridor and fixed cords due to laryngeal paralysis requiring tracheotomy.

Post mortem, the left lower lobe was collapsed. There was syphilitic stenosis of the right bronchus, with scars on the trachea; the right lung was fibroid, with a dense gummatous fibrous mass involving the root of the right lung and the vagus. In spite of the vagus being involved there was no destructive disease of the lung. Sir W. Gull at one time suggested that the destructive lung disease associated with aneurysm was due to implication of the vagus (Fig. 13).

FIG. 13.

A trachea, with part of the right lung, showing syphilitic stenosis of the right bronchus, with scars on the trachea, a fibroid right lung, with dense gummatous fibrosis involving the root of the lung and the vagus.

FOREIGN BODIES.

The result of the introduction of a foreign body into a bronchus depends upon whether the bronchus is partially or completely occluded, on the vigour of respiration, and on whether the body is an organic one which will readily putrefy.

Our knowledge of the changes which result largely depend on the experiments of Lichtheim in 1878, who introduced laminaria tents into the bronchi of rabbits, and also in others removed portions of the third and fourth left ribs, ligatured the bronchus, and studied the results. He showed that when the plug completely occluded the bronchus the lung quickly collapsed and became airless. There was at once an intense dyspnœa which gradually quieted down. In many cases the animals died within 24 with pneumothorax of the opposite side from rupture of an enormously over-distended lung; in others the over-distension of the sound lung had stretched the capillaries and made them useless, equally producing a fatal result. Pneumothorax does not occur from this cause in human beings. The affected lung beyond the obstruction was of a dull brown-red colour, with the consistency of muscle. With early death the bronchi were empty, but became filled with a thick white mucoid secretion whenever the animal did not die too soon. When he ligatured the bronchus alone the same result was produced. He found that when the animal was made to breathe oxygen absorption was much quicker, in some

cases being under an hour; CO_2 absorption was less rapid but much more so than when it breathed air. When the pulmonary artery was also ligatured absorption was much delayed, showing that the gases were absorbed by the blood circulating in the lung.

When the chest was merely opened and the lung exposed to the air atelectasis took place quickly, but did not if the pulmonary artery was ligatured. This opening of the chest vitiates many of his results, as it prevented any vigorous respiratory movements from taking place. This was well shown by the fact that when the bronchus was ligatured the opposite lung did not become over-distended to the extent it did when the bronchus was blocked by a foreign body. When the hilum of the lung, including the pulmonary artery, was ligatured there was generally no infarct because there had been no suction of the blood owing to the absence of the opening up of the alveoli with inspiration. This affords the explanation of the absence of infarcts in cases of growth at the root of the lung and of aneurysm in which the pulmonary artery had been occluded by pressure. When the animal survived some weeks the lung was fibroid and converted into a sac of dilated tubes, presenting an appearance similar to that of a calculous pyelonephritic kidney.

Partial obstruction of the bronchi has not been thoroughly studied experimentally, and we have still much to learn; the presence of expectoration in amount shows that this is the more usual condition which results from the presence of a foreign body in a bronchus, and I have little doubt that in some cases the lung at first becomes over-distended, and is not always airless and collapsed.

Schuller has shown that it is possible to introduce clean food into the bronchi of rabbits, and if it can disintegrate it will disappear with no change in the lung beyond that of catarrh; when it cannot, fibroid changes with bronchiectasis result. When dirt, however, was mixed with the food gangrene or septic pneumonia resulted.

There have been the following cases: (1) head of barley grass in left bronchus 129 days; (2) pork in right bronchus possibly for six months; (3) wooden top of toy in left bronchus; (4) pea in left bronchus; (5) feather after tracheotomy, in right bronchus, but not cause of death; (6) pipe stem in bronchus after fatal fall down ladder (not cause of death); (7) newspaper in trachea, introduced intentionally; and (8) sponges in trachea, introduced intentionally.

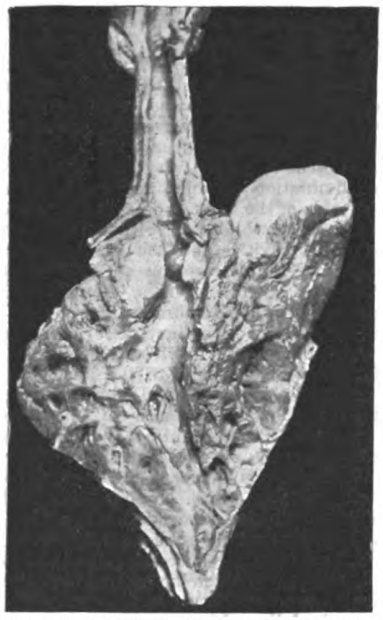
The following case presents many very remarkable features. The boy swallowed a head of barley grass during a paroxysm of coughing and this passed into his left bronchus, where it remained 129 days. He developed within two days after the entrance of the body an acute pneumonia which became gangrenous, and he had an extremely prolonged dangerous illness. Acid-fast bacilli were found on one occasion in the sputum and were assumed to be tubercle bacilli, but he made an excellent recovery as soon as he expectorated the piece of grass. He never reacted specifically to tuberculin. He has maintained perfect health for the five years since and is now strong and well.

It is very rare for anyone to make such an excellent recovery after such extensive mischief in the lung, and it is suggested that the acid-fast bacilli came from the grass as these grasses are said to contain them.

CASE 17. *Ear of barley grass in the left bronchus for 129 days; gangrene of the lung; complete recovery.*—A boy, aged 12 years, while recovering from an attack of whooping-cough, was playing with a head of grass in his mouth, when he was seized with an attack of coughing and the piece of grass disappeared. He tried in vain to make himself sick. On the next day the temperature was 102·8° F., and on July 25th (the following day) Dr. J. E. G. Calverley of Folkestone, under whose care he was, found that the temperature was 105·2°, with a pulse of 100. There was pain in the epigastrium. The entry of air at the left apex in front was deficient. On the 28th there was diminished entry over the same area with diminished movement, but a hyperresonant note. There was tracheal wheezing, conducted over the whole chest as rhonchi. The temperature, respiration, and pulse remained high, and on the 30th the boy had consolidation at the left apex down to the third rib with bronchial breathing and pectoriloquy. The larynx was found to be normal. On August 1st there was profuse epistaxis with a tympanitic note at the left apex in front and down to the level of the fourth rib in the axilla. The entry of air remained deficient at the left apex. He became anæmic from recurrent epistaxis. He then passed under the care of Dr. R. B. Wrightson at Aldeburgh. The temperature gradually dropped to 99°, and the boy was able to get about. The sputum at first was frothy, but later became abundant and muco-purulent, and was said to contain tubercle bacilli. In the middle of September his temperature ran up to 104° and he developed signs of consolidation at the left base. In the upper lobe there was dulness at the apex with signs of a cavity in front in the second and third spaces. There was a marked oscillation of the temperature with very foul breath indicative of gangrene. He was extremely ill for a long time with a very feeble pulse. He took creasote regularly and was well nursed in the open air, so that gradually he recovered his health. No tubercle bacilli could be again detected, and at the end of October he had gained a stone in weight. The sputum was reduced to half an ounce in amount daily and was no longer foul. On Nov. 30th, 129 days after swallowing the grass, he had a fit of coughing and brought up a head of timothy grass 1¼ inches long from the left bronchus. The long awns had broken off from decomposition, and so it was able to pass out again backwards, which had been quite impossible so long as they were intact. There was a gradual retrocession of the signs, but there remained at the apex a deficient resonance, with indeterminate breathing and increased voice sounds; a few moist sounds persisted at the lower part of the lung for some time. In December the opsonic index for tubercle was found to be 0·6 and 0·65 on two occasions. An attempt was made to see whether any acid-fast bacilli could be cultivated from the piece of grass he brought up, but none could be found, although many other organisms were present.

CASE 18. *Pea wedged in lower branch of right bronchus; marked bronchiectasis of corresponding tubes only.*—The patient was a boy, aged three years, admitted with cough and vomiting. He died with empyema and cerebral abscesses a month later. (Fig. 14.)

FIG. 14.



The trachea and right lung showing a pea wedged in the lower bronchus on the right side. The upper lobe of the lung is healthy, but the rest of the lung is densely fibroid and riddled with intercommunicating cavities the result of the obstruction.

CASE 19. *Piece of pork in right bronchus; bronchiectasis; septic pneumonia.*—In 1888 a man, aged 60 years, was admitted. For six months there had been wasting, and for two weeks foul breath. For two days there had been deficient movement of the lung on the right side, pleural rub in the axilla and base, deficient air-entry, râles, with amphoric breathing over the middle lobe.

At the inspection the right lung was fibroid with general bronchiectasis of the main bronchi. Low down was found a

piece of pork ½ × ⅜ inch. There were cavities in the lower lobe. There was acute pneumonia at the lower part of the upper lobe with œdema of the left lung. Had the pork been there for six months?

CASE 20. *Piece of wood in left bronchus; bronchiectasis of both lungs.*—In 1905 a female child, aged 16 months, was admitted. She was well until five weeks before admittance, when she had a cough and dyspnœa. The right lung was resonant on the anterior part in front, but impaired behind. There were crackling râles, bronchial breathing, and pectoriloquy behind.

At the inspection there was advanced fibrosis with bronchiectasis of the right lower, the right middle, and the left lower portions, with a mass of dilated tubes in the midst of the parts of the lung which were fibroid. The *two left upper lobes* were distended; there was recent bronchopneumonia. In the left bronchus just beyond the point of bifurcation there was a smooth piece of wood broken off a toy. It was doubted at the necropsy whether the piece of wood had caused the bronchiectasis, because it was found in the left bronchus and the bronchiectasis was also on the right side, but probably at an earlier stage it was in the right bronchus, and had produced changes on that side and been displaced to the left later.

Although many cases of foreign bodies in the bronchi have been recorded, in but very few has an accurate note been made of the physical signs in the lung in an early stage of the illness. The body generally passes into the right bronchus because it is more vertical and is also slightly larger. The changes are unilateral, serious, and progressive. The following are the most important evidences suggestive of a foreign body in a bronchus, and in any such case a bronchoscope should be passed in order that the condition of the tubes may be determined, and a positive opinion formed. 1. A most important factor in diagnosis, and one which until we had X rays was absolutely essential, is the history of swallowing something immediately before the onset of an acute attack of severe dyspnœa and cough. 2. Not infrequently a whistling or wheezing sound which the patient can localise to one side, varying in quality if the object is not fixed in the bronchus. 3. Great distress, with not infrequently a constricting pain behind the sternum, made worse by movement. 4. Dyspnœa, with varying exacerbations, often intense and made worse by cough, but it may be elicited only by exertion. After a time there may be no distress. 5. Absent or, rarely, very noisy breath sounds with some slight diminution of voice and tactile vocal fremitus limited to one side of the chest. 6. At first resonance on the affected side, soon consolidation with dulness, and, after a time, the signs of cavities and the simulation of phthisis; query occasionally hyper-resonance. The physical signs sometimes vary from time to time. 7. With X rays, the defective movement of the diaphragm and of the thorax, the alteration in the density of the lung, and not infrequently the outline of the foreign body itself, may be clearly made out. 8. Delay in the commencement of inspiration as compared with that on the other side. 9. Defective movement with consequent diminution in the size of the affected side. 10. Violent paroxysmal persistent cough, which is apparently most marked when the object is at the bifurcation, as the sensibility of the mucous membrane is greatest here, as can be noticed when passing a bronchoscope. 11. Early pyrexia, which later becomes hectic, associated with chills. 12. After a short time an expectoration more or less profuse, purulent, often bloody, and later often fœtid. 13. In some there are nausea and vomiting which may be very troublesome. 14. Pneumonia often develops in 48 hours; this may be septic and may be followed by gangrene.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—An Extraordinary Comitia was held on Dec. 1st, Sir Thomas Barlow, Bart., K.C.V.O., the President, being in the chair. The President announced that Sir James Sawyer had presented to the College a reproduction of the arms of Harvey. In order to procure the needful information a prolonged research had been necessary, and the thanks of the College were heartily returned to Sir James Sawyer for the gift. A communication was received from the secretary of the Royal College of Surgeons of England, dated Nov. 4th, 1910. The remainder of the proceedings were declared by the President to be secreta Collegii.

THE THEORY AND PRACTICE OF THE TREATMENT OF SYPHILIS WITH EHRLICH'S NEW SPECIFIC "606."[1]

BY JAMES McINTOSH,
GROCERS' RESEARCH SCHOLAR;
AND
PAUL FILDES.

THE demonstration by Hata of the lethal effects of "606" on spirochætes in the case of certain experimental spirochætoses led one of us (J. McI.)[2] to experiment later with it on the Spirochæta obermeieri of relapsing fever. The signal success of these experiments without injury to the animals induced us to follow the example of several eminent continental syphilologists and apply the remedy to syphilis. For this purpose, by the great generosity of Geheimrat Ehrlich, Dr. Bulloch was able to obtain a further supply of "606." We are therefore much indebted to Dr. W. Bulloch for entrusting to us its practical application.

The descriptions of the results of Ehrlich's new arsenical preparation dioxydiamidoarsenobenzol ("606") as a specific cure for syphilis and other diseases due to spirochætæ have been couched in language of admiration, which is unusual in medical literature. Alt, A. Neisser, Schreiber and Hoppe, Iversen, Pick, Duhot, Finger, Wechselmann, Michaelis, and others have all written in praise of this substance as a cure for primary, secondary, tertiary, and congenital syphilis. A. Neisser asserted that "606" was far superior to mercury or any other arsenical compound, while Uhlenhuth has discarded his efficacious mercuric atoxyl in its favour. Several of the above authors have recorded cases in which prolonged mercurial treatment had been followed without success, only to heal rapidly under "606." Such cases can be observed by anyone who has had the opportunity of using this substance. Its remarkable effects are obvious, but, nevertheless, we are of opinion that some recent authors have unduly exaggerated the speed of the natural processes of repair. "606" has, no doubt, a very definite effect upon the tissues apart from syphilis, but it cannot achieve the impossible. Some 12,000 cases have up to now been treated, with 12 deaths, a number of accidents which, occurring as they did in the experimental stage of the drug, may readily be reduced in the future. These cases, or at any rate the great proportion of them, are claimed to have been cured, that is, cured in the strict sense of the word.

In order to guard against any repetition of such disasters as followed the introduction of such potent remedies as tuberculin and atoxyl, Ehrlich determined, even in the face of criticism, to give the preparation only to individuals working in recognised laboratories, where his directions could be cautiously carried out. Thus, in the space of a few months, by means of a lavish supply of material, the first epoch, as Ehrlich himself says, has been successfully passed. The results and method of application are for the most part known. There remains the question of *permanency* only.

The Principles Underlying Chemotherapeutics and "606."

Dioxydiamidoarsenobenzol is a substitution product of atoxyl, the great feature of this new preparation of arsenic lying in the fact that the quantity required as a therapeutic dose is only a small fraction of that which can be given without toxic results following. This preparation, like several of the other substitution products of atoxyl, is the outcome of elaborate researches on the part of Professor Ehrlich and his co-worker Dr. Bertheim. The preparation of such products became comparatively simple after they had shown that atoxyl was sodium paramidophenylarsenic acid, and not sodium metaarsenious acid anilid, or, in other words, that the amido radicle was not bound up with the arsenic directly. In this way, mainly by substitution and reduction, most of the new compounds, such as acetylatoxyl, paramidophenylarsenoxyd, arsenophenylglycin, &c., have been obtained. The following graphic formulæ give the steps, according to Ehrlich, by which "606" may be obtained

[1] From the Bacteriological Laboratory, London Hospital.
[2] THE LANCET, Sept. 3rd, 1910, p. 713.

from atoxyl. Atoxyl, as stated above, is the sodium salt of para-amidophenylarsenic acid, of which a formula is shown in Fig. 1:—

FIG. 1.

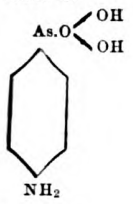


FIG. 2.

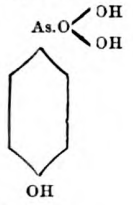


FIG. 3.

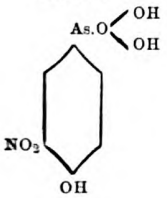


FIG. 4.

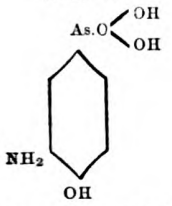


FIG. 5.

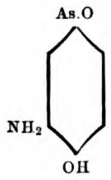


FIG. 6.

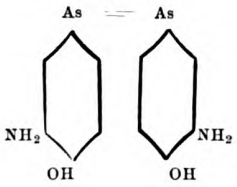
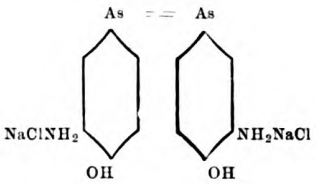


FIG. 7.



The amido radicle in Fig. 1 is replaced by a hydroxyl radicle by treatment with nitrous acid, which gives us para-oxyphenylarsenic acid (Fig. 2). By treating this new compound 2 with nitric acid, the nitro radicle is introduced into the meta position (Fig. 3). Reduction of compound 3 produces metaamidoparaoxyphenylarsenic acid (Fig. 4). Further reductions give us Fig. 5 and then Fig. 6—dioxydiamidoarsenobenzol, or "606." This compound being quite insoluble, a hydrochloride was prepared which is the yellow salt supplied by Professor Ehrlich. This on neutralisation with sodium hydrate gives us the sodium salt (Fig. 7). For commercial purposes "606" is prepared in a much simpler manner from arsenobenzol by the substitution of amido and hydroxyl radicles into the nucleus. It would appear that the activity of these substances depends upon the exact relationship of one radicle to another. Ehrlich considers that when there are two or more substitution molecules in the benzene ring one of which is capable (OH, or NH_2) of forming further combinations, the third radicle must be in the ortho position to the radicle capable of uniting with other compounds. In "606" the NH_2 radicle is in the ortho position to the OH radicle.

In the above compounds the amido radicle is perhaps of the greatest importance, for, as already stated, it was only after the discovery that in atoxyl the amido group was not bound up with the arsenic that these new and more efficient remedies were discovered. The fact that the arsenic is trivalent in "606" instead of being pentavalent as in the case of atoxyl is also believed to be an important factor in the efficacy of the remedy. Whether the amido radicle acts as the anchoring agent or as an auxiliary to the toxic influence of arsenic on the parasites is not quite clear, but it seems that the transposition of the amido radicle into the third position of the benzene nucleus has brought about a marked diminution in the organotropic properties of the medicament, without reducing in any way its parasitotropic qualities. In other words, these workers aimed at obtaining a remedy which approached as nearly as possible the most perfect therapy known—namely, serum therapy.

Chemotherapy has as yet been directed principally against micro-organisms of a protozoal origin, which the human body does not seem capable of destroying unaided. Recent researches have shown that Ehrlich's "*Therapia sterilisans magna*" is the most efficient method of dealing with such conditions. The introduction of this method of treatment was necessitated by his discovery that many organisms, chiefly of protozoal origin, had the power of becoming immune or resistant to injurious substances met with in the animal body. This fact explains the recurrence of trypanosomes and spirochætes in the blood of men and animals after apparent cures by a medicament. Relapses in infectious diseases can now be more intelligently explained by means of these facts.

The chronicity of protozoal and spirochæte infections is without doubt due to the same cause, as the parasites are able to protect themselves against each fresh output of antibody by the animal organism, till at last a condition of equilibrium is established between the two. In this state the chronic manifestations of the disease make their appearance. Nature for some reason does not seem able to upset this equilibrium until outside assistance has been given. In chemotherapy we have a means by which assistance can be given to the natural protective functions.

The manner in which a chemical compound such as dioxydiamidoarsenobenzol effects a destruction of the parasites in the organism is not a simple process. We know from the researches of Koch that the action is not of an antiseptic nature, as the ordinary antiseptics are as injurious to the host's tissues as to the parasites. A chemotherapeutic remedy must, therefore, possess a selective affinity for the parasite's protoplasm, in contra-distinction to that of the tissue cells. In order to explain this selective action Ehrlich has modified his side-chain theory of immunity to make it applicable to the study of chemotherapeutics. He terms the receptors in this case "chemoreceptors," the presence of such receptors in the protoplasm of the parasite being necessary before the remedy can fix itself thereto. When once the chemoreceptors of the parasite have been filled it is either so injured that it dies immediately or becomes an easy prey to the normal protective mechanism of the body. This hypothesis, then, of Ehrlich is really founded on the affinity of certain dye stuffs for certain tissues of the body. It is unlikely, however, that many chemotherapeutic remedies are sufficiently powerful to cause by themselves in every instance an immediate and complete sterilisation of the infected animal. Probably they destroy the majority of the parasites, and these destroyed parasites, being now in the condition of a soluble antigen, are the means by which a great increase of antibody is produced. The increased quantity of immune body may be sufficient to kill off any remaining parasites either by direct lysis or through phagocytosis. This probably occurs in the case of "606," as experiments on animals have shown that an elaboration of antibodies follows rapidly on the introduction of "606" into the infected organism, no matter at what stage of the disease the injection is made. In other cases the remedy has no direct lethal effect on the parasites, but nevertheless it injures them in such a way that certain of their vital functions are inhibited, as, for instance, reproduction, so that in a short time the parasites die out. It is also likely that some of these compounds so change the physico-chemical condition of the parasites' surroundings that the host's tissues and fluids are no longer suitable media for their continued existence.

Chemotherapeutic substances are usually grouped according to their manner of acting on the parasites as follows:—
1. No action on certain parasites either *in vivo* or *in vitro*. In such cases either suitable chemoreceptors are absent from the protoplasm of the parasite or the receptors of the tissue cells of the host's organs have a greater affinity for the remedy than have the micro-organisms. In the latter condition the organotropic properties of the medicament are in excess of its parasitotropic qualities. 2. No action *in vitro;* marked action *in vivo*. A result which may be brought about in one of three ways: (*a*) by the remedy undergoing some change, in the body of the animals, by which it is converted into a parasiticidal substance; (*b*) by causing an

inhibition of some vital function of the parasite such as reproduction; or (*c*) by stimulating the natural mechanism by which the host rids itself of micro-organisms in conjunction with either of the two previous effects. 3. Action *in vivo* and action *in vitro*.

As previously pointed out, the difficulty of treating protozoal infections is due to the power which the parasites possess of causing relapses, these relapses or recurrences being due to the facility with which these parasites become immune or resistant to various toxic bodies, whether of an inorganic or organic origin. Ehrlich attributes the resistance of these "fast" strains to a shedding of their chemoreceptors or to a diminution or complete loss of all avidity on the part of these receptors. Whatever this acquired resistance may be due to, the remarkable fact has been demonstrated that this property is persistent in the strain for generations afterwards. Thus we are able to realise the intention of Ehrlich's *therapia sterilisans magna*, since by destroying the parasites at one blow, so to speak, the possibility of a resistant strain springing into existence is prevented. In many of the cases where a *therapia sterilisans magna* is employed an artificial crisis is produced. This crisis apparently resembles in every way that which occurs naturally at a later period of the infection.

Precautions to be Followed Before the Exhibition of "606."

In order to diminish the occurrence of any injurious effects Ehrlich advises that before an injection of "606" be given a careful examination of the patient be made. Special attention should be paid to the condition of such important organs as the heart, liver, and kidneys. If changes are found which are likely to interfere considerably with the functional activity of these organs it is advisable not to give "606." In the same way gross alterations in the nervous system are contra-indications. If, however, these lesions are most likely of syphilitic origin the danger accruing from the use of "606" is greatly lessened, though the more recent observations have shown that the use of "606" in those cases where the nervous system has been considerably involved even by the syphilitic virus is fraught with considerable danger to the patient.

Ehrlich also considers that it is necessary to ascertain previous to the injection whether the patient has an increased susceptibility to arsenic or not. In order to ascertain whether this condition of "allergie" exists, a test similar in detail to von Pirquet's tuberculin reaction is made except that a solution of arsenic is used instead of tuberculin. If the patient has any hypersusceptibility to arsenic an inflammatory reaction is said to occur at the site of the puncture. Recent results have indicated, however, that such a precaution is wholly unnecessary.

Dosage.

In the earlier cases Ehrlich advised a dose of 0·3 gramme; this quantity, however, was found to be insufficient. The amount usually given now for an average adult is 0·6 gramme; more may be given without ill effects, but at present larger single doses appear to be unnecessary.

Technique of Injection.

In our earlier cases the remedy was given by intramuscular injection into the buttocks according to Alt's formula. More recently we have also used a neutral suspension of the remedy subcutaneously, as advised by Michaelis and Wechselmann. We have had no experience of intravenous injections and think there is no necessity for the employment of such means, though Schreiber and others have described improved effects. The least painful of these methods is, of course, the intravenous injection. The pain caused by the neutral suspension is slight in comparison with that following the injection of the remedy as advised by Alt, but patients of apparently equal fortitude appear to experience very varying discomfort.

The site of inoculation is also worthy of consideration; our observations tend to show that subcutaneous injections in the scapular region are rather less painful and inconvenient than intramuscular injections in the gluteal region. But the fact that in some cases there is apt to be a more severe local reaction after subcutaneous injections, or even the formation of a sterile abscess, rather tends to counterbalance the advantages of this method. Local irritation, however, appears to be considerably diminished if care is taken to prevent any of the injection remaining in the puncture or its neighbourhood.

Alt's method of giving dioxydiamidoarsenobenzol consists of injecting a solution of "606" in caustic soda. The preparation given out by Professor Ehrlich in sealed and exhausted glass bulbs is a hydrochloride of dioxydiamidoarsenobenzol, and this acid salt must be neutralised before use. On the addition of sodium hydrate a precipitate falls which consists of the sodium salt of this hydrochloride of "606." This precipitate is soluble only in excess of sodium hydrate. The pain which follows an injection of this alkaline solution is to some extent caused by the excess of alkali in it. Alt advises that the required quantity of the remedy should be placed in a sterile test-tube and dissolved in 0·5 to 1·0 c.c. of the purest methyl alcohol (*pro analysi*). To this solution 10 c.c. of sterile saline solution are added, and then the whole is neutralised with a normal solution of sodium hydrate; a few more drops of sodium hydrate are added till the precipitate which has been formed is all dissolved. 20 per cent. acetic acid is now slowly added to remove excessive alkalinity until the solution is slightly opaque, and after it has been made up to 20 c.c. it is ready for injection, on the addition of some anæsthetic such as eucaine. Owing to the readiness with which the compound decomposes it is essential that it be used immediately or shortly after it has been prepared. We, however, find it better to dissolve the required amount of "606" in much less liquid than is advised by Alt. If a little care be exercised in making up the remedy it will be found to go completely into solution in as small a volume of fluid as 6 or 10 c.c. By this means the whole amount of "606" can be given in one injection, thereby saving the patient a lot of unnecessary pain. The higher concentration of salts in the solution does not cause an increase of pain. The injection ought to be made high up in the gluteal region, in a spot situated about the junction of the upper and middle third of a line drawn from the anterior superior iliac spine backwards to the top of the gluteal fissure.

The neutral suspension of Michaelis must also be made up just previous to use. The "606" is dissolved in 0·5 or 1 c.c. of methyl alcohol as before, and then about 10 c.c. of sterile saline are added. This acid solution is made neutral to litmus or phenolphthalein by the addition of a solution of normal sodium hydrate. If the neutral point is exceeded a small amount of acetic acid may be added. The dioxydiamidoarsenobenzol is present as a bulky yellow precipitate. The mixture is then centrifuged for a short time, and the clear supernatant fluid poured off. The precipitate is now emulsified in 100 c.c. of saline and injected subcutaneously or intramuscularly. In the above manipulations the strictest asepsis must be observed as the preparation cannot be sterilised.

If it is wished to give an intravenous injection the remedy is made up according to Alt's method, but the volume of liquid should be made up to 200 c.c., so that a clear solution is obtained which is also much less alkaline.

All our injections have been made by means of a "record" syringe with an ordinary steel needle, which, however, should be heavily plated. The neutral suspension necessitates use of a needle with a wide bore.

The patients were all kept in bed for a few days after the injection in case of any complication arising and for better observation. Their sera were examined for the Wassermann reaction before the injection was given, and at intervals afterwards; where possible a search was also made for spirochætes before and after the injection.

In the following short abstract we have thought it necessary to present *all* the cases of syphilis treated by us, and we have been careful not to over-estimate the beneficial influence of the drug. With two exceptions, these patients have been admitted into the London Hospital by Dr. J. H. Sequeira, and have been continuously observed by him both while in his beds and afterwards in his dermatological clinic. The cases, therefore, have been controlled by a very wide clinical experience.

CASE 1.—A female, aged 23 years, had a large chancre in the middle of the upper lip in process of healing with ulceration of its inner aspect. There were a general desquamating papular rash, an ulcerated throat, and enlargement of glands. The sore had been present for about four months and the rash for one month. On July 19th, 1910, the patient was inoculated in both glutæi with 0·3 gramme of "606" in solution. Three days later the chancre had healed, the recent spots had disappeared, while the older ones were fainter. After six days all spots had gone, leaving a pigmentation only. On the eighth day no glands were palpable, and on the tenth slight pigmentation of the rash only was observed. After three months the patient was in perfect health and had increased in weight 8 lb. No general reaction was

observed in this case. The local pain did not appear to us to be severe. On Oct. 20th the Wassermann reaction became slightly positive. On Nov. 3rd the patient returned with slight malaise, some four or five spots, two mucous patches, and slight sore throat. No spirochætes were found in the lesions. Wassermann reaction positive. On Nov. 15th she was given 0·6 gramme of "606" in solution intragluteally, which produced a rapid disappearance of the symptoms.

CASE 2.—A male, aged 30 years, had a hard chancre 1½ inches long on the lower lip. The right submental and cervical glands were enlarged, but there was no other sign of syphilis. The patient was said to have been bitten on the lip in a fight. The sore had been present for three weeks. On August 16th, 1910, he was inoculated in both glutæi with 0·3 gramme of "606" in solution, and in two days the chancre was softer and the glands were smaller. Six days after the injection the glands were still enlarged, but the chancre was healing and much smaller. On the ninth day the unhealed area was three-quarters of an inch long. In five weeks the patient returned with the chancre no smaller and a very marked macular rash on the forearms. He was, therefore, again inoculated on Sept. 22nd with 0·6 gramme of "606." The chancre rapidly healed, leaving a slight induration; the rash faded. Two and a half months after the first inoculation he showed no signs of the disease. After the first inoculation the pain was very severe in both glutæi and in the knees and the calves, and it lasted for two days. There was, however, no general reaction; the second inoculation was comparatively painless. In this case the temperature rose to 99·2° F.

CASE 3.—The patient, aged 29 years, a male, was melancholic. He had a bad septic throat and suffered from earache. He had also a macular rash which was fading from the trunk and was marked on the buttocks. He had had a sore on the penis in October, 1909, without any rash. This latter did not appear until June, 1910, at which time also the sore throat and earache started. On August 13th his Wassermann reaction was completely positive, but on the 26th it was only partially so. At this latter date he was injected with 0·4 gramme of "606" in solution into both buttocks. On the next day the earache had gone. After three days his throat was quite clean and injected only, while after five days there was no longer any rash. However, after seven weeks, the throat was no better and the earache started on the other side. At the same time his Wassermann reaction again became completely positive and further treatment is intended. The pain at the time of inoculation was moderate only. There was no general disturbance.

CASE 4.—The patient, a female aged 19 years, had a small chancre in the middle of the upper lip and enlargement of glands. The chancre had been present for 10 weeks. On Sept. 9th, 1910, she was inoculated with 0·4 gramme of "606" in solution into both glutæi. In seven days the chancre was almost healed, and in 19 days it was completely healed. She has not been observed again. The pain was moderate and lasted for 24 hours. The highest temperature was 99·2° F., and the quickest pulse-rate 95.

CASE 5.—A male, aged 34 years. This man had a large suppurating sore on the left cheek with very marked general rash and glandular enlargement. He had been bitten on the cheek. The sore had been present for five weeks and the rash for 17 days. On Sept. 22nd, 1910, he was inoculated with 0·6 gramme of "606" in solution into both glutæi. In seven days the rash had nearly gone and there was very little discharge from the sore. After two weeks the sore was quite healed; the former rash was marked by a pigmentation only and the glands were still enlarged. He had gained 8 lb. in weight. After five weeks there were no signs of the disease. Following inoculation the pain in the small of the back was very severe for five days. For three days the temperature varied between 97° and 100° F., and during the same time the pulse ranged from 90 to 96. There was no other reaction.

CASE 6.—A female, aged 26 years, had a general macular rash. Her face was very badly affected and was desquamating. There was general enlargement of the glands. This rash had been present for six weeks. She was inoculated in the glutæi on Sept. 29th, 1910, with 0·5 gramme of "606" in solution. On the day after there was a marked Herxheimer reaction followed by a rapid diminution of the redness. After seven days there was little but pigmentation. On the fourteenth day there was still a slight mottling and the glands were enlarged. Five weeks after the inoculation the patient was quite well. The pain did not appear to be severe and there was no general reaction.

CASE 7.—A female, aged 26 years, with marked general papular and macular eruption. The throat was sore and the glands were enlarged. The rash had been present for about 10 days. She was inoculated on Sept. 29th, 1910, in both glutæi with 0·5 gramme of "606" in solution. In one day the former very marked rash on the hands and face was only visible on close inspection. The rash faded until on the seventh day there was little left; the sore-throat also had gone. After four weeks there was still a slight pigmentation in places. This patient did not complain of much pain and there was no general reaction.

CASE 8.—The patient was a male aged 26 years. He had a small penile chancre with no secondary symptoms. The chancre had been noticed for about three weeks. He was inoculated on Oct. 6th, 1910, in both scapular regions with 0·6 gramme of "606" in suspension. In one day the chancre was flatter and cleaner. On the fourth day it was clearly healing and on the fifteenth day had completely healed. No secondary symptoms have appeared. The local pain was mild. On the night of the inoculation the patient had a profuse sweat with a temperature of 101·4° F., a pulse rate of 100, and a respiration rate of 24. The urine was normal. After the first day there was no further disturbance.

CASE 9.—The patient, a male, had a widespread indurated ulceration of the whole lower lip, the chin, the left cheek, and half of the upper lip. This condition had lasted for nine months. For the past five years similar conditions had arisen on various parts of the body and usually had taken four months to heal with iodide of potassium. There was an indefinite history of syphilis and the Wassermann reaction was negative. The patient was inoculated on Oct. 6th, 1910, with 0·6 gramme of "606" in suspension in both scapular regions. In four days the ulceration was very much cleaner, but the inflammatory area was no smaller. In two weeks the area was much smaller and there was active epithelial proliferation. After three weeks the healing was still progressing and in one month was nearly complete. A considerable redness, however, still remains. Very little pain followed the inoculation. In this case also there was a profuse sweat during the first night with a temperature of 99·4° F. Otherwise there was no general disturbance.

CASE 10.—The patient, a male, aged 40 years, was under the care of Dr. Arthur Whitfield at King's College Hospital. He had a large scaling and infiltrating patch over the left forehead and including the left eyelid and a great part of the nose. There was a tendency to ulceration at one place only. The man had been infected 23 years before and had had a gummatous relapse 10 years ago. Dr. Whitfield first saw him in May, 1909, when he had a widespread condition of the left upper arm which had been diagnosed as psoriasis. This cleared up rapidly under mercurial inunctions and later pills. He discontinued treatment with the present result which has dated from the summer of this year. On Oct. 10th, 1910, he was inoculated with 0·6 gramme of "606" in suspension in both scapular regions. In 24 hours the lesion was paler and in four days it was almost flat though heavily pigmented. In ten days a large pustule occurred on the nose with an increase of redness. This healed in about four days. In three weeks the lesion was quite resolved, leaving some brown staining only. He increased 5 pounds in weight in the first week. The pain after inoculation was severe and there was a rise of temperature to 100° F.

CASE 11.—The patient, a male, aged 15 years, had congenital syphilis and a widespread inflammatory and ulcerative condition of the face, nose, and upper lip which had provisionally been diagnosed as lupus. The nose was depressed and obstructed by discharge. Double otitis media with affection of the internal ear was present, as well as otorrhœa. The hearing was very feeble on the right side and was absent on the left. There were interstitial keratitis and choroiditis on both sides. The patient was blind in the left eye, and on the right side there were very high myopia and dimness of vision. The condition had been progressing for four years. On Oct. 10th, 1910, he was inoculated with 0·1 gramme of "606" in suspension in the scapular region, and on the 12th with 0·2 gramme into the buttock. On this day (two days after the first inoculation) he spontaneously remarked that he could see better. On the third day the injection of the left eye and the opacity of the pupil were less. In five days there was very marked diminution in the size of the swollen lip. The inflammatory redness had gone from the face. The nasal discharge had ceased, permitting a cessation of the dressings. On the seventh day the patient could breathe freely through his nose. Ten days after the first inoculation he had a bad "cold," with foul aural discharge and increased redness of the lip. On the 25th he was again inoculated with 0·2 gramme of "606" in the shoulder and since then there has been a slow but persistent improvement in his condition. Both inoculations in the shoulders produced large red indurations but little pain. After the second inoculation the temperature rose to 99·4° F. and the pulse to 100; after the third the temperature was 100°.

CASE 12.—The patient, a male, aged 22 years, was under the care of Dr. J. Sangster Greig at West Ham Union Infirmary. He had a phagedenic chancre on the side of the prepuce 1½ inches long, associated with ulceration of the glans penis. There was a general papular rash, glandular enlargement, and sore-throat. The chancre had been present for two months and the rash one month. On Oct. 10th, 1910, he was inoculated with 0·6 gramme of "606" in solution into both glutæi. A slight Herxheimer reaction followed. In six days the rash was gone, the chancre half healed, and the glands practically normal. In 13 days a small area of the glans only was unhealed. In three weeks he was quite cured, and had increased 10 pounds in weight. The local pain was not severe, and the temperature rose to 99·6° F. only.

CASE 13.—The patient, a male, aged 25 years, had a healed chancre and a fading secondary rash all over, with much desquamation. The rash was marked on the face, neck, bend of elbows, &c. There were general glandular enlargement and gleet. The chancre appeared three or four months before and the rash six or eight weeks. On Oct. 12th, 1910, he was inoculated with 0·6 gramme of "606" in suspension into both shoulders. In three days the rash had nearly gone from the trunk and was fading from the face; in seven days the rash was hardly visible, while in 16 days all signs of disease had disappeared. He had very little pain and a temperature of 99·5° F.

CASE 14.—The patient, aged 28 years, was the mother of Case 15. There were no symptoms of syphilis. The Wassermann reaction was negative. Her children are healthy, the last being born four and a half years ago. There was a history of syphilis, she having had a rash which started two years ago and lasted until the time of conception of Case 15. She was inoculated on Oct. 14th, 1910, with 0·5 gramme of "606" in suspension in both shoulders. There was only slight pain. Just after inoculation she developed a severe "cold," with a temperature of 101·6° F. and malaise. This lasted three days.

CASE 15.—The patient was a male aged 4 weeks. He had pemphigus and a rash all over the body and nasal discharge. He had had six inunctions of mercury with benefit, but other spots were coming out. Dr. Sequeira thought that the child might live. The condition started four days after birth. The baby was not inoculated but was suckled by the mother. Three days after the mother's treatment the rash and pemphigus had nearly gone. In ten days the baby was quite well and is now thriving. No ill-effects were observed in the baby.

CASE 16.—The patient was a male aged 2 weeks. There were severe general bullous pemphigus and diarrhœa. The child had shed nearly all his skin. Dr. Sequeira thought that the baby would die. On Oct. 14th, 1910, he was inoculated with 0·02 gramme of "606" in suspension into the glutæus muscle. In three days the rash and pemphigus had practically gone. In four days there were a few spots only and no diarrhœa. Up to the seventeenth day the baby had been thriving; on this day he was again inoculated with 0·06 gramme of "606" in the shoulder. Local redness and swelling followed the first inoculation and seven days after a very small slough separated from the point of inoculation. There was no general disturbance. The second inoculation also has been followed by no ill-effects.

Disappearance of spirochætes.—The action of "606" on the Spirochæta pallida in the primary lesion is very rapid, as in Cases 2 and 8. No spirochætæ could be found in the primary lesion 24 hours after the remedy had been given, though just previous to the injection they were present in large numbers. The greatest destruction of spirochætes apparently took place 5 to 12 hours after the injection. No doubt those actually in the system are attacked at an earlier period.

Mercury, on the other hand, takes about three weeks to bring about this result. The above fact alone serves to stamp dioxydiamidoarsenobenzol as the greatest anti-syphilitic remedy we possess.

Leucocytosis.—In none of the above cases have we observed any such marked degree of leucocytosis as has been described by different writers.

Effect of "606" on the Wassermann Reaction.

Number of case and stage of disease.	Dose.	Before.	Weeks after—									
			2	3	4	5	6	7	8	9	10	12
Case 1. I. and II.	0·3	C	C	MO	—	—	—	—	O	—	—	O
Case 2. I.	0·3 / 0·6	C	M	O	—	—	O	O	—	—	O	—
Case 3. II.	0·4	CS	—	—	—	—	—	S	—	C	—	—
Case 4. I.	0·4	C	—	S	—	—	—	—	—	—	—	—
Case 5. I. and II.	0·6	C	C	C	—	C	—	—	—	M	—	—
Case 6. II.	0·5	C	C	C	C	C	—	M	—	O	—	—
Case 7. II.	0·5	C	C	—	C	—	—	—	C	—	—	—
Case 8. I.	0·6	C	M	O	O	O	—	—	—	—	—	—
Case 9. III.	0·3	O	O	O	—	O	O	O	—	—	—	—
Case 10. III.	0·6	C	C	C	—	—	C	—	—	—	—	—
Case 11. Congenital.	0·1 / 0·2 / 0·2	C	C	—	C	C	—	C	C	—	—	—
Case 12. I. and II.	0·6	C	M	S	—	—	O	O	—	—	—	—
Case 13. II.	0·6	C	C	—	C	—	C	C	—	—	—	—
Case 14. Latent.	0·5	O	O	—	O	O	—	—	—	—	—	—
Case 16. Congenital.	0·02 / 0·06	—	—	—	—	—	—	—	—	—	—	—

C=Completely positive reaction. M=Medium positive reaction.
S=Slightly positive reaction. O=Negative reaction.

We do not suppose that "606" can directly influence the Wassermann reaction, but by its destruction of the spirochætæ it removes the cause. At any rate, the rapidity with which in some cases the patient's serum loses the power of giving a positive Wassermann reaction is one of the greatest arguments in favour of Ehrlich's new specific. In our own cases, as can be seen in the above table, the earliest period at which the reaction has disappeared after an injection is three weeks (Cases 1, 2, and 8). It will be seen that two of these cases were in the first stage of the disease. The reaction disappears much more slowly in cases of secondary syphilis, and, in fact, has already persisted in some of our cases for seven weeks. These results are not surprising, as in primary syphilis the Wassermann reaction is usually a weak one, though completely positive. There is in these cases little or no excess of reacting substances in the serum. In secondary syphilis, however, there is a much larger quantity of the Wassermann-producing substances in the serum, and it is only logical to expect that they will take a longer time to disappear. We are convinced that the information supplied by the Wassermann test is an essential indicator of the patient's progress. If the reaction fails to become negative after an interval of several weeks, it is to be suspected that the patient is not doing so well as he should, and in all probability will have a relapse, as was the case with patient No. 3.

Effects on Lesions.

In the case of primary lesions, genital or extragenital, the process of repair is very rapid. In contradistinction to the five or six weeks required for the disappearance of a chancre under ordinary treatment, only from 10 to 14 days were required for complete healing. Secondary lesions, as a rule, show an improvement within 24 hours of an injection of "606." In the case of the secondary eruption, however, the pigment appears to persist for a long time; this persistence of the pigment is no doubt only relative, as after an injection of "606" the absorption of the inflammatory lesion is no longer a gradual process as when mercury is used, but an immediate one. In tertiary lesions the effects are much more varied. Some disappear as if under a magic influence; others, again, show little or no alteration for some days after the injection. In congenital syphilis even of the worst types the rashes disappear in two or three days. Lesions of a more chronic nature, such as interstitial keratitis, resolve very much more slowly.

Question of Temperature Response to "606."

The alteration in temperature after an injection of "606" in cases of primary and secondary syphilis is comparable to what occurs in certain acute infections which terminate by crisis. In other words "606," owing to the rapidity with which it sterilises the human organism of spirochætes, produces a cure in these stages by a definite crisis. The patient's temperature rises as a rule one or two degrees (100° or 101° F.) within 12 hours, after which it falls almost as suddenly as it rose. The patient at the same time experiences a profuse sweat. If the temperature is high at the time of inoculation it usually falls to normal about 24 hours later. This temperature response is not observed in the majority of patients suffering from latent or tertiary syphilis. No doubt the flooding of the system with an excess of soluble spirochæte products is the actual cause of these phenomena.

Relapses.

In Cases 2 and 3[1] it will be noticed that relapses occurred, but not relapses in the sense of a clinical recurrence after a clinical cure. Neither of these patients had cleared up after one inoculation, which, it must be observed, was in each instance small. These accidents, to a large extent, must depend upon the *size* and *spacing* of the doses. The question arises as to whether one dose on the average is sufficient to produce complete sterilisation of the body, however large it may be. We take it that "606" is intended to have a lethal influence on spirochætes, but that all the spirochætes in the body are not destroyed by this influence. The residuum, great or small, is overcome by the antibodies to "endotoxins" liberated from those spirochætes destroyed by the "606." Thus if there are few spirochætes in the body, there will be a small output of antibody, perhaps insufficient to finish the cure or at least liable to delay it. Such a state may be present when the Wassermann reaction is negative or feeble. This is held to imply the presence of a small quantity of the virus in the body. It is also known that arsenic circulates in the system for a very short time after injection: it is very rapidly "fixed" by the tissues, especially the kidney. What, then, is to be expected in cases such as Nos. 3 and 9 with feeble and negative Wassermann reactions? The arsenic which is absorbed destroys, indeed, some spirochætes, but most is "fixed" by the tissues and lost. The production of "endotoxin" and subsequent antibody is small. Sterilisation in the one case was incomplete; in the other recovery was at least slow, and will probably also be incomplete. In cases of this sort, therefore, as also in cases of primary syphilis, if not in syphilis of any variety, we think that more than one dose will be found to be more certain in action. Ehrlich recommends an initial large dose given intravenously, or if there is thought to be objection to this, intramuscularly, in solution. This ensures a rapid absorption and a sharp *ictus immunisatorius*, leading to a maximum destruction of spirochætes and production of antibody. Then, since the first injection will be rapidly wasted, on the second or third day, a second dose in suspension should be given to act as a "depôt" over a considerable time. All our recent cases have been treated on this principle. The patient is first given an injection of 0·5 to 0·6 gramme "606" in alkaline solution intramuscularly in the gluteal region, the volume of liquid injected not being more than 10 c.c. Three days later he is given 0·4 gramme "606" neutral suspension intramuscularly in the opposite side.

The employment of "606" will probably assist in the elucidation of several points of interest in the immunity to syphilis. Among these are the changes which occur in the serum components of patients who have been treated with "606." That the Wassermann reaction should rapidly become

[1] Since this paper went to press Case 1 (*q.v.*) also relapsed, after an apparent cure lasting nearly four months.

negative is not to be wondered at in view of the potency of the drug. We provisionally consider this reaction to be due to the presence of abnormal compounds in the blood, such compounds being the direct result of a destructive action by the living syphilitic virus on the tissues. If the virus is destroyed these compounds will no longer be formed, and those already present will be excreted in a few weeks or less according to the quantity originally present. The antibody which is formed by the presence of "endotoxins" is presumably a specific antibody and quite distinct from the Wassermann body, which is thought to be a direct degeneration product. If the latter were an antibody it could not be diminished by specific treatment. This has been demonstrated in experimental trypanosomiasis, where both specific antibody to the trypanosome and the Wassermann body are capable of being separately demonstrated.

Some writers have stated that a negative Wassermann reaction may become positive after inoculation. They assume that the soluble products, "endotoxins" of the spirochætes, are capable of bringing about that tissue degeneration which results in the Wassermann reaction. In the case of a negative reaction such products would be too few to detect, but as a result of inoculation a maximum output of "endotoxin" from the destroyed organisms suffices to produce the necessary tissue degeneration and a positive reaction. In three of our cases in which the reaction was negative or slight before inoculation no increase was observed. Any change has always been in the opposite direction. Many recent writers, moreover, have also failed to observe any such change, and as we are at present of opinion that in acute syphilis the Wassermann reaction is due to the active intervention of living spirochætes we are not surprised that these occurrences are rare.

In the literature there are already on record a few cases where the injection of "606" into the mother of a congenitally syphilitic baby resulted in a rapid and complete cure of that baby through the agency of the mother's milk. Such cases are explicable in two ways: first, that the injection of the mother with a positive Wassermann reaction by destroying a number of spirochætes produces in her a large amount of antibody, and that this antibody secreted in the milk brings about the recovery of the child; and secondly, that there is a direct transference of "606" by the milk. Ehrlich favours the former view, since in the cases published it was stated that no arsenic was found in the milk, or in a quantity insufficient to explain the therapeutic result. If this be the case it is difficult to explain our case No. 14. This woman had a negative reaction but a recent history of syphilis. In these circumstances she could not have produced sufficient antibodies as the result of a destruction of spirochætes. It is therefore possible that the "606," merely by stimulation of the cells which previously had produced syphilitic antibody, caused a sufficient amount of these bodies to appear in the milk. It is, however, also possible that on the application of more refined methods arsenic may be demonstrable in the milk in larger quantities, and may take a more direct part in the cure than has been supposed.

This stimulating property of "606" may account for the great rapidity with which these antibodies are elaborated. The onset appears to be very much sooner than is the case in other immunising processes and cannot be altogether due to the large amount of antigen in the circulation as a result of the inoculation. That "606" has a stimulating effect on many metabolic processes can hardly be doubted. The subjective sensations of the patients are greatly improved, and where weight has been lost it is rapidly regained; for instance, Case 2 gained 7 pounds in 10 days, while Case 12 gained 10 pounds in 18 days. Further, inflammatory conditions subside, and a case of myelogenous leukæmia with 240,000 white cells per c.mm. before inoculation by us, one week afterwards had only 120,000. Such conditions as dropsy, œdema, and jaundice in one moribund non-syphilitic individual disappeared after inoculation, even though the causative malignant disease killed the patient in a few days.

Certain phenomena noticed from time to time while using "606" in syphilitic cases can only be explained on the assumption of endotoxins liberated from the spirochætæ. It has been shown that very young congenitally syphilitic infants are unsuitable for treatment except with very small doses, and the fatal results are explained by the very large quantity of endotoxins which must be produced from the innumerable spirochætes present in such cases. Again, we have observed the Herxheimer reaction in two cases. This reaction appears to be considered to be due to an *insufficient* dosage. It is suggested that the spirochætes are not sufficiently rapidly destroyed, that they have time to react to the noxious influence of "606" with an increased production of poisons. In our cases, however, the dose was not particularly small. We are at present inclined to look upon this phenomenon as being of the nature of an anaphylactic manifestation in an individual particularly sensitive to the syphilitic "endotoxins": a phenomenon comparable to those following the introduction of tuberculin or any other antigen into an already sensitised subject. These reactions have been particularly mentioned by Ehrlich as a cause of dangerous symptoms or death in the case of general paralysis and similar conditions. If in such a case of nervous degeneration a reaction occurs in an essential nerve, such as the vagus, the *exitus lethalis* will probably follow, and such an event, if these cases be operated upon, must be guarded against by the exhibition of *very small* doses.

The importance of "606" as a destroyer of spirochætes cannot be over-estimated, even apart from the beneficial effect upon the patient. In those cases in which spirochætes were demonstrable in very large numbers before inoculation, none were found in less than 24 hours, even after prolonged search. This fact has already been fully established. The importance of the observation lies in the probability that cases of syphilis can be rendered practically non-infective in a day or two. If this be true, Ehrlich will have swept away the scourge of 2000 years and given into the hands of any State, which will avail itself of it, a weapon for the forcible suppression of syphilis.

NEW CHEMICAL LABORATORIES AT UNIVERSITY COLLEGE, LONDON.—On two previous occasions we have called attention to an appeal for £70,000 for the purpose of providing University College, London, with new chemical laboratories. We have now received a letter from Prince Arthur of Connaught, President of the appeal committee, stating that it is a matter of particular urgency that the sum of £25,000 should be raised before Christmas Day in order that the Senate of the University may exercise the option to purchase the Gower-place site. Towards this sum over £10,000 have now been raised. Donations sent to His Royal Highness, addressed to University College, London, will be acknowledged by him.

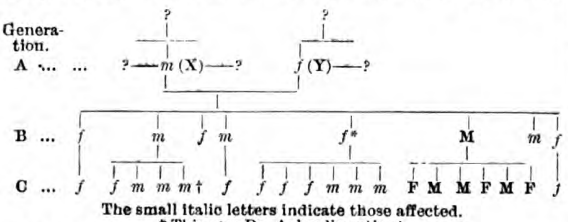
FOOD CONGRESS.—The Deuxième Congrès de l'Alimentation will take place in Liége from Oct. 1st to 4th, 1911. This Congress has been organised in order to continue the work, as far as Belgium is concerned, of the Congress which was held at Paris in 1909 organised by the Société de la Croix Blanche de Genève and the Food and Hygiene Congress which was recently held at Brussels, organised by the Belgian Government. Foreign specialists are invited to take part—viz., physiologists, chemists, bacteriologists, hygienists, jurists, producers, merchants, &c., in order that they may examine the whole question of food and discuss the measures to be taken to reconcile the requirements of hygiene and public health with commercial interests. The labours of the Congress will chiefly relate to the following food products—viz., milk, cheese, meats, poultry, fish, eggs, pickles, fats, bakery products, pastry, confectionery, chocolate, preserved vegetables, fruits, mushrooms, sugars, syrups, glucose, jams, tinned provisions, spices and condiments, waters, lemonades, ice, beers, wines, ciders, alcoholic drinks, vinegars, liqueurs, fruit juices, syrups, &c. The president of the congress is Professor M. A. Jorissen, of the University of Liége, and an official of the Permanent Belgian Commission of Human Alimentation. The vice-presidents are: M. Julien Delaite, M. de Molinari, M. J. Raymond, M. L. Rutten, M. E. Sohier-Beaujean, and M. J. Van Zuylen. The secretary-general is Dr. F. Schoofs, secretary-general of the Permanent Belgian Commission of Human Alimentation. The treasurer is M. E. Halleux, barrister and secretary of the Union of Purveyors. All communications should be addressed to the secretary at Rue des Guillemins, 27, Liége, Belgium. The subscription is fixed at 10 francs. The title of "*Membres donateurs*" will be given to those who subscribe at least 50 francs, and the title of "*Membres protecteurs*" to those who subscribe at least 200 francs. The family of regular members may become *membres associés* at 5 francs per person and will be invited to the fêtes.

A PEDIGREE SHOWING BI-PARENTAL INHERITANCE OF WEBBED TOES.

BY H. P. NEWSHOLME, M.B. OXON., M.R.C.P. LOND., B.SC. LOND.

IT is of rare occurrence to find a family in which the same abnormality has been inherited from both parents. Dr. E. Stainer, in a very interesting paper,[1] has collected from the literature six pedigrees of this nature, among which is included the one shortly to be discussed. These appear to be the only instances recorded.

The family now in question was brought under notice through a patient admitted to St. Thomas's Hospital in June, 1910, under Dr. T. Dyke Acland, who has very kindly allowed me to publish the facts. The patient, a woman aged 45 years, was admitted to hospital on account of visceroptosis, severe Dietl's crises, and glycosuria. It was discovered accidentally, during a routine examination, that the second and third toes of each foot were webbed as far as their terminal phalanges. Further inquiry showed that this deformity occurred through three generations and involved 22 members of a family of 29, as indicated in the accompanying pedigree. Other members of Generation A, as well as



The small italic letters indicate those affected.
* This was Dr. Acland's patient.
† This individual had webbing of the third and fourth fingers of the right hand, but no webbing of the toes.

one or other parent of both X and Y, were probably affected, but no precise information on these points could be obtained. All the marriages occurring in generation B were with normal persons.

Owing to the rarity of such pedigrees, it seems important to mention the sources of information and the evidence of its reliability. 1. Nearly all the facts were given by the patient herself (No. 5, Generation B). The patient was a quiet, inexcitable, sensible woman, not at all inclined to exaggerate or to romance. She showed no sign of hysteria or of a morbid desire for sympathy or attention. She had, moreover, no motive for endowing other members of the family with a deformity of which she herself was oddly ashamed. 2. These facts were corroborated, and others added, by a brother (No. 6, Generation B); also by a sister (No. 3, Generation B), who is attending the out-patient department of St. Thomas's Hospital for diabetes. The brother (No. 6) is quite positive that he and his children are the only members of this branch of the family free from webbing. 3. The presence of webbing was verified in the patient and in one of her children, the only members of the family who could conveniently be examined. 4. The informants mentioned above believe, but cannot be quite certain, that the webbing has nearly always involved the second and third toes of each foot. A notable exception will be seen in a note to the pedigree. 5. The fact that *both* parents (X and Y) had similar webbing has been impressed on the family by a dramatic incident, the memory of which is now evidently a precious family possession. The presence of webbing in both parents was not recognised till the birth of their first child, when each parent claimed its webbed toes as his or her particular contribution. Naturally an unveiling of parental toes followed, and resulted in mutual surprise, mutual satisfaction, and the amusement of younger generations. 6. Both X and Y are said to have had several brothers and sisters with webbed toes, and are believed themselves to have inherited the deformity from their parents. This information was so lacking in precision that I have been unable to include these members in the table. From X and Y onwards, however, the facts are clear and complete.

The only question to be considered here concerns the extent to which this pedigree conforms with Mendelian principles. Mendelism aims at attacking problems of heredity by dissecting the individual's almost innumerable traits into as many pairs of opposed characters as it can. To choose instances at random, it might take pairs such as the following: long hair, short hair; fair hair, dark hair; tallness, shortness, &c.; and by working out the transmission of each pair get finally, more or less completely, the inheritance of the individual. Since physical are far more easily measured than mental characters, Mendelism necessarily limits itself almost entirely to the former. In the case in question, "webbing" and "no webbing" must be the two opposed factors. The character "webbing" is, of course, the one which renders this family peculiar, while the character "no webbing" it shares with the rest of mankind.

Of the two gametes, spermatozoon and ovum, which unite to develop into any of the individuals in this family, both may contain or both may be free from the subtle property which gives rise to webbing, so that the individual into whom they develop is either saturated with or quite free from the conditions which give rise to webbing. But there is another alternative: one gamete may carry the factor "webbing," while the other may not. (The second may conveniently, though not accurately, be described as carrying the factor "no webbing," which is, strictly speaking, not a factor but the absence of a factor.) In such a case the individual resulting from their union will, so far as this character is concerned, be a hybrid or *heterozygote*. The germ-cells which he or she bears will not all be exactly the same in properties. All will be spermatozoa or all will be ova, but they will bear the impress of the gametes from which they are descended in that some will contain the factor "webbing" and others the factor "no webbing." Moreover, those gametes carrying one factor will equal in number those carrying the other factor. The whole structure of Mendelism stands on this one principle, that the germ-cells of a heterozygote can be divided into two equal groups, those in one group containing one factor and those in the other its opposite.

Further, given an individual resulting from the fusion of two gametes, one carrying the factor "webbing," the other the factor "no webbing," he will be webbed or not webbed according as webbing is or is not stronger than, or *dominant* to, absence of webbing. The weaker factor here becomes latent or *recessive*.

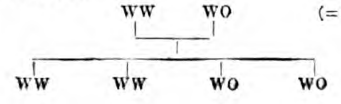
In considering each individual it will be convenient to have signs for the two classes of gametes. Thus that group of gametes which contains the character "webbing" may be represented by W, and the group containing the character "no webbing" by O. A heterozygote, then, will be indicated by WO; and, according as we find on trial "webbing" or "no webbing" to be a dominant factor, so a pure dominant and a pure recessive will be represented by WW and OO, or *vice versâ*.

Now dealing with the family more particularly the following possibilities arise with regard to X and Y:—

1. *Webbing may be a recessive character*, so that it will lie latent unless both individuals are pure recessives, developed from gametes containing only the character "webbing" and themselves bearing gametes containing only the same factor. Since X and Y are known to have been webbed they must on the above hypothesis have been pure recessives. In that case, since neither contains the group of gametes O the children resulting from their intermarriage would necessarily all be pure recessives, and would hence all be webbed. But generation B contains one unwebbed member. Webbing cannot then be recessive. We must therefore conclude that *webbing is a dominant character*.

2. *Both X and Y may be pure dominants.* Then, as neither parent would bear the recessive group of gametes O none of their children could be free from webbing. But, as has been seen, one member of generation B is not webbed. The assumption, therefore, that both parents are pure dominants must be wrong.

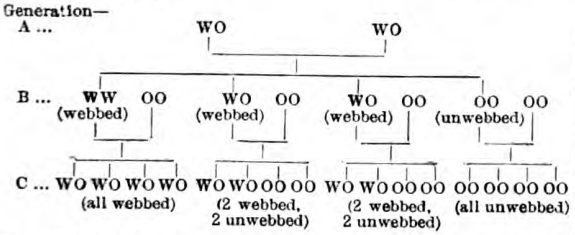
3. *Of X and Y, one may be a pure dominant, while the other is a heterozygote.* The Mendelian chart of their progeny would be as follows:—



[1] The Hereditary Transmission of Defects in Man (Oxford University Press).

Since webbing is dominant all the offspring would be webbed, although only half of them are pure dominants. Since one member of generation B is unwebbed, the hypothesis that of X and Y one is pure dominant and the other a heterozygote must be wrong.

It must be concluded, then, that (*a*) *webbing is dominant, and* (*b*) *both X and Y are heterozygotes*, each derived from gametes of opposite qualities as regards webbing, and each bearing both groups of gametes W and O, and bearing them in equal numbers, each, therefore, being represented by the sign WO. On Mendelian principles the offspring of the marriage of two heterozygotes would be as follows, the children of the first marriage marrying in their turn, but marrying normal individuals, OO:—



For convenience of reference these have been lettered in Generations A, B, C, to facilitate comparison with the pedigree under consideration. The results of comparison may be tabulated as follows:—

	Mendelian result.	Actual pedigree.
Generation B	1 unwebbed in 4	1 unwebbed in 8
Generation C	8 „ „ 16	6 „ „ 19

As they stand, the variance between the two sets of figures is so great as to suggest that the observed facts run counter to the Mendelian theory. But the error inherent in small numbers must always be borne in mind. The accident of one child more or less in each generation would have affected the proportions very materially.

The extent of this error can be estimated by means of Poisson's formula, in which the limits of error per unit are $\pm 2\frac{\sqrt{2mn}}{\mu^3}$, where μ = total number of cases recorded and m = number in one group and n = number in the other group. Here for generation B, $\mu = 8$, $m = 7$, $n = 1$; while for generation C, $\mu = 19$, $m = 13$, $n = 6$. Substitution of these values gives the following results:—

Generation B. Limits of error for unity = approx. $\pm 0{\cdot}33$.
„ „ 8 cases = $\pm 2{\cdot}6$.

Thus, allowing for this possible error of 2·6 in 8, dependent on the small data available, the pedigree might conceivably have shown, instead of 1 unwebbed in 8, any proportion between 3·6 in 8 and 0 in 8. The Mendelian ratio of 1 in 4 (2 in 8) obviously lies within these extremes.

Generation C. Limits of error for unity = approx. $\pm 0{\cdot}33$.
„ „ 19 cases = $\pm 6{\cdot}3$.

Here, where the actual ratio was 6 unwebbed in 19, the extreme limits of variability are from 12·3 in 19 to 0 in 19. The Mendelian value of 8 unwebbed in 16 (9 in 19) lies within these extremes. In both cases, therefore, the Mendelian value is seen to be not incompatible with the actual data obtained.

These considerations show only that the pedigree in question neither supports nor throws doubt on the Mendelian hypothesis. It is like all similar small pedigrees, quite neutral in the argument which it provides. This must necessarily be the weak point in all family pedigrees where the members can be numbered only in tens instead of in hundreds. Obviously deductions must be made very cautiously, if at all, where the possible error in either direction reaches, as in this instance, 30 per cent. of the number of cases observed. For the same reason it is dangerous to conclude, on the grounds that one large fraternity in Generation C is seen to be webbed throughout and another to be quite free from webbing, that therefore the one indicates a pure dominant, the other a pure recessive strain.

This family is interesting also in connexion with a defect in sugar metabolism, which occurred in three members of the family (Nos. 2, 3, and 5, Generation B). The patient herself has mild glycosuria; an elder brother died from diabetes and pulmonary tuberculosis, and one sister is being treated in the out-patient department of St. Thomas's Hospital for diabetes. No further facts bearing on this point could be obtained with regard to other members of the family.

NOTE ON AN OBSCURE CASE OF PERITONITIS.

BY R. H. NORMAN, M.D. LOND.

THE following case seems worth reporting.

A male, aged 33 years, was seen by me on Nov. 12th last. He complained of severe continuous pain in the epigastrium, both hypochondria, and the right iliac region. There was no point of special tenderness. He had vomited several times that day, the vomit being gastric only. The abdomen was distended and moved with respiration. Nothing abnormal could be felt. The temperature was 102° F. The bowels were constipated. On the next day he was in much the same condition, the pain being a little less after some small doses of opium. The temperature at 9 P.M. was 104°. The bowels had been opened by enema, and subsequently two loose, bright yellow motions were passed. The colour of the motions suggested enteric fever, but no other symptom pointed to that diagnosis. He had been ailing a week or ten days, feeling languid and having a poor appetite, but he kept at his business until the morning of the 12th. I took a specimen of his blood and sent it to the Jenner Institute, and a positive Widal reaction was reported. On the 14th the temperature at 10 A.M. was 102°, and at 9.30 P.M. 104°. The abdominal pain was still severe, especially in the epigastrium and the left hypochondrium. On the morning of Nov. 15th I found him much worse, with a running, rapid pulse of 120–130, and temperature 102°. The abdomen was much distended, with little or no movement in respiration, general tenderness, but no rigidity. I suspected perforative peritonitis, but could not satisfy myself that this was so, the liver dulness being normal. He was carefully removed to the North-Eastern Hospital. The grave abdominal condition pointed to the immediate need of a cœliotomy as the only chance of saving him. This was done, but the patient never rallied.

A post-mortem examination was made, and Dr. Frederic H. Thomson has very kindly supplied me with the following notes: "A mass of inflamed tissue was found behind the stomach in which were several broken-down caseous glands. There was a cavity in this mass, and from it one sinus led into the stomach. The ulcer in the stomach was not a recent one. Another sinus led to a caseous mesenteric gland, and two others led into the peritoneum. The openings into the peritoneum were apparently recent. There were a number of caseous mesenteric glands, and acute peritonitis was present. The right lung was bound down by old adhesions. There was no evidence of enteric fever." Fourteen or fifteen years ago tubercular glands were removed from his neck.

Canonbury Park South, N.

UTERINE CERVICAL POLYPUS UNDERGOING MALIGNANT DEGENERATION.[1]

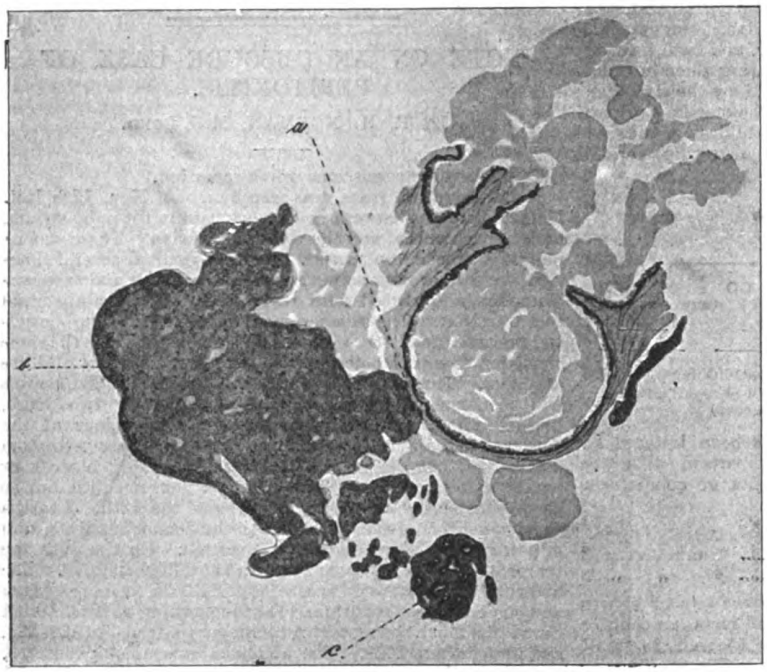
BY H. MACNAUGHTON-JONES, M.D., M.CH., M.A.O. Q.U.I., F.R.C.S. IREL. & EDIN.,
PRESIDENT OF THE OBSTETRICAL AND GYNÆCOLOGICAL SECTION OF THE ROYAL SOCIETY OF MEDICINE.

DURING the last session Mr. J. H. Targett exhibited an adeno-fibromatous polypus of the uterus in which there were undoubted evidences of malignancy. At the time I obtained from Professor Schottlaender microscopical drawings of the sections of a cervical polypus removed when I was at Heidelberg in the late Professor Rosthorn's clinique. I have the privilege of showing these for Professor Schottlaender (Case 1, Figs. 1–4). Such an occurrence is so rare that I feel justified in placing his case on record.

CASE 2. *Carcinomatous polypus of the fundus uteri—the cervix alone being carcinomatous.*—I also show for Professor

[1] A paper read before the Obstetrical and Gynæcological Section of the Royal Society of Medicine on Oct. 6th, 1910.

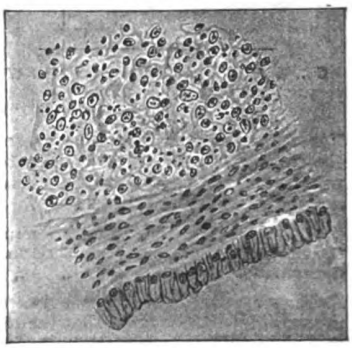
FIG. 1.



Case 1.—General view of the polypus; low magnification. (*a*) (*b*) (*c*) Sections taken at the points indicated in this drawing.

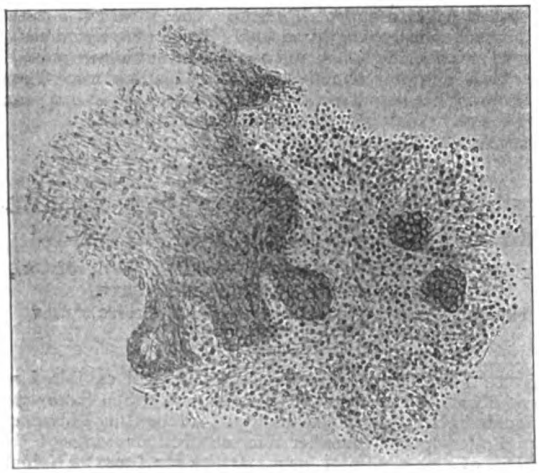
The drawings show (*a*) a cervical gland in its periphery becoming sarcomatous; (*b*) the surface of the polypi covered with a layer of proliferating, metaplastic cylindrical epithelium; (*c*) an island of cervix mucosa with many-layered glandular epithelium filling the gland lumen (arousing the suspicion of early carcinoma) surrounded by a sarcomatous stroma. The patient was aged 70 years; she would not submit to any further operation.

FIG. 2.



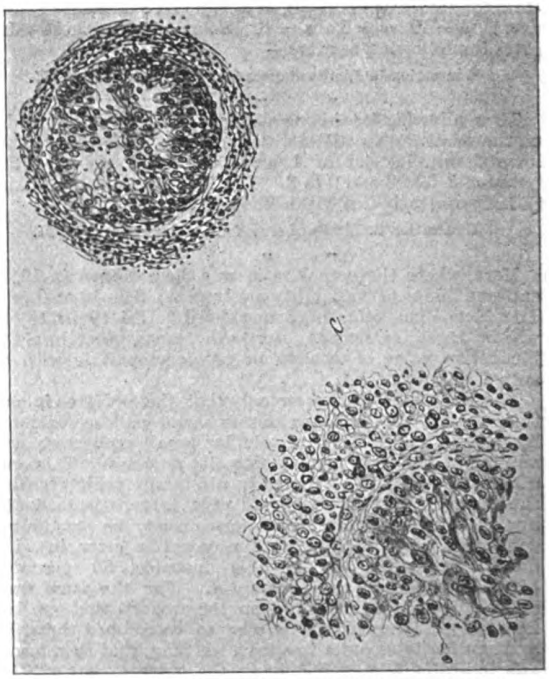
Case 1 (*a*).—Taken through the periphery of a cervical gland surrounded by a cellular stroma becoming sarcomatous.

FIG. 3.



Case 1 (*b*).—Taken from the surface of the polypus. On the surface is a layer of metaplastic cylindrical epithelium, which proliferates inwards. Several detached single alveoli appear separated from the main mass.

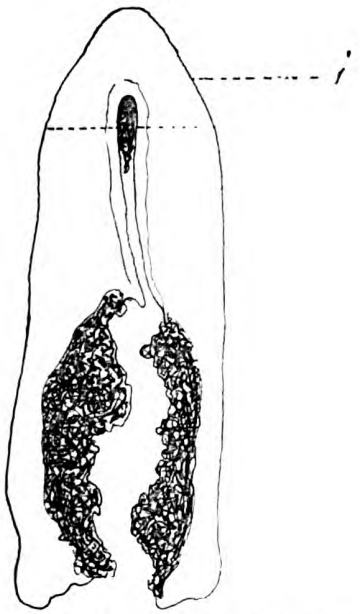
FIG. 4.



Case 1 (*c*).—An island of cervix mucosa with many-layered glandular epithelium filling the gland lumen and arousing the suspicion of early carcinoma surrounded by a sarcomatous stroma.

Schottlaender a drawing of the sagittal section of an entire uterus, the cervix of which was destroyed by a carcinomatous crater, and in the fundus, growing from its summit, a mucous polypus. Section of the latter showed a solid carcinoma. There was no connexion whatever between the polypus and the carcinoma of the cervix, the mucosa of the fundus and body being quite free from carcinoma. The patient was a woman aged 57 years.

FIG. 5.



Case 2.—The cervix shows a carcinomatous crater for which a radical operation has been carried out. A small mucous polypus is seen at the fundus, and sections have been made through the fundus at the level of the dotted line. The sections have not passed through the level of attachment of the polypus, which therefore seems to lie free in the uterine cavity. The polypus is seen to be invaded by strands of columnar-celled epithelium, some of which are solid and others alveolated. The endometrium of the corpus is atrophic; most of the gland epithelium has disappeared or dropped out of the lumina of the glands during preparation.

In connexion with this case I may refer to one brought before the British Gynæcological Society by me—in which a carcinomatous mass filled the summit of the uterus, the rest of the cavity and the cervix being free from malignancy.

Harley-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON CO POISONING AT THE WHITEHAVEN PIT DISASTER.

BY C. J. J. HARRIS, M.D. DURH.,
AND
EUSTACE THORP, L.R.C.S. EDIN.

ON May 11th, 1910, there occurred in the Wellington Pit, Whitehaven, a disaster by which 136 men and boys lost their lives. Five months afterwards we examined a large number of the bodies. The greater number were much decomposed. From each batch specimens of liver and heart were sent to a physiologist for examination, with the result that the spectroscope proved that in 35 death was undoubtedly due to CO poisoning. This, we think, is a record for the length of time for detection of CO-hæmoglobin. In the case of many other bodies in which we suspected death to have been due to CO, but in which it was not proved, it was supposed that the compound had been dissociated by heat and bacterial agency. The heat was so intense at certain parts of the mine that iron bolts were melted. On examining the bodies post mortem we noticed that all were well nourished. The viscera showed great decomposition. The liver in all cases was in a state of excellent preservation, the heart in fairly good condition though flabby, and the lungs were the most decomposed organs. The muscles and intestines were of a bright pink colour, which quickly turned muddy-brown on exposure to air. Certain of the bodies showed signs of burning, extensive charring being present on all parts, the scalp in some instances being entirely carbonised. In one case a mass of bones and white ash were found: these were quite calcined and resembled the shanks of clay pipes, the only perfect bones being the temporals, some carpal and metacarpals, and one or two vertebræ. The remains were found in most cases in attitudes of repose and in large groups, and in many instances so decomposed that one of us (C. J. J. H.) found it necessary to order the bearing party to place shovels under the head, shoulders, hips, and legs to prevent them from falling apart. From our investigations the causes of death were classified thus:—

Undoubted CO poisoning	35
Burns and shock	30
Violence of explosion	12
Suffocation (smoke fumes and probably CO) ...	38
Burns and suffocation (not CO)	4
Presumably burns, shock, and suffocation ...	1
Suffocation (probably CO)	12

Thus we believe that 85 of the victims met their death from CO poisoning and, as mentioned above, in 35 this was definitely proved. It may be interesting to add that the remains were found about 600 feet down, the nearest being three miles from the shaft. Falls and gas had to be encountered, so that the men had to move the bodies as expeditiously as possible, many of them being "groggy" on their legs from the inhalation of the gaseous fumes. Formaldehyde was the disinfectant used.

Whitehaven.

NOTE ON A CASE OF LOSS OF VISION FOLLOWING A SMALL DOSE OF SANTONIN.

BY E. J. BAXTER, L.R.C.P. & S. E.

THE following sad case of poisoning by half a grain of santonin may be of sufficient importance to make it worthy of notice in your valuable journal.

A girl, about 5 years of age, suffering from roundworms and threadworms, was brought here for treatment. My assistant gave her a dose of santonin in castor oil, which, however, her mother says, she vomited almost immediately after leaving the dispensary. Three days later she brought the child again for treatment, as beyond the vomiting caused by the castor oil the first dose had had apparently no effect. I then repeated the medicine, giving half a grain of santonin in about 2 drachms of castor oil. This was retained for about eight hours, when it acted, bringing away a large number of threadworms, together with a few roundworms. The mother says that the child then became very weak and for two days lay as if she were dying, without moving her limbs or opening her eyes. But on the third day she began to recover and it was then discovered that she was quite blind. It was not till three weeks later that the parents, who live about 12 miles away on the top of the mountains, again brought the child to me. On examination I found that the girl was, as the mother stated, quite blind. Hoping that under treatment the sight might be restored, I got the mother to remain here with the child for about six weeks, at the end of which time, as the girl was still blind, she returned home with her. Though more than three months have elapsed since the child was brought here for treatment, I have not heard that the sight has been recovered.

I would like to know if any of the readers of THE LANCET have had a similar experience from so small a dose, and what treatment has been found beneficial in such cases. Stillé cites a case in which a child aged 6 months took 5 grains of santonin instead of 3 grains which had been ordered, and becoming amaurotic did not recover sight for two months. Hughes says, "it must be remembered that 2 grains have proved fatal to a child." In THE LANCET it has been recorded that 1½ grains caused convulsions in a child.

Dar-es-Salaam, G. E. Africa.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION.

Fractures near Joints.

A MEETING of this section was held on Nov. 29th, Mr. RICKMAN J. GODLEE, the President, being in the chair.

The adjourned discussion on the paper by Mr. Robert Jones (Liverpool) on the Treatment of Fractures in the neighbourhood of Joints, which was published in THE LANCET of Nov. 19th, p. 1479, was opened by Mr. HERBERT J. PATERSON, who said that Mr. Jones had pointed out with regard to the treatment of fractures that there were two schools—one relying upon operative, and the other relying upon mechanical methods of treatment. The discussion indicated that there was less difference in principle between the two schools than was generally believed. Mr. Jones had told them that if he could not put a fracture into perfect alignment he operated. That was exactly the same position as that taken up by Mr. W. Arbuthnot Lane. His own practice was similar. The debate would not have been in vain if the principles upon which fractures should be treated had been clearly laid down, and it was interesting to learn that Mr. Arbuthnot Lane and Mr. Jones were in agreement as to first principles concerning fractures. There was one point upon which Mr. Jones had not touched. As Mr. Jones had observed, impairment of function was much more serious than any mere outward change of shape; but change of shape might be a serious matter for the surgeon. Whether they liked it or not, they had to recognise that since the introduction of X rays the public had become increasingly critical as to the results obtained in the treatment of fractures. The courts of law now were not satisfied that all possible had been done if the X rays demonstrated a result anatomically bad, however good the functional result might be. He was not arguing that that attitude was right, but he wished to point out that as the courts of law took that view surgeons must either accept it or try to alter it. It was interesting to learn from Mr. Jones that the use of a double inclined plane for fractures of the femoral condyles was based on a superstition, but at the same time he (Mr. Paterson) did not think that Mr. Jones's analogy with the treatment of an osteotomy of the femur was a true one. In a traumatic fracture there was much laceration and tearing of muscles, and, as a consequence, much greater displacement, than was the case after section of the bone with a chisel. Consequently, after osteotomy they would not expect to have to use a double inclined plane any more than they would think it necessary to use a screw or a plate. He (Mr. Paterson) confessed that his experience of the treatment of these fractures by splints and extensions had been very unsatisfactory, and although he pleaded guilty to having designed a special splint for these fractures he had come to the conclusion that in most cases an operation gave the best results. He agreed with all that Mr. Jones had said as to the harmful effects of early passive movements in fractures about joints, and believed that many of the bad results which followed these injuries were the outcome of the present advocacy—he had almost said mania—for early passive movement. He was glad to learn that Mr. Jones regarded as a superstition the belief that a joint would remain permanently stiff because it was kept immobile. There could be little doubt that many erred on the side of too short a period of fixation, and he thought that the periods of union of fractures laid down in text-books were too short. If at least a week or ten days were added to each period given they would not err on the side of too prolonged treatment. He supposed that some of the most troublesome fractures with which they had to deal were those about the ankle-joint. Few surgeons would assert that the treatment of these fractures was entirely satisfactory. Mr. Clinton Dent had told them that he had never known a member of the police force able to return to duty after a Pott's fracture. Correct alignment and accurate adjustment of the parts in this fracture was of such importance that he thought most cases were treated best with screwing or plating. He gathered that Mr. Jones's practice was tending in the same direction. It was probable, however, that the frequency of indifferent results was due to insufficiently prolonged treatment. They were apt to be satisfied if the patient left the hospital with a well-united, well-set limb, but they had often little idea as to the ultimate results. As Mr. Jones had suggested, the patient got about too soon, and a condition of valgus was the consequence. It had always struck him (Mr. Paterson) as remarkable that even the most vigorous opponents of the open treatment of fractures were usually enthusiastic advocates of operation in cases of fracture of the patella. This attitude did not seem readily explicable. Firm fibrous union of a fractured patella was the rule when treated without operation. There was no question of correct alignment, and it was not of great importance whether or not the fragments be brought into close apposition, and the fracture did not result in any shortening or deformity. No one could assert that there was absolutely no risk of sepsis in opening a knee-joint. And yet many of those who regularly operated in fractures of the patella maintained that it was unjustifiable to operate on a fracture of the femoral shaft. Personally, he considered that operation was indicated more certainly in the case of a fractured femur than in that of a fractured patella. In the case of the femur correct alignment was of the utmost importance. For his own part he did not advise routine operation on fractured patellæ because he believed that as good a result could be obtained without as with operation.

Mr. DOUGLAS DREW said that they had heard so much recently about the necessity of operative measures in the treatment of fractures that it seemed to him that the paper by Mr. Jones demonstrated what excellent results might be obtained by manipulative means in the hands of a skilful surgeon. Mr. Drew recognised that some of the fractures under discussion could only be treated satisfactorily by operative means, and believed that in the majority of fractures in the vicinity of joints an entirely satisfactory result could be obtained by manipulative means alone. Continuing, he observed that those who favoured operation naturally thought that they could obtain better results by so doing, and he thought they were liable to overlook the fact that even after operation the result, as demonstrated by the X rays, was by no means anatomically perfect, and often it did not appear to be better than in a similar case treated without operation. Mr. Drew thought that there was a tendency to minimise the fact that these procedures were often of a severe nature and, even with the most perfect technique, a failure from sepsis might occur with disastrous results. He thought that operation should be reserved for those cases in which it is impossible to get the fragments into a good position and in which impairment of function was certain to follow. His experience lay chiefly with children, and in 13 years as surgeon to the Queen's Hospital for Children he had seldom found it necessary to operate. His usual practice was to commence massage within a few days of the accident, and if there was no tendency to displacement of the fragments gentle passive movements should not be delayed; but he did not agree with Mr. Jones in thinking that they caused additional trauma and increased the stiffness provided they were carried out with sufficient care. The best guide was the absence of pain; he agreed that active movements should be encouraged, but in children this was one of the difficulties, and it was best overcome by showing the child that the injured limb could be moved without causing pain. With regard to separation of the lower epiphysis of the humerus, full flexion of the elbow sufficed to reduce the deformity in most cases, but sometimes, owing to the swelling, it was not possible to flex to the desired degree. Separation of the lower epiphysis of the femur with marked displacement was sometimes a very difficult injury to treat, and might necessitate operation. Mr. Drew concluded by describing an example of an extreme form of this injury, in which the epiphysis was displaced forward on to the anterior surface of the shaft and rotated so that the articular surface looked directly forward. It was found impossible to reduce this except by operation, and it could not be retained in position without the use of Lane's plates.

Mr. C. H. FAGGE said that it would be generally agreed that the great difficulty in restoring the normal alignment of such fractures was the small size of the articular fragment and the consequent inability of exercising upon it sufficient

leverage to bring its broken surface into true relation with that of the larger fragment; he therefore held that this class of injury was particularly suitable for treatment by open operation as introduced by Mr. Arbuthnot Lane. The necessity for accurate replacement varied in different positions of the body and also with the occupation of the patient, but was fundamentally called for in treatment of the common fracture of the region of the ankle—known as Pott's fracture whether of the adduction or abduction type—because of the serious mechanical disabilities such as flat foot and genu valgum which followed the usual inability to reduce the deformity by other means. Similar injuries in boys resulted in separation of the lower tibial epiphysis with fracture of the fibula, and in his experience operation alone restored the parts to their normal relationship; he had recently operated on such a case in which the diaphysis so far overhung the epiphysis and tarsus that an effort had been made in another hospital to reduce it as a dislocated ankle. He also held that many cases of supracondylar fracture of the humerus could not be replaced by manipulation, and showed some X ray photographs contrasting the position after manipulation under an anæsthetic with the real replacement fecured by open operation. In the common supracondylar sracture operation allowed of the evacuation of blood from the fossæ around the elbow and thus minimised the tendency to callus formation in this position, which later so frequently resulted in limitation of movement. Of all injuries in the upper extremity calling for operation Colles's fracture and separation of the lower radial epiphysis were the most common, and in these, as in many of those affecting the lower end of the humerus, replacement was all that was required, as when replaced the fragments remained in good alignment. Fractures near the shoulder did not usually demand operation, because movements of the scapula vicariously replaced those lost at the shoulder. X rays were of great value, especially in warning the surgeon in cases where the bones were so frail, as indicated by abnormal translucency to the rays, that screws could not obtain a firm hold.

Mr. W. H. CLAYTON-GREENE said that he did not agree with the views of Mr. Jones as to early movement. The first object to attain was rest for the injured parts, and yet they were told to commence movements at the end of the third day. Mr. Clayton-Greene said he was strongly opposed to such methods, and declared that except in the hands of most specially skilled people much harm resulted therefrom.

Mr. H. P. SYMONDS, Mr. A. E. JOHNSON, and Mr. A. J. WALTON also spoke, and Mr. R. J. GODLEE described how he had used an ivory peg in a case of fracture of the neck of the femur.

Mr. JONES, in replying on the discussion, thanked the Fellows for their kindly criticism, which showed that there was not any wide disagreement. He thought that if speakers gave their experiences it would teach extremists that there was more than one way of achieving the same result. In the hands of a clean surgeon he would not mind having almost any bone in his body wired. Again, if he could be assured of a good functional result without operation, he would be willing to forego a more artistic one. He had not known of a description of fractures of the spine of the tibia, and he thanked the President for the description of his case. He agreed one often found a rounded condition of the neck in traumatic coxa vara, which assured one that there was antecedent softening of bone. He had skiagrams showing separation of the epiphysis, starting from below as a little V-shaped space which gradually extended, resulting finally in a complete separation, the neck ultimately becoming rounded and resulting in a typical coxa vara. With regard to pegging or wiring where there was separation of the head of the bone in a young adult, he thought it unnecessary; if it were well abducted and extended there would be a good result. If it were decided to nail through the trochanter it should not be done without first exposing the joint. With regard to avulsion of the tibial tubercle, he had several photographs showing separation in various stages—the later photographs in some cases showing the separation more marked. Unless treated by complete rest, there was likely to be much thickening over the tubercle and tenderness on pressure. That was best treated by making a linear incision into it with a chisel, just as in the case of sclerosed bone, to relieve tension. He had seen this year two cases of Volkmann's ischæmic paralysis, so it did not yet belong to the past entirely. It took place as often from pressure within the arm as from pressure from without it. Cutting down on each tendon and lengthening it was not so effective as a simple procedure which he himself had demonstrated. It had been suggested that Bennett's fracture was never troublesome, but the speaker regarded it as one of the most difficult to treat mechanically, and he would be glad to hear what measures could be taken in that condition. Incomplete mobility so often occurred that he sometimes had to cut down to remove the fragment. Mr. Fagge said that Colles's fracture was very suitable for plating, but Mr. Jones thought Colles's fracture was one of the most amenable to simple treatment. Colles's fractures which resulted badly did not redound to the credit of either the surgeon or the patient. With reasonable coöperation there should be no bad result in cases of the kind. In dealing with acute flexion it was not sufficient to put the arm into an angle of 45°, but the flexion and supination should be complete, the hand almost resting on the shoulder.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Congenital Obliteration of Bile-ducts with Hepatic Cirrhosis.—Exhibition of Cases.

A MEETING of this section was held on Nov. 25th, Dr. E CAUTLEY, the President, being in the chair.

Dr. F. PARKES WEBER and Dr. G. DORNER communicated a paper on Congenital Obliteration of Bile-ducts with Hepatic Cirrhosis. The case was that of a female child, aged 6 months at the time of death, who had jaundice of the obstructive type with complete absence of urobilin (and urobilinogen) from the urine and the fæces. The liver and spleen were both considerably enlarged. The necropsy showed that the distal part of the hepatic duct, the cystic duct, and the common bile-duct were represented by connective tissue cords without any lumen, but the cord representing the choledochus could not be traced as far as the duodenum. Sections of the connective tissue cord showed not only complete absence of any biliary channel, but furnished no evidence that there ever had been any lumen. Perhaps the term "congenital atresia of bile-ducts," as suggested by Lavenson, was therefore more suitable for the present case. The gall-bladder contained a little slimy, colourless fluid. In the spleen the pulp tissue and supporting fibrous tissue were increased in amount. The liver was green in colour, the cirrhosis being of the unilobular (interlobular) type, which can be experimentally produced by ligature of bile-ducts (obstructive "biliary cirrhosis"). The liver and microscopical sections from the case were exhibited.

Dr. J. L. BUNCH showed a case of Morphœa in Band Form in a girl aged 5 years. Three years ago the child fell and bruised her forehead. Shortly afterwards a patch of sclerodermia appeared on the right temple, gradually spreading upwards on to the scalp and downwards on to the nose. Over the affected area the hair had disappeared and the skin was tense and atrophic.

The PRESIDENT exhibited a case of Splenic Enlargement in a boy, aged 6 years, whose family history was good and free from tuberculosis and syphilis. Three weeks previously sudden pain and swelling occurred in the ankles, which rapidly subsided. The eyelids and feet at first were œdematous; the urine was normal. The spleen was considerably enlarged and the liver slightly so. The blood showed a leucopenia. In the discussion both tubercle and syphilis were suggested as a diagnosis.

Mr. H. S. CLOGG showed a case of Extensive Necrosis of the Lower Jaw in a girl aged 7½ years. Two months previously the child had toothache and swelling of the face and submaxillary regions. The mouth could only be opened half an inch, and the tissues on the floor were indurated. The constitutional disturbance was great, the temperature rising to 103° F. On the gum and lower lip were large sloughs and a copious purulent discharge. The lower central incisors fell out, and the whole of the alveolus in this region was exposed. Other loose and carious teeth were removed, and antiseptic mouth washes were used with little improvement. As the pus yielded a pure streptococcus 10 c.c. of serum were given with marked benefit. Four other injections caused a fall of the temperature to normal on the tenth day. The child rapidly improved in health, but the sequestrum was still firmly attached.

Dr. T. R. WHIPHAM exhibited a case of Patent Ductus Arteriosus with deficient interventricular septum in a girl

aged 11 years. There was a history of cardiac distress since infancy, but there was no "clubbing" and no cyanosis except on occasions. The dulness of the heart and great vessels was increased to the left. At the apex there was a blowing systolic murmur, and over a localised area in the pulmonary region there was a continuous thrill and a loud "churning" rumble throughout systole and diastole. There was no evidence of enlarged glands.

Dr. PARKES WEBER showed: 1. A case of Nævus Verrucosus Linearis in a boy aged 3½ years. The skin of the trunk, neck, and extremities was largely affected with pigmented and verrucose nævus. The abnormality began when the child was seven months old. 2. A case of Congenital Transposition of the Viscera in a girl aged 10 years. Clinical signs and a skiagram showed a complete transposition of all the viscera. There was no valvular disease of the heart.

Dr. F. LANGMEAD showed: 1. A case of Rheumatoid Arthritis in a boy aged 13 years. The condition began two years ago and the hips, knees, ankles, elbows, wrists, and hands had been affected. The axillary glands were slightly enlarged, but no enlargement of the spleen had been detected. Skiagrams showed that the enlargement of the joints was periarticular. Improvement had been brought about by treatment with thyroid extract, which was given on account of the mother having had myxœdema for 15 years. 2. A case of Malformation of the Heart in a male infant, aged 8 months, who was cyanosed but did not show any appreciable "clubbing." The heart was enlarged to the left; a systolic bruit was audible over the cardiac area, especially at the xiphisternal junction and was accompanied by a thrill. The condition was possibly one of deficient interventricular septum.

Mr. O. L. ADDISON showed: 1. A case of old healed Tuberculous Disease of Knee-joint with increase in length of the limb. The boy first had signs of tuberculous disease of the knee in 1906. He was treated for six months, and afterwards had a Thomas's splint. For the last eight months he had been walking about and was free from recurrence. Movement in the joint was almost perfect, but the leg was one inch longer than the other, the femur and tibia being each half an inch longer. Skiagrams showed increased translucency of the tibial and femoral epiphyses with some irregularity of outline. 2. A case of Sarcoma of the Femur in a girl aged 1½ years. The growth, which was in the right femur, had been noticed for two months and did not appear to penetrate the bone (X rays). The liver and spleen could both be felt, and there were a few small glands in the left groin. It was not proposed to operate. 3. A case of Interstitial Hernia in a boy, aged 2 years, who had been operated upon for left inguinal hernia. There was a subcutaneous hernia of the size of a pigeon's egg above Poupart's ligament on the same side, and the left testicle was undescended.

Dr. G. A. SUTHERLAND exhibited a case of Cardiolysis for Adherent Pericardium in a boy aged 6 years. Eleven months ago the patient was admitted to hospital suffering from subacute rheumatism and rheumatic nodules. There was bulging of the præcordial region and a heaving impulse. The heart was greatly enlarged and a double murmur was audible at the apex. The boy became a chronic invalid, and adherent pericardium with dilatation and hypertrophy was diagnosed. Six months ago Mr. W. H. Clayton-Greene removed parts of the cartilages of the fourth to seventh ribs at the sternal junction to allow more freedom of action for the heart. Since then the boy had had one attack of cardiac failure, but on the whole he had been better and much more active.

The paper and cases were discussed by the PRESIDENT, Dr. J. W. CARR, Dr. SUTHERLAND, Dr. H. D. ROLLESTON, Dr. J. D. ROLLESTON, Dr. J. PORTER PARKINSON, Dr. A. E. GARROD, Dr. T. R. WHIPHAM, Dr. E. I. SPRIGGS, Dr. F. W. HIGGS, Mr. W. MILNER BURGESS, and Mr. J. P. LOCKHART MUMMERY.

MEDICAL SOCIETY OF LONDON.

Heart Strain and Dilatation.

A MEETING of this society was held on Dec. 5th, Mr. CHARTERS J. SYMONDS, the President, being in the chair.

Dr. W. COLLIER (Oxford), in resuming the adjourned discussion on Dr. F. J. Goodhart's paper (see THE LANCET of Dec. 3rd), said that unfortunately heart strain in athletes had been on more than one occasion of late years the subject of discussion in the columns of the lay press. Anyone would gather from those discussions that the athletic competitions at public schools and universities were a potent cause of life-long injury to many boys and youths. But the real facts of the case were brought out in an inquiry made among the medical officers of schools and universities, who were almost unanimously of opinion that such care was taken in the matter that there was very little injury done.

Dr. SAMUEL WEST said that strain was a term in common use. A man was said to be working under great pressure or strain, nervous or physical, and when overworked to be suffering from nervous or physical breakdown. Strain in its clinical sense was that breakdown or overstrain. Cardiac strain in the same way might be nervous or physical. The two groups should be sharply distinguished, for the physical strain had its seat in the heart and nervous strain outside the heart in the nervous system. It might be stated that those in whom the nervous symptoms were most marked were least likely to show signs of organic disease. It would be well if the distinction could be marked by different terms, for heart strain was generally assumed to imply muscular failure. For the nervous group there was no satisfactory name. Functional affection or cardiac neurosis were at once too indefinite and too wide. The diagnosis between the two groups was of great importance, but it was just there that the difficulty came in, and mistakes were common enough to destroy confidence and necessitate caution. The cardiac symptoms were the same in both groups—viz., pain, palpitation, and shortness of breath. To those were added in the cardiac group the physical signs of dilatation—viz., displacement of the apex, increase of cardiac dulness and movement. The difficulties of diagnosis were increased by the fact that the two classes cut into one another. Thus the general ill-health accompanying a nervous breakdown might affect the heart muscle and make it to be feeble and to dilate. On the other hand, nervous symptoms might be added to the symptoms of organic disease and greatly aggravate the patient's suffering. No organ was more subject to nervous influence than the heart. Every one was familiar with the bursting feeling in the chest, the choking in the throat, and the violent palpitation of a nervous man who had to speak in public. Training was not merely muscular but nervous too, and in that case the nervous system began its work too soon. It was not till the heart was hard at work that it steadied down and relief was obtained. That was a good illustration of the beneficial effect of treating nervous cardiac over-action by work.

Dr. WALTER BROADBENT said there was one interesting method of examining a case of supposed heart strain which had not been referred to—that was by taking a tracing of the jugular pulsation in the neck with Mackenzie's polygraph. As far as his experience went, he had found that in cases which were functional or due to some form of dyspepsia there was no variation from normal in the jugular tracing, but in genuine cases there might be one of two conditions—either a very large auricular wave or a ventricular wave higher than the auricular. When the auricular wave had been large, presumably showing hypertrophy of the auricle, relief of symptoms had quickly followed the giving up of violent exercise for a week or two and the taking of a tonic. The patient had been able gradually to resume his old mode of life and the playing of games with only a little moderation. When the ventricular wave had been higher than the auricular, though rest, graduated exercise, and treatment had changed the character of the jugular curve and made the ventricular wave much smaller than the auricular, there had been great liability to relapse on any unusual exertion. Those jugular tracings were particularly useful when there was very little dilatation of the heart, and that perhaps masked by emphysema. When there was definite dilatation, it seemed to him better to put the patient to bed and give calomel and cardiac tonics, in order to see how much the heart would contract. He had seen the apex beat come in over an inch in a week. Massage was useful to keep the muscles in condition. As soon as the size of the heart appeared to be stationary, the patient could be gradually got on to his feet while the massage was continued. Afterwards he had a great belief in the Oertel system of graduated walking up hill. That was very easy to carry out in a hilly place like Brighton, every day one lamp-post further up the street, or, if the hill was steep, taking two to three days to reach the next

lamp-post. He had seen a gentleman last week who for a year up to last January had not walked 200 yards without getting out of breath; he was only 40 years of age, but had a dilated heart, said to have been brought on by sudden exertion. He had followed the Oertel system diligently, and now told him that he had reached 500 feet of altitude and six miles of distance daily. During the whole time the size of the heart had steadily decreased. That was an infinitely cheaper form of treatment than the Nauheim, and in his experience had given quite as good results.

Dr. ALEXANDER MORISON thought that Dr. Goodhart had rendered a public service in opening this discussion. He considered that the public had been unduly familiarised with the ideas of cardiac dilatation and strain during the last 20 years. While, however, he deprecated the attitude of the alarmist in medicine, he thought there was also some danger in that of the optimist. Hearts did dilate or become inefficient without gross organic disease, and it was quite possible unduly to minimise the importance of such conditions. Variations from the normal standard had to be examined carefully before being dismissed as unimportant. He did not think the argument from the right to the left heart was on all fours. The conditions involved were so different. While he regarded with suspicion all mitral leakages, he considered tricuspid leakage and right ventricular distension common and often physiological. He agreed with Professor Keith that left and right apical displacement was usually governed by the distension of the opposite auricle. Right auricular engorgement was common and often physiological, even in the presence of left ventricular disease; and the displacement of a variable apex beat to the left, also frequently physiological and of little moment. On the second head of the discussion concerning the neural origin of some persistent irregularities of the heart, he agreed with Dr. Goodhart, but considered that the question was now so much debated and of so interesting a character that it could not be adequately discussed as a rider to the general theme under consideration.

Sir JOHN BROADBENT agreed with Dr. Goodhart that the importance of percussion of the area of cardiac dulness as a means of estimating strain or dilatation of the right ventricle was greatly over-rated. It was not rational on percussing out the area of cardiac dulness for the first time in a new patient and finding that it exceeded somewhat the normal limits to say that the heart was necessarily dilated and required treatment. An athletic individual would naturally have a larger heart than an ill-developed bookworm, the increase in size being the physiological response to the increased demand. It was not the size of the heart as estimated by percussion that mattered, but its functional capacity that was all important. In aortic incompetence a certain amount of dilatation followed by hypertrophy was a part of the compensatory change. In diphtheria, in which a fatal syncopal attack was especially liable to occur, there was frequently no appreciable evidence of cardiac dilatation as shown by percussion. More valuable evidence as to the functional capacity of the heart could be gathered from the pulse, the character of the heart sounds and of the apex beat, or from symptoms such as breathlessness or præcordial pain on exertion, than from mere mapping out of the cardiac dulness. It was advisable in speaking of cardiac dilatation to distinguish between dilatation of the right side of the heart and that of the left. As a result of severe exertion the right side of the heart might temporarily be over-distended and a systolic tricuspid murmur make its appearance, but equilibrium would soon be restored in a healthy heart. It was a more serious matter when a systolic mitral murmur set in after exertion, as that indicated dilatation of the left ventricle. The important etiological factor in dilatation of the heart was loss of tone in the cardiac muscle. Such loss of tone might result from various toxæmias, and the dilatation of the right ventricle that ensued might be very considerable. This was especially the case in rheumatism, and here there was frequently not merely loss of tone, but extensive damage to the cardiac muscle, which would account for the extensive degree of dilatation met with in this affection. Ptomaine poisoning and auto-intoxication might also be responsible for such loss of tone. An atonic condition of the cardiac muscle might also be part and parcel of the general loss of tone throughout the muscular system due to exhaustion of the nerve centres from overwork or prolonged mental anxiety and strain, or some severe shock. In such conditions undue exertion might readily give rise to acute dilatation. The following were instances he had seen. A solicitor, greatly overworked, found that he could not play golf as usual on a Saturday without getting short of breath and very soon tired. He was found to have a soft systolic mitral murmur and an apex beat half an inch outside the nipple line. A strong athletic man after an accident in which a depressed fracture of the skull necessitated trephining, found that after his recovery from this he was short of breath on slight exertion and generally slack. On examination a similar condition of heart was found. In both these cases change to a bracing climate with rest at first, not in bed but simply taking things easy, followed by graduated walking exercise, led to complete recovery and all disappearance of the cardiac murmur. A large proportion of symptoms often attributed to cardiac dilatation, such as palpitation and other disorders of rhythm, fainting attacks, and various subjective sensations of pain and discomfort in the præcordial area were "neurons" of the heart or reflex disturbances which were commonly met with in highly strung individuals or in cases of nervous breakdown after prolonged strain or anxiety.

Dr. CHARLES W. CHAPMAN said the importance of dilatation depended upon (1) the age of the patient; (2) the general physical condition; and (3) the previous history. When the patient was young and vigorous and had his heart strained then, although he had some dilatation, irregular action, and possibly a soft systolic mitral murmur, a short period of rest would in most cases be all that was necessary. In patients past middle life, although they might up to the time of the strain hold a clean bill of health, the prognosis and the length of rest necessary would depend upon the state of the vessels and of the more important viscera, especially the kidneys. He had recently seen a gentleman about 60 years of age, who had severe cardiac symptoms after dancing. He had never been ill. The serious nature of the case was not recognised and he was allowed to travel. On his arrival home he was very ill, and when seen by Dr. Chapman in consultation his heart was greatly dilated, and he had all the signs of back pressure, to which he rapidly succumbed. Had that patient been put to bed at once and had complete rest he would in all probability have got better. With reference to the previous history, that of syphilis was of paramount importance, particularly if aortic as well as cardiac dilatation existed, when prolonged rest, in conjunction with treatment, was of vital importance. As to whether the limits of cardiac dilatation could be defined with any approach to accuracy, he was confident it could by percussion properly performed by one practised in the art, though something of a musical ear was a great assistance. At the same time, to pretend to make measurements to a hair's breadth was as ridiculous as it was useless.

Dr. LEONARD GUTHRIE agreed with Dr. Goodhart that the physical signs supposed to indicate heart strain and dilatation—namely, slight displacement outwards of the apex beat, an impulse varying in force and direction and speed, irregular and intermittent action, together with the presence of bruits, systolic in time over the pulmonary valves, and sometimes audible from the apex to the level of the pulmonary area, varying with the patient's position, were unreliable as evidence of cardiac dilatation. He thought, however, that they might be regarded as evidence of past strain and dilatation, and of potential dilatation should the patient indulge in over-exercise. It did not follow that because signs of dilatation were absent at one time that they had not been and would not be present at another. He agreed again with Dr. Goodhart that the symptoms—fainting attacks, pains over various parts of the præcordial area, sighing respiration, palpitation, collapse with sensation of impending death, and extreme lassitude after smallest exertion—were not those met with in cases of cardio-valvular disease. Still, the symptoms were no doubt of cardiac origin in spite of the fact that the patient was as a rule neurasthenic to an extreme degree. He did not think it altogether safe to treat such patients as neurasthenics without reference to their cardiac condition. If one reassured them and said there was nothing the matter with their heart they were extremely likely rashly to over-exert themselves and thus make matters worse, as in one of Dr. Goodhart's own cases. He believed that the most frequent cause of cardiac strain and primary dilatation was

over-exertion following an attack of influenza. Although, as Dr. Goodhart stated, treatment by rest might be overdone, he was convinced that in all acute cases it was necessary for at least a month. Gentle and graduated exercise might then be prescribed, but athletics and all prolonged or severe physical exertion should be forbidden to those who had once suffered from definite symptoms of cardiac strain and dilatation.

Dr. F. PARKES WEBER having spoken, Dr. GOODHART replied, and the meeting concluded.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Transperitoneal Cystotomy, with Report of a Case.—Diagnosis of Renal Calculus.

A MEETING of this section was held on Nov. 18th, Mr. R. H. WOODS, the President, being in the chair.

Mr. SETON PRINGLE read a paper on Transperitoneal Cystotomy for Tumour of the Bladder, with Report of a Case. He gave a history of this operation, and compared the results obtained by it with those obtained by operating by the suprapubic route. He advocated this method in all cases of tumour, except those situated at the apex of the bladder. He described the operative technique in detail, and illustrated the various steps by lantern slides. The paper concluded with a report of a case of papilloma successfully dealt with by this route by Mr. Pringle.—Mr. A. J. BLAYNEY said that he had used the method twice, and he could confirm what Mr. Pringle had said with regard to the excellent view of the bladder obtained. The after-treatment he had used was to drain the bladder for a few days, and afterwards urine was passed quite readily.—Mr. JAMESON JOHNSTON said he had not done the operation, but it appealed to him as being scientific, and based on anatomical principles, and one certain to be very useful in the future, but he would not use the transperitoneal method unless he thought the other method was not sufficient.—Mr. C. A. K. BALL said he had attempted to do transperitoneal cystotomy in the case of a man, aged 56 years, who had a malignant tumour of about the size of a five-shilling piece involving the left ureter. On opening the abdomen it was found that there was a mass of secondary growth completely adherent to the iliac vessels. The case was therefore inoperable and the abdomen was closed. He was much struck with the splendid access to the bladder that was obtained. Although in a thin patient it was one of great ease, in a fat person there was difficulty in keeping the intestines back before opening the bladder, but when opened the tumour was easily removed and the result was satisfactory. He did not gather whether Mr. Pringle had used the valuable aid of the electric head-lamp which had been brought to his notice by the President. With the head-lamp one was able to work with a smaller incision in the bladder, and the interior was readily illuminated.—Mr. W. I. DE C. WHEELER said that, considering the mortality of the removal of benign tumours, it was time some new methods of technique were developed. He had been impressed with Mr. Pringle's work, and on his advice had used the transperitoneal method. The operation had great advantages over the ordinary suprapubic method, and he would be inclined to use it in every case of tumour of the bladder where there was any difficulty in the removal of the tumour.—Mr. K. E L. G. GUNN asked if Mr. Pringle meant that the operation was to be done in all cases of the bladder or only in carcinoma. He had operated on eight cases of malignant growth in the bladder. In one of the cases he had not recognised malignancy before the operation and found the growth too late to do anything. In two cases he did the transperitoneal operation, and in one case had to replant the ureter higher up in the bladder wall. The patient died five years after the operation. The second survived the operation, but died from recurrence five months afterwards. In four cases of radical suprapubic operation, one died 12 months later, one died in nine months, one was still alive three years after operation, and another four years. One should adopt whatever method was most convenient to get at the growth. No matter how carefully they sutured, there was a danger in the transperitoneal method of leakage of urine.—The PRESIDENT said that, in his opinion, no cavity operation could be as well done without an electric head-lamp as with it, but for the purpose they must have a theatre that was not too highly lighted. If they had a subdued light sufficient to enable the assistants to do their work, and others to see what they wanted to see, and they used a suitable lamp with a large concave reflector that could be varied, he was of opinion that, no matter what the operation was in a cavity, they would be able to see ever so much better, and they would never go back to the old plan that compelled them to put their head between a light and the cavity.—Mr. PRINGLE, in reply, said he did not advocate the operation for all tumours. He thought it had not been done often enough to be quite sure of its mortality. He was inclined to advocate it in all cases except those of tumour situated near the apex of the bladder. One would think that with the transperitoneal operation, even with the risk mentioned by Mr. Gunn, they should have a less mortality than the immediate mortality of 10 per cent. with the suprapubic method. One could form a fair idea of malignancy with the cystoscope, but it was not sure, and the transperitoneal method enabled them to deal much more radically and rapidly with the tumour. He had good light in his case, and he thought the chief point was to get the patient into a very high Trendelenburg position so that he was almost vertical, and the light of the theatre window shining in. He did not personally feel the need of a head-light. As regards the risk of the operation, a great many of the 23 cases reported by him, from American literature, were septic bladders. Richardson in America had taken out two large stones in two cases in which the bladder had tightly contracted down. He did the transperitoneal operation in both cases, the bladder being intensely septic, and both recovered without peritonitis.

Mr. MAURICE R. J. HAYES in a paper on X Rays in the Diagnosis of Renal Calculus laid special stress on the necessity for thorough evacuation of the intestines in order to obtain a satisfactory radiogram. A description of a simple method of obtaining compression of the kidneys by means of an ordinary girth was given. The various causes to which errors in diagnosis may be due were discussed, and radiograms illustrative of these were shown. The use of radiography as the only method of diagnosis of calculi was not recommended, but taken in conjunction with the ordinary methods of diagnosis it furnished more valuable information than could be obtained in any other way.—Dr. W. S. HAUGHTON said he did not think that X rays should be used to replace the ordinary methods of clinical examination, but rather to confirm them. He had never known a Roentgen picture to make a mistake with regard to a stone in the kidney. With regard to controlling the respiratory movement of the kidney, the strap mentioned was an admirable addition to the work. There were other methods of extreme usefulness.—Sir JOHN LENTAIGNE said the X rays were so valuable a help that they were tempted to drop the more laborious methods of diagnosis.—Mr. HAYES, in reply, said he had invested so much in apparatus that he was afraid to put more money into the Albers-Schönberg compressor. He thought it was a cumbersome and heavy affair, and everything could be obtained by a contrivance at an expense of 3*s*. 6*d*. He had recently used a rubber air-pillow, and found that he got the shadow of the air-pillow transversely on the plate. One disadvantage of the air-pillow was that the position of the patient changed during exposure. He expressed his thanks to the speakers for their kind remarks.

Mr. GUNN read a short paper on the Diagnosis of Renal Calculus, giving briefly the chief symptoms and the relative values of such symptoms in diagnosing renal calculus. Mr. Gunn then discussed the question of how far the opinion of the radiographer should influence the surgeon in his treatment of the patient.—Dr. W. G. HARVEY supplemented Mr. Gunn's paper with a few remarks on the X Ray Diagnosis of Renal Calculi. He agreed with Mr. Gunn that the radiographer should examine the whole urinary tract. In the great majority of cases a negative diagnosis was justified by the absence of a shadow in a sufficiently good negative. Such a negative should show (1) the last ribs; (2) the tips of the transverse processes; (3) the line of the ilio-psoas muscle; and (4) the outline of the lower pole of the kidney. He then showed some lantern slides illustrative of these points.—Dr.

HAUGHTON said that if there was any doubt they should repeat the photograph some time later. But a quicker and more satisfactory way was to take a stereoscopic picture by Mackenzie Davidson's method. It was astonishing how two rather indifferent negatives would yield an excellent stereoscopic result. The question of including the opposite kidney was most important. He had come across patients in which the pain was referred to one side, and there were two large stones in the opposite kidney.—Dr. H. STOKES said they could get the symptoms of stone from a hypernephroma. Most of these were not diagnosed until too late. Cases reported showed the surgeon practically certain of stone. If the radiographer took two photographs and found no stone, were they to sit down and let the patient die?—Mr. PRINGLE and Mr. HAYES also spoke.—Mr. GUNN, in reply, said he did not attempt to deal with the differential diagnosis. What Dr. Stokes said was perfectly true. There were other conditions which made it difficult, but time would not permit their discussion.—Dr. HARVEY also replied.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Discussion on Blood Pressure.

A MEETING of this society was held on Nov. 30th, Dr. BYROM BRAMWELL, the President, being in the chair.

Dr. GEORGE ALEXANDER GIBSON, in introducing a discussion on Blood Pressure, first gave a definition of the terms employed in studying arterial pressure. The *maximal* or *systolic pressure* was gauged by that which would arrest the flow in the vessel. The *minimal* or *diastolic* pressure was estimated by the point of greatest lateral oscillation. The *mean pressure* was that half-way between maximal and minimal, and the *pulse pressure* was the amount of difference between maximal and minimal. But these pressures were lateral—i.e., exerted on the walls of the vessels—and the *terminal pressure* consisted in this pressure plus the velocity. The lateral pressure in an artery was usually held to be equal to the terminal of the next branch. The $\frac{\text{pulse pressure}}{\text{systolic pressure}}$ = co-efficient of pressure; thus, in a person in health if the systolic pressure were 120, the diastolic 90, the pulse pressure 30, and the pulse-rate 70, then $\frac{\text{P.P.}}{\text{S.P.}}=\frac{30}{120}=\frac{1}{4}$ co-efficient, and $\frac{\text{P.P.} \times \text{P.-rate}}{\text{S.P.} \times \text{pulse-rate}}=\frac{\text{velocity}}{\text{work}}=\frac{30\times70}{120\times70}=\frac{2100}{8400}=\frac{1}{4}$, or the efficiency of the heart in health. In an instance of heart-block S.P. 270, D.P. 90, P.P. 180, P.R. 30, $\frac{180\times30}{270\times30}=\frac{5400}{8100}=\frac{2}{3}$. The factors which maintained the arterial pressure were as follows: 1. Energy of the heart. 2. Access of blood. It had long been known that any obstruction lessened the distal pressure and increased the proximal, and Dr. Gibson narrated an illustrative case of obstruction to the subclavian. 3. Elasticity of the vessels. During the systole the vessels became dilated and the potential energy thus stored up was given out later as kinetic energy in their contraction. 4. Resistance in arterioles; resistance and pressure were reciprocal. Increased resistance was equal to higher pressure, and *vice versâ*. Resistance was due to tonus of vessels which resulted from the antagonistic action of vaso-constrictor and vaso-dilator nerves; the former were always in action, the latter only when required. 5. Character of the blood. Dr. Gibson had observed that density of blood and pressure were in direct ratio, and viscosity of blood stood in the same relation. Chemical impurities, for the most part, increased pressure. 6. Quantity of blood. It might be expected that increased volume would cause increased pressure. This was, however, amply compensated for by vasomotor activity. With regard to the methods of estimating arterial pressure, Dr. Gibson narrated the earliest observations made by ascertaining the height of a column of blood from an artery, and later by the use of a mercury manometer for the artery and a water manometer for the vein; while still more recently the spring manometer had been introduced. The different forms of kymograph were alluded to. He spoke of the early studies of the pulse and the importance of educating the sense of touch in this relation. He said that the only accurate instruments were those based on estimation by means of a column of mercury. The systolic pressure was gauged by the amount of external pressure necessary to overcome arterial resistance; while diastolic pressure was estimated by the maximum waves of the column of mercury. Dr. Gibson described the instruments of Erlanger and the recording instrument suggested by himself. As regarded the possible fallacies in the methods, he alluded to: (1) the instrumental; (2) the personal equation; and (3) the state of the walls—Herringham stated that the maximum pressure exerted by these was 35 millimetres. Dr. William Russell held that increased tonus could add to this, but the muscular coat of a large artery was not so large relatively as a small artery. As to the clinical results, the cardiac muscle and arterial pressure were reciprocal, and arteriole contraction and arterial pressure were also reciprocal. With high arterial pressure there was a loud aortic second sound, going on to hypertrophy; with low pressure there were feeble sounds. Vascular crises (both high and low pressure) of Pal gave changes in the amount of secretion, renal and salivary. Nervous causes lead to high pressure, and worry to this and to sclerosis; while, on the other hand, from high pressure nervous instability in varied forms resulted. Nervous causes could give low pressure, and in the opposite sense low pressure led to nerve depression. Abnormal extremes: In interstitial nephritis and arterial degeneration 260 D.; 300 S. Addisonism, 60 D., 90 S. Greatest pulse pressure in aortic escape, 70 D., 150 S., and in heart-block 80 D., 270 S. In infective diseases there was an early rise and early fall; this was very marked in typhoid fever. In lead poisoning the pressure was high throughout until recovery, and in gouty conditions it was also high. It was interesting to note that, apart from aortic disease, valvular lesions had little influence on pressure. In aortic incompetence the pressure in the arteries of the legs was much higher than in the arteries of the arms. Arterial sclerosis: There was a general consensus of opinion that retained poisons as well as those from outside caused this disease. There might be arterial sclerosis without high pressure, as of 500 cases examined by Groedel in 35 per cent. there was none; Rudolf with Ellis and Robertson found 50 per cent. of cases with none: and D. Elliot Dickson found thick vessels with only moderate pressure in miners. The relation of high pressure to angina pectoris was discussed. Respiratory diseases: The pressure was high in asthma and low in phthisis. Glandular diseases: In myxœdema the pressure was high; in exophthalmic goitre it was usually low, but was very variable. In Addisonism, low if the medullary portion of the gland were affected. Renal disease: The pressure was usually high from retention of poisons, but much depended on previous conditions. In chronic Bright's disease it was always high; in amyloid changes, usually low; in uræmic poisoning, high. In conclusion, Dr. Gibson discussed the value of arterial pressure in prognosis and as a guide in therapeutics.

Dr. WILLIAM RUSSELL said that in the time at his disposal he could not debate the question before the society. He could only try to define what he considered to be the essential phenomena in the subject under consideration. He would begin at the extreme end and take as an example of it a patient admitted to hospital with a brachial pressure of 295 mm. Hg. Under rest and treatment it fell to 165. It rose and kept about 190 to 210, but it would suddenly rise 70 to 80 mm. more with symptoms which there was no time to describe. This patient had thickened vessels, and along with the rise in pressure the vessels, including the brachials, underwent hypertonic contraction.[1] Nine years ago he had made a communication to the society on arterial hypertonus, in which he pointed out that hypertonus occurred in normal and in sclerosed radial arteries; with the advent of the modifications of the Riva Rocci instrument he had carried his observations to the brachial artery and found that it became greatly thickened, and that it could in favourable cases be both felt and seen to diminish greatly in size and increase greatly in the thickness of its wall during such hypertonic contraction. When this contraction took place the pressure in the aorta was raised—how much there was no means of determining, for there was a great power of restoring the balance and relieving the

[1] THE LANCET, Dec. 3rd, 1910, p. 1602.

heart. The essential phenomenon was the arterial hypertonic contraction and that it embraced such vessels as the brachials. His contention was that the hypertonically contracted and sclerosed arterial wall was a large factor in the production of the brachial reading. A source of fallacy occurred from the fact that in some cases a brachial artery, although thickened, was dilated and atonic, and such a vessel gave a relatively lower reading. A man had died in his ward last week who came in with a failing big heart—failing on both sides; the lungs were congested and he began pouring out fluid into both pleuræ, the heart sounds could not be heard, the pulse was a mere flicker at the wrist, the radial arteries were calcareous, the brachials were large, sclerosed, and tortuous, and the brachial pressure during this state of affairs was 140 mm. Hg. In one set of observations he found the pressure in the forearm was 30 millimetres higher than that in the upper arm. At the post-mortem examination the myocardium of the left ventricle was soft and fragmented, and that of the right considerably replaced by fat. Yet eminent clinicians write on blood pressure and heart power, estimated by the hæmomanometer, without a reference to the arterial wall. To him that position was beyond comprehension, and he left it to them as to whether they were prepared to accept it. He would now ask their attention to the other extreme, and could illustrate this by reference to two patients: the one convalescing slowly after an acute pericarditis was quite comfortable with a brachial pressure of 120 millimetres. When from constipation, an error in diet, or emotion the pressure rose 15 or 20 millimetres he got cerebral breathing and the pulse intermitted. When this rise took place the radial and the brachial arteries could be felt to have become smaller from hypertonic contraction—that was not an opinion, that was a clinical fact—the contraction threw an increased pressure into the aorta, and the feeble myocardium was embarrassed. The symptoms could be promptly relieved by giving a vaso-dilator. The second case was a medical friend, aged 80 years, who was having recurring attacks of angina pectoris minor. During these attacks the radials became small and the brachials also became contracted with a very poor wave in them; the pressure showed 140–150 mm. Prompt relief could be obtained by a vaso-dilator, and the pressure fell to 120–125. He found that they entirely overcame this vessel sensitiveness and removed the symptoms by the administration of a very small quantity of iodide of potassium. In both these cases the essential and fundamental clinical phenomenon was the arterial hypertonus, just as it was when the vessels were sclerosed. The constriction might or might not embarrass the heart. No one knew what the pressure was in the aorta; and with the armlet of the hæmomanometer they measured the changes in the arterial wall as well as the pressure inside it.

Dr. HARRY RAINY discussed the physics of the problem. When the pressure was applied by a band to the upper arm the tissues were assumed to be compressed as if they were a fluid, and therefore the constriction was transferred directly to the vessel. This was a point subject to discussion, and it was known that if there was much œdema the facts were admittedly erroneous. There was also the question of the rigidity or relaxation of the muscles. The question of the vascular walls was purely a physical one; a blood-vessel lived for long and experiments could be carried on with it after excision from the body. By perfusing certain fluids through it hypertonus could be set up. The condition of the vessel wall would cause change in pressure. The brachial pressure was a central one, and not far off that observed in the heart, while the pressure became enormously greater the smaller the blood-vessels became. The pressure was really peripheral to those which were investigated—viz., the brachials.

Dr. D. ELLIOT DICKSON (Lochgelly) said that he had investigated this problem in 500 healthy miners of all ages. In 456 there were thickened, easily palpated accessible arteries. In 116 youths under 20 years of age the radial artery was easily palpated, and only 44 miners had such arteries which could not be palpated. Only 31 showed a systolic pressure of over 140 mm., or 6 per cent.; there was no albuminuria. 469, or 94 per cent., had brachial pulse readings within normal limits, and nearly all had thickened arteries. The vessels were equally thickened from the periphery right up to the axilla. They felt like lead pencils and were almost incompressible. He thought that the cause of this thickening might be due to toxic conditions of their work underground. He had observed this thickening of vessels to occur within one year of their commencing underground work. He had determined that in the air of well-ventilated coal mines there was an enormous excess of carbonic acid gas; it might amount to 0·7 per cent., in comparison with the normal 0·03 or 0·04 per cent.

Dr. H. OLIPHANT NICHOLSON spoke of the blood pressure in pregnancy. He said that all the conditions present during the later stages of pregnancy might be thought to favour increased blood pressure, but his observations showed that there was no definite rise of blood pressure until the commencement of labour pains. The uterine contractions raised the pressure, and this rise increased during the expulsion of the child. Operative procedures still further raised the pressure, even though the patient were anæsthetised. After the third stage of labour there was a distinct fall in pressure, but after the third day of the puerperium there was a definite rise. If there were a continuous rise above 130 mm. one might suspect eclampsia. The blood pressure was usually higher in primiparæ than in multiparæ. As a result of pregnancy a vaso-constricting substance was retained in the system and accumulated to a dangerous amount in eclampsia. It caused the albuminuria and suppression of urine by altering the circulation through the kidneys. This substance was probably elaborated from the placenta. Owing to this widespread constriction of the arteriole field much extra work was thrown upon the heart.

Dr. THEODORE SHENNAN said that in thickened arteries which were calcareous a constant feature was present—viz., the absence of this calcareous change at the flexures. At Munich the greatly dilated heart and arterio-sclerosis of vessels so often met with at post-mortem examinations were attributed to the excessive amount of beer drunk. The viscosity of the blood seen in cases of polycythæmia where the heart was not hypertrophied might be due to greatly sclerosed conditions of the coronary arteries.

Dr. EDWIN MATTHEW referred to drugs employed to reduce arterial blood pressure, and said that with the exception of the nitrites and iodides they were useless. It was said that iodides acted by reducing viscosity or that they affected the nutrition of the vessel wall, or that they stimulated thyroid secretion. Iodides were useful in cases of high blood pressure with no arterio-sclerosis, and this was where they found their true action. Iodides were pure vaso-dilators just as nitrites, and acted in no other way. Iodide should be given in minimum doses of 10 grains thrice daily, rapidly increased for some days, and then decreased. It had to be remembered that many organic preparations of iodine contained only 2 grains in each dose.

Dr. HENRY M. CHURCH had found the test for high blood pressure a most useful one as regards therapeutics. The time at which the pressure was taken was important; before breakfast the pressure might be 15 to 20 mm. lower than after, and the same occurred before and after smoking, taking a hot bath, &c.

The PRESIDENT said that he never could understand how it was said that the condition of the vessel wall had no effect on the blood pressure. One might have thickened arterial vessels without any obvious rise in the blood pressure owing to parts of the vessel being left elastic. He had great difficulty in accepting Dr. Russell's view that the brachial and radial arteries from a condition of spasm could give rise to such high readings.

SCOTTISH OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

Exhibition of Cases.—Double Frontal Sinus Disease.—Purulent Labyrinthitis.

THE first meeting of this new society was held on Nov. 11th at the Royal Infirmary, Edinburgh, under the chairmanship of Dr. A. LOGAN TURNER.

Dr. W. G. PORTER showed a patient two and a half years after Operation on the Right Labyrinth. Granulations were removed from the region of the horizontal canal, but the remaining canals and the cochlea were not interfered with. The vertigo had disappeared and the patient could follow his employment, but complained of severe tinnitus. It was a

question for discussion whether any further surgical treatment should be carried out.—Dr. J. KERR LOVE and Dr. THOMAS BARR advised against this, and Dr. J. M. FARQUHARSON suggested the use of the high-frequency current and injections of fibrolysin.

Dr. PORTER reported the case of a patient with Clonic Spasm of the Right Vocal Cord and Soft Palate. The movement of the cord consisted of a rapid adduction and a slower abduction, and the rate was about 150 a minute. It was thought that the phenomenon was due to bilateral cerebral disease probably associated with arterio-sclerosis. The patient died suddenly, but no post-mortem examination was obtained.

Dr. J. D. LITHGOW read notes of a case of Double Frontal Sinus Disease with cerebral involvement. There was a deficiency of the cerebral wall of the right sinus and through this a fungating mass of necrotic cerebral tissue presented. Operation resulted in recovery.

Dr. J. S. FRASER reported a somewhat similar case which, however, ended fatally. In this patient the frontal sinus suppuration was complicated by extra- and intra-dural abscesses in the frontal region.—Dr. W. S. SYME, in the discussion, remarked on the increasing frequency with which reports of intracranial complications of frontal sinus disease were being published, and pointed out that in reference to the question of operation on the sinus this danger must be taken into account.—Dr. TURNER stated that, besides these two cases, one other, making three within the year, had occurred in the Edinburgh Royal Infirmary, and he drew attention to the statistics of Gerber, who has collected 150 cases of intracranial disease following suppuration in one or other of the nasal accessory cavities.

Dr. FRASER read notes of a case of Purulent Labyrinthitis with death from lepto-meningitis and gave a lantern demonstration. This showed the condition after operation. The vestibule was efficiently drained, but pus was present in all the coils of the cochlea, especially in the scala tympani, in the ductus endolymphaticus, and in the ductus perilymphaticus. The inflammatory process could also be traced to the internal auditory meatus from the scalæ of the cochlea along the branches of the cochlear nerve.—A discussion took place, in which Dr. T. BARR, Dr. KERR LOVE, and Dr. ALBERT A. GRAY took part, as to the indications for opening the internal ear spaces, the general opinion being that there was a tendency at present to too hasty interference with the labyrinth in aural suppuration.

Dr. FRASER showed a patient on whom Killian's operation had been performed for Unilateral Frontal Sinus Disease.

Dr. J. MALCOLM FARQUHARSON showed a patient presenting symptoms of Cerebro-spinal Rhinorrhœa. The condition followed a severe fall on the back of the head. There was a clear watery discharge from the right nostril presenting the characteristics and conforming to the tests of cerebro-spinal fluid. The patient suffered from severe headaches before the nasal discharge commenced. There was now complete double optic atrophy, and on the right side deafness of nerve type. The nasal passages were narrow but otherwise healthy.—In the discussion Dr. TURNER suggested the presence of an intracranial tumour and recommended that the patient should be examined by a neurologist, and Dr. SYME advised the performance of spinal puncture.

Dr. FARQUHARSON also showed: 1. A young woman who had sudden attacks of Angio-neurotic Paralysis of the Right Acoustic Nerve, associated with vertigo, deafness, severe tinnitus, pallor of the face, and nausea. Complete recovery followed in a few minutes. On examination the ear was normal. Under treatment by X rays and electric current to the sympathetic in the neck, with injections of 1 in 1000 adrenalin, the attacks had become less frequent and severe. 2. A patient on whom Rougé's operation had been performed to permit of the treatment of extensive Lupus of the Nasal Cavity. 3. A man with a large Epitheliomatous Growth of the Pharynx in whom treatment by X rays and radium had resulted in retardation and diminution of the growth with relief of pain, with, however, succeeding rapid extension. 4. A patient with a large Choanal Polypus on the left side. By posterior rhinoscopy its attachment to the posterior part of the middle meatus could be seen. (Dr. A. BROWN KELLY offered some observations on the relation of these polypi to the antral cavity.) 5. A patient with a Papilloma attached to the anterior third of the left vocal cord. 6. A man with Congenital Malformation of the Larynx. The left arytenoid prominence was much smaller than the right, probably from an absence of the accessory cartilages. The patient came to the hospital for some trouble unconnected with the larynx. The movements of the cord and the voice were normal.

Dr. TURNER showed a female with a large, tense, freely moveable Swelling in the Floor of the Left Nostril just inside the ala. A diagnosis of retention cyst of one of the mucous glands was made.—Dr. KELLY, Dr. R. FULLERTON, and Dr. FRASER agreed with this, and the first referred to a number of similar cases which he had seen, remarking on the much greater frequency with which, from his experience, they occurred in females than in males.

Dr. TURNER also showed: 1. A case of Laryngeal Tuberculosis in which an 85 per cent. solution of alcohol had been injected into the right superior laryngeal nerve for the relief of dysphagia. The patient had had two injections at an interval of three weeks with relief of the pain, especially since the latter injection. Unfortunately, the disease had extended to the left side so that the relief was only partial. (Dr. H. PETERKIN made some observations on this method of treatment.) 2 and 3. Two cases of Acute Lepto-meningitis complicating chronic middle-ear suppuration; recovery. One, a male aged 16 years, had had left middle-ear suppuration for years. A week before admission he was seized with acute symptoms, vomiting, headache, vertigo, and elevation of temperature. Lumbar puncture showed the cerebro-spinal fluid under pressure, slightly turbid, with excess of albumin. A radical mastoid operation was done, but no evidence of inner ear disease was found. Two days later he had rigidity of the neck, double Kernig's sign, severe headache, and high temperature, but no optic neuritis. A second lumbar puncture was done, and from the fluid withdrawn streptococcus pyogenes, bacillus proteus, and a Gram-positive anaerobe were grown, and the same organisms were found in the discharge from the mastoid. Antistreptococcic serum was injected into the spinal canal on two occasions, and subcutaneously on five, and spinal puncture was subsequently performed. At the end of three weeks all the symptoms had disappeared. The second case, a male aged 29 years, was somewhat similar except that in him in the left, the diseased ear, there was evidence of vestibular impairment, the caloric reaction being negative, and there was spontaneous nystagmus towards the healthy side. The cochlear nerve remained active. Symptoms of meningitis showed themselves, but there was no optic neuritis. Lumbar puncture showed fluid under pressure and turbid, containing polymorphonuclear leucocytes, lymphocytes, and degenerated epithelial cells. A radical mastoid operation was performed and a cholesteatoma evacuated. Openings were found in the external semicircular canal and in the oval window, discharging dirty fluid. Drainage was established. A second lumbar puncture showed Gram-positive and Gram-negative bacilli and Gram-positive cocci. The mastoid and inner ear secretion showed streptococcus pyogenes and a diphtheroid bacillus. Lumbar puncture was performed on several occasions and antistreptococcic serum was injected into the spinal canal and subcutaneously. Gradual improvement and ultimate recovery resulted.—Dr. J. STODDART BARR and Dr. SYME discussed these two cases.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A clinical meeting of this society was held at the Sussex County Hospital on Nov. 23rd, Dr. F. Hinds being in the chair.—Dr. W. Broadbent showed a case of Aneurysm in a woman. There was no history of syphilis, but she had been nursing a very stout lady for two years, which involved heavy lifting. She came complaining of cough, hoarseness, and pain in the chest. There was no difference between the pulses and the pupils were equal. There was perceptible pulsation in the first and second left spaces for 2½ inches to the left of the sternum, and this area was dull on percussion. There was a loud booming second sound characteristic of aneurysm, more marked in the first space, and heard even beyond the mid-clavicular line. At the aortic cartilage the second sound was loud and somewhat altered in pitch. The breath sounds were a little diminished on the left side owing to pressure on the left bronchus. There had been very numerous crepitations in the left lower lobe, probably caused by obstruction to the pulmonary vein. The left vocal cord was paralysed. The prognosis was bad owing to the structures pressed upon.—Dr. Broadbent also showed a case of Progressive Muscular Atrophy in a woman, and a case of Aortic Regurgitation in a man aged 24 years.—Mr. H.

Nethersole Fletcher showed a boy, aged 11 years, with a Swelling on the Lower Part of the Tibia. Four months ago he first noticed this just above the left ankle, which had gradually increased in size. There was no pain and no limping. The swelling was hard, slightly nodular and bossy, and not tender. It measured about 1½ inches each way. X rays showed that it arose from the region of the epiphyseal line of the tibia, and that it was in the main composed of fully formed bone lamellæ continuous with those of the cancellous tissue of the shaft of the tibia. The outer surface was capped with dense bone about a quarter of an inch thick. The fibula was directly pressed upon it, and over the area of pressure had been bowed outward and partly absorbed. It was probably a cancellous osteoma or a chondroma which had ossified growing from the epiphyseal line.—Dr. J. F. Gordon Dill showed a series of cases of Glycosuria in which a careful estimate had been arrived at of the amount of carbohydrates which each individual patient was capable of assimilating, and in which a reduction in the diet to this amount had been followed by a disappearance of the diabetic symptoms and of the sugar in the urine. He also showed a case in which there had been continual fever for four weeks with a positive Widal reaction in which after removal of some carious teeth the temperature became and continued to be normal and the patient recovered perfectly.—Dr. E. Hobhouse showed three cases of Paraplegia of different type. 1. A girl, aged 12 years, was admitted for a large abscess under the chin following impetigo. A sudden illness developed in hospital, with high fever, vomiting, and complete paraplegia in 24 hours. This was followed 48 hours later by loss of vision in one eye and 24 hours after in the other. The outline of both discs was blurred, but there was no definite neuritis. After three months the motor and sphincter paralysis was still complete and sensation greatly impaired, and all reflexes were absent, both superficial and deep. Both optic discs were pale, with clearly defined margins, but vision had greatly improved and she could read large print. Diagnosis: Myelitis of septic origin, involving the lumbar enlargement, and post-papillitic neuritis followed by atrophy, a very rare complication. 2. Paraplegia of the ordinary type in a female, aged 22 years. The onset was irregular, without fever. Diagnosis: Transverse dorsal myelitis (? specific). 3. A man, aged 22 years. Onset acute, with fever, headache, and vomiting. This was followed in from 12 to 24 hours by loss of power in the leg, not complete, and affecting some groups of muscles more than others—e.g., the extensors of the thigh and the peronei. Wasting was rather rapid and the response to the faradic current lessened, being about equal to that of the constant current. The sphincters were unaffected and sensation was normal. The knee-jerk was abolished, there was no ankle clonus, and the other reflexes were normal. Diagnosis: anterior poliomyelitis in the adult of the paraplegic type. Dr. Hobhouse also showed a case of the spleno-myelogenous variety of Leucocythæmia in a female, aged 40 years, of two or three years' duration. The remarkable feature in this case was the sudden drop in the number of leucocytes from 173,000 to 6000 and subsequently to 1600, with a complete alteration in the blood picture. The myelocytes dropped from 22·0 to 2·0, whilst the mast cells increased in about the same proportion, small lymphocytes also rising from 7·5 to 26. The general condition of the patient improved considerably, but there was little, if any, alteration in the size of the spleen, which filled half the abdomen. The treatment was first the injection of soamin three times weekly, which at the time seemed to have no effect, followed by the administration of liquor arsenicalis in increasing doses till 10 minims three times daily were being given. This was discontinued on the progressive fall of the leucocytes and iron substitu'ed.—Dr. Donald G. Hall showed a case of Leontiasis Ossea in a woman aged 72 years. The characteristic changes were present in the bones of the face, and the new bone had invaded the nasal and oral cavities. The patient also showed great thickening of the femora, tibiæ, and fibulæ. The probable pathology in this case was a progressive osteitis due to tertiary specific disease. Photographs and skiagrams of this patient were shown. Dr. Hall also showed a man, aged 46 years, suffering from Pulmonary Osteo-arthropathy, secondary to bronchiectasis of long standing, and two cases of Insular Sclerosis, the first in a man, aged 32 years, with a two years' history of difficulty in walking. This patient had temporarily improved to a marked extent. The second example was in a woman, aged 32 years, with a history of six years' duration, and exhibiting all the symptoms of the disease in a much more advanced stage.—Dr. C. F. Bailey showed a case of well-marked Keloid of the Face and Hand following burns.—The following specimens were exhibited.—Dr. Dill: A Stomach showing a large Malignant Ulcer, which had perforated a vessel causing profuse melæna.—Mr. R. F. Jowers: A specimen of Twisted Ovarian Cyst from a child aged 10 years, which had given rise to symptoms simulating appendicitis. He also showed a Gall-bladder which he had removed for primary carcinoma.—Dr. Hobhouse: A Blood Film from a case of Spleno-medullary Leukæmia, showing polymorphs, myelocytes, and mast cells; also a Liver from a case of Cirrhosis in a girl aged 20 years. The liver was embedded in a mass of adhesions of peri-hepatitis. There was multi-lobular cirrhosis and very little normal liver tissue. A microscopic specimen of the same was exhibited.—Mr. Fletcher: A specimen from a case of Malignant Ulcer of the Stomach, spreading from the duodenum for one and a half inches and causing no symptoms; also a specimen of Sarcoma of the Penis, with microscopic slides of the same and of the secondary growths in the glands. It was a mixed spindle and round cell growth, originating in the corpus cavernosum, and was covered by normal epithelium.—Dr. E. F. Maynard: A photograph and specimen of a Glandular Mass from a case of Lymphadenoma.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 25th, Dr. W. H. Cheetham being in the chair.—Dr. W. H. Maxwell Telling read a paper on Nodular Fibro-myositis, and pointed out its identity with so-called chronic muscular rheumatism, the underlying pathology of which was an inflammatory hyperplasia of the fibrous tissues with a certain amount of exudation. He drew attention to the neglect of this condition by English authors and insisted that the only curative treatment of these cases was massage. He quoted a number of cases which illustrated both the severity and protean manifestations of the disease as well as its amenability to treatment by massage properly and skilfully applied.—Mr. J. Stewart showed a specimen of Inverted Meckel's Diverticulum from a child, aged 5½ years, who was seen at the end of 78 hours suffering from signs of intussusception. On opening the abdomen gangrenous-smelling fluid escaped in large quantity. There was an enteric intussusception, which by coaxing was reduced with the exception of a small truncated mass inside the gut. This was seen to be a Meckel's diverticulum. An incision was made in the gut below this; it was drawn through the incision, tied and cut off, and the wound closed. The child died.—Dr. C. Oldfield showed a Fibroid Tumour of the Uterus of unusual appearance. It looked like adipocere; under the microscope the muscle outlines and nuclei could be seen, but staining was faint. Oöphorectomy had been done 17 years before; this did not relieve other symptoms than menorrhagia and distressing pain, and urinary symptoms had called for radical treatment. No change in the size of the tumour resulted from this oöphorectomy.—Mr. W. Thompson showed a Calculus removed from the Left Ureter at the back of the Iliac Crest. A plum stone was removed from the colon which was temporarily mistaken for the calculus in the ureter.—Mr. B. G. A. Moynihan showed a series of specimens from a case of Cholecystectomy, three of which illustrated a difficulty and a danger in the operation. In these three a portion of the hepatic duct had been removed with the gall-bladder. It was shown by reference to the specimens that a distortion of a distended hepatic duct might result from the cicatricial contraction of a gall-bladder, the seat of repeated inflammation. The gall-bladder became then broadly sessile, and in its pedicle the hepatic duct was drawn up. The defect could be remedied by suture over a catheter pushed upwards from the common duct.—Mr. J. F. Dobson showed a specimen of Meckel's Diverticulum and Peritonitis, with resection of the diverticulum, drainage, and recovery.—Dr. Telling showed a Factitious Dermatitis in a girl aged 18 years. By rubbing with a wet finger she had produced oval lesions about 1 inch to 1½ inches looking like patches of ordinary moist eczema. The distribution of these extended from below Poupart's ligament to the

dorsa of the feet and was on the anterior surface of the limbs. There were no other lesions. The first lesion appeared three months before. Since that date there had been one or two fresh lesions regularly every day, and the lesions were almost identical in size and shape and practically equidistant from each other. No treatment was adopted, the girl admitting that they were self-inflicted.—Cases and specimens were also shown by Mr. E. Hawkesworth Hackett, Dr. Alexander Sharp, Mr. H. Littlewood, Dr. T. Wardrop Griffith, Mr. G. Constable Hayes, Mr. H. L. Flint, Dr. J. B. Hellier, and Mr. Stewart.

HARVEIAN SOCIETY OF LONDON.—A meeting of this society was held on Nov. 24th, Dr. M. Handfield-Jones, the President, being in the chair.—Dr. Sidney P. Phillips read a paper on Fevers from the Standpoint of the Clinician. Dr. Phillips drew attention to the declining mortality from infectious fevers as evidenced by the Registrar-General's returns, and pointed out that this was partly due to a decreased incidence of these diseases and partly to a decreased case mortality. Speaking of rötheln, he considered there were many cases in which the rash did not appear before the third day, and gave details of cases in his practice in which feverish symptoms of an influenzal type had been present for a few days before the rash. In the differential diagnosis between this complaint and measles he laid stress on the value of Koplik's spots. He had known cases of measles being mistaken for small-pox owing to the shotty feeling of the rash when it first appeared on the forehead. He had also seen pityriasis rubra accompanied by fever simulating the rash of measles. Amongst the sequelæ of the affection he drew special attention to tuberculous peritonitis. In speaking of mumps he read notes of some very severe cases in which maniacal symptoms obscured the diagnosis; the testicle was generally affected in these cases. He advised mercury in the treatment of mumps owing to its well-known influence on the salivary glands. Typhoid was one of the fevers in which there had been a decline in the mortality, but in this case mainly due to diminished incidence, the case mortality remaining about the same. He recommended whey and citrated milk; the latter, however, did not prevent thrombosis as a sequela, contrary to his expectation. He gave small doses of calomel as an intestinal disinfectant; it was not contra-indicated by diarrhœa or melæna; he recommended sanitas enemata and thought cold bathing impracticable in private practice. He had seen several cases of typhoid fever complicated by pregnancy; in the early months they generally aborted, in the later went to full time. Speaking generally, he considered that hyperpyrexia as a complication of fevers was always due to some local cause such as pneumonia, rheumatic fever, and in typhoid fever, perforation, and such causes should always be sought for. The combination of two exanthems in the same patient was no uncommon occurrence in the fever hospitals, however rare it might be in private. The following took part in the discussion:—Dr. T. Hartigan; Dr. C. O. Fowler, who thought that the cases of rötheln in which rash appeared on the third day might be cases of influenza accompanied by rash—he also laid stress on the importance, where cold bathing was adopted in typhoid fever, of thoroughly skilful lifting of the patient into and out of the bath; Sir John Broadbent, who mentioned cases illustrating the non-infectivity of the pre-eruptive stage of scarlet fever and also advocated the calomel treatment of typhoid fever; and Dr. G. de B. Turtle, Dr. E. Graham Little, and Mr. Albert Kisch.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on Nov. 24th, Dr. T. R. Bradshaw, the President, being in the chair.—Mr. K. W. Monsarrat showed a patient suffering from Osteitis Deformans. The patient was 40 years of age and a photograph taken at about the age of 21 showed that he was then quite free from any disease of the bones. The bones of the legs were markedly thickened and bent outwards, and there was a similar deformity in the bones of the forearms. There had been progressive enlargement of the head and there was a prominent median boss over the frontal and parietal bones. The right clavicle was greatly thickened. Several fractures had occurred after slight injuries.—Dr. R. M. Manwaring-White mentioned a similar case which had recently been under his care.—The President suggested the possibility of late rickets.—Mr. R. E. Kelly briefly described Mayo's operation for Hallux Valgus. He showed that the condition was essentially one of a long great-toe, and necessitated the removal of a large portion of the head of the metatarsal bone so as to reduce it in length. He then described the ingenious use of the bunion or adventitious bursa in forming a new joint. The case was illustrated by X ray photographs of the foot.—Mr. T. R. W. Armour alluded to the great danger of sepsis in the bursa, and said that he had had many successes with the older methods of operation.—Mr. G. P. Newbolt also spoke in a similar sense, and laid stress upon the importance in some cases of dividing the tendon of the extensor hallucis.—Dr. A. A. Bradburne read a paper on Incipient Glaucoma, its Diagnosis and Treatment. He laid the greatest stress upon the importance of the diagnosis in the earliest possible stage, and discussed in detail the ophthalmoscopic signs. He considered its division into primary and secondary forms, and pointed out that the recognition of the disease depended upon a knowledge of the effects of hypertension; he then considered the effects of this upon the several parts of the eye and described the objective signs. Mr. Bradburne mentioned the difficulties of treatment, the great importance of medical and preventive treatment, and described a modification of the ordinary iridectomy which he was in the habit of performing, which consisted in drawing a small part of the iris forwards and inwards before detaching it.—Mr. A. Nimmo Walker considered Priestley Smith's modification of Bjerrum's test for incipient glaucoma to be of value, and he now used it in his routine examination of patients. He was experimenting with Schioetz's tonometer, which he thought had come to stay, as it was more scientific and trustworthy than digital palpation. In regard to operative measures, he did not do iridectomy, which in his opinion was unnecessary and often useless; in acute cases he did cyclotomy, and in chronic cases sclero-corneal trephining, although his experience of this operation was comparatively small. The results, as far as they went, were encouraging.—Dr. K. A. Grossmann said that the symptoms could not be considered as pathognomonic when they occurred alone. He instanced a case where, with an apparently marked glaucomatous cup, the vision was normal as regards colour, form, and field. He maintained that the cause of glaucoma was not yet found. Of operative methods the iridectomy proposed by Graefe 60 years ago still was the best, though no one could explain why it was beneficial. He advocated this operation with a wide basal incision.—Mr. T. H. Bickerton alluded to the great difficulty there might be in deciding upon the proper treatment in a given case.

MANCHESTER DERMATOLOGICAL SOCIETY.—At a meeting held on Nov. 12th in the Manchester and Salford Hospital for Diseases of the Skin, all the members of the staff being present, it was unanimously decided to form a Dermatological Society in Manchester.—Dr. H. A. G. Brooke was elected President of the society and Dr. William Dyson honorary secretary.—Dr. R. B. Wild showed: (1) Hyperidrosis of the Forearm following a Fracture; (2) two cases of Tuberculous Lymphangitis; (3) an anamolous case of Pityriasis Rubra Pilaris with Ichthyosis; and (4) Morphœa.—Dr. G. H. Lancashire showed: (1) Lupus Vulgaris simulating Lupus Erythematosus; (2) Papular Eruption of the Neck of a man aged 24 years (for diagnosis); (3) Tuberculous Ulceration of the Upper Lip; and (4) Lupus Vulgaris, discrete nodules scattered over the face, with marked erythema and œdema.—Mr. L. Savatard showed: (1) Multiple Fibro-neuromata, with thickened cutaneous nerves; (2) Papular Tuberculide of the Face, which had cleared up after an attack of erysipelas; and (3) an extensive case of Lupus Vulgaris, which had remained well for several years.

COLONIAL MEDICAL SERVICE: WEST AFRICAN MEDICAL STAFF.—Mr. W. S. Snell, medical officer, Southern Nigeria, has retired from the service, and Dr. F. M. Simmonds, medical officer, Gold Coast, has resigned with a gratuity. Mr. W. H. G. H. Best and Dr. C. R. Chichester, senior medical officers, Southern Nigeria, have been promoted to Provincial Medical Officers. Mr. H. C. Jeffreys, formerly a medical officer in British Honduras, has been selected for appointment to the Staff and posted temporarily to Sierra Leone.

Reviews and Notices of Books.

Die Wassermannsche Reaktion, mit besonderer Berücksichtigung ihrer klinischen Verwertbarkeit. (Wassermann's Reaction, with Special Consideration of its Clinical Application.) Von Priv.-Doz. Dr. HARALD BOAS, I. Assistenten am Rudolf Berghs-Hospital für venerischen Krankheiten in Kopenhagen. Mit einem Vorwort von Geh.-Rat. Professor Dr. A. WASSERMANN. Berlin: S. Karger. Pp. 186. Price, paper, 5.60 marks; bound, 6.80 marks.

THE striking results of research upon the cause, diagnosis, and treatment of syphilis during the past five years when considered together afford one of the most notable instances of the rapid advances yielded to practical medicine by the application of scientific experimental methods. The successful inoculation of the disease upon apes by Metchnikoff and Roux in 1903, the discovery of the spirochæta pallida by Schaudinn and Hoffman in 1905, the evolution of Wassermann's serum test in 1906, and the remarkable work upon the treatment of the disease by Ehrlich and Hata during the present year by means of dioxydiamidoarsenobenzol, or "606," form a series of epoch-marking advances which are fresh in the minds of all. These observations are to some extent interdependent and complementary, which no doubt partly accounts for the great rapidity with which they have followed one another. Although there are many details which are yet obscure and require further investigations, systematic and laborious in nature, for their elucidation, it is perhaps not too much to hope that the final outcome will be to remove the diagnosis and treatment of syphilis from the realms of speculation and empiricism and to place them upon an assured scientific basis.

The diagnostic serum reaction, which is now generally known as Wassermann's reaction, was first published in the *Deutsche Medizinische Wochenschrift* of May 10th, 1906, by Wassermann, Neisser, and Bruck. It is in principle an application of the general phenomenon of deviation or fixation of complement first described by Bordet and Gengou in 1901, a fact which is perhaps less generally known than it should be. Since its first introduction Wassermann's reaction has been the subject of a very large number of researches by workers all over the world, and it has been modified in various ways, some of these modifications showing very marked differences from the original method. Consequently the literature of this subject alone is very considerable, and the statement that a given individual is the subject of a positive Wassermann reaction is often one that requires amplification before its exact value can be appraised, since the different modifications yield results of varying degrees of specificity as judged by the statistics of those employing them. A critical and authoritative consideration of the whole question is therefore desirable. This is afforded in the book before us, which has a highly commendatory preface written by Professor Wassermann himself, stating that the conclusions arrived at by Dr. Boas are in complete accord with the observations made in Professor Wassermann's own laboratory.

Dr. Boas first gives an interesting historical review of the observations upon this subject up to the present time, and explains very clearly the general principles of the method. He describes the modifications which have been introduced, and reviews the chief results obtained by various observers, referring briefly to some of the chief explanations offered of the phenomena. The technique of the reaction is then very carefully and fully described. The essentials, as in any instance of the Bordet-Gengou reaction, are an amboceptor, complement, blood corpuscles, antigen, and the serum of the patient. The first three comprise what is now generally known as a hæmolytic system, and the last two are the factors which serve to deviate or fix the complement, thus preventing hæmolysis and affording the visible basis of the reaction. The amboceptor used by Wassermann and also by Boas is the serum of a rabbit immunised for sheep's corpuscles, and inactivated by warming to 56° C. for half an hour. For complement fresh guinea-pig's serum is employed. The blood corpuscles used in the test are those of the sheep in a 5 per cent. dilution. The original antigen used by Wassermann and his co-workers was an extract of some syphilitic organ. The antigen generally employed by Dr. Boas has been an alcoholic extract of human heart, not necessarily from a syphilitic person, since it has been repeatedly shown that other substances than syphilitic extracts, such as lecithin, sodium taurocholate, &c., can act as effective antigens. The serum from the patient is derived from blood drawn from the ear or from a small vein. This should not be done in direct sunlight, and the serum should be inactivated as soon as possible by heating to 56° C. for half an hour. The mode of carrying out the reaction, including the titration of the amboceptor and of the complement, the preparation of the various dilutions and of the necessary controls, is described most clearly, and a method of quantitative recording of the results is outlined. Some of the numerous modifications of and substitutes for Wassermann's reaction are referred to, and Dr. Boas comes to the conclusion that the original reaction is the most satisfactory.

In order to appraise the value of the reaction Dr. Boas has carried out a large number of control observations upon diseases other than syphilis, especially upon those in which it has been affirmed by other observers that a positive reaction occurs. In scarlet fever it was stated by Much and Eichelberg that a positive reaction was found in 10 out of 25 cases. Dr. Boas finds that the reaction is occasionally present but that it is very transitory, and that its occurrence does not lessen the value of Wassermann's reaction. In cases of pulmonary tuberculosis, pneumonia, malignant growths, typhoid fever, and diabetes mellitus, in all of which a positive reaction has been described by other investigators, Dr. Boas obtained almost invariably negative results. In malaria positive reactions occasionally occur, in leprosy the tuberculous form often gives a positive reaction, the anæsthetic form but rarely does so. Similar positive reactions have been described in framboesia and in relapsing fever. Dr. Boas records 1064 control observations on normal individuals and on cases of other diseases than syphilis, and of these only one case—one of scarlet fever—gave a positive reaction. He therefore concludes that in countries other than tropical ones Wassermann's reaction is specific for syphilis.

A careful analysis of the significance in regard to diagnosis and treatment of a positive Wassermann reaction in cases of syphilis and of the various parasyphilitic conditions is given by Dr. Boas. With a doubtful primary sore, an absence of the reaction is not a proof of its being non-syphilitic, nor is a positive reaction indicative of anything more than that the patient is the subject of syphilis. In the secondary stage, the positive reaction is constant in cases which have not been treated, but it may be wanting occasionally in fresh outbreaks of secondary symptoms in cases which have been under treatment. Similar statements are made in regard to the tertiary stage, and in general it is maintained that the reaction is far more marked in cases which have not been treated than in those that have. In regard to latent syphilis, only a positive reaction can be taken as possessing any diagnostic value. It is stated that the occurrence of a positive reaction after treatment is an indication that a recurrence of symptoms will speedily occur, or, as Professor Wassermann

expresses it in the preface, a persistent positive reaction in a syphilitic person indicates the presence of spirochætæ in his organism. In general paralysis of the insane a positive reaction with the serum occurred constantly; it was also obtained with the cerebro-spinal fluid in 91 per cent. of the cases investigated. In tabes dorsalis all cases previously untreated by antisyphilitic drugs gave a positive reaction. Dr. Boas is careful to urge caution in the interpretation of a negative reaction, both in regard to diagnosis and prognosis of syphilis. He claims that the reaction is a valuable addition to our means of studying syphilis, and he suggests that it will find useful applications in forensic medicine, in the examination of wet-nurses, and in the investigation of candidates for life assurance who have had syphilis. This book affords an admirable analysis of the practical results of Wassermann's reaction, and, being furnished with a very extensive bibliography, should be of value both to bacteriologists and clinicians.

Spondylo-therapy: Spinal Concussion and the Application of Other Methods to the Spine in the Treatment of Disease. By ALBERT ABRAMS, A.M., M.D. Heidelberg, Consulting Physician to the Mount Zion and French Hospitals, San Francisco. Illustrated. San Francisco: The Philopolis Press. 1910. Pp. 400. Price $3 50.

A QUOTATION from the author's preface is the readiest way of expressing the point of view of this book. "The subject of spinal therapeutics has received less attention from the medical profession than it deserves. Even the laity know that cold applied to the back of the neck may arrest hæmorrhage from the nose, and that heat applied to the small of the back may hasten menstruation. The profound and far-reaching physiologic truths which underlie these simple phenomena have either been ignored or only given inconsiderate attention. ..... One of the author's truest motives has been to lift this whole subject of spinal therapy out of the low state in which it blunders onward, hitting or missing as the case may be, and rescuing it from the lowly esteem which physicians as a class have thus felt for it. He has endeavoured to put it in a place befitting its scientific importance, and to emphasise its great practical helpfulness in disease."

After a brief historical retrospect and an anatomical and physiological introduction, the author proceeds to discuss the subjective and objective symptomatology of affections of the back and to give a summary (by no means comprehensive) of spinal diseases and symptoms, from "litigation back" to "vertebral insufficiency." He then passes on to general spondylo-therapy, which includes acupuncture, counter-irritation, electro-therapy, exercises, hydro-therapy, psychro-therapy (freezing), thermo-therapy, and vibratory massage. Some of these are, in the author's opinion, much more serviceable than others; he assigns paramount importance to percussion, sinusoidalisation, and psychro-therapy.

Even allowing for the venial enthusiasm of the specialist, we admit a sense of astonishment, if not of bewilderment, at some of the author's methods and apparent results. His contention is, in a word, that certain "vertebral reflexes" can be elicited by tapping various vertebral spines. These "reflexes" consist in modification of the form and position and secondarily of the function of certain of the viscera, such as the heart, lungs, spleen, intestines, aorta, and bronchi. In addition, however, certain cutaneous and muscular phenomena can be produced by similar methods. When, then, we suspect disease, functional or organic, of any particular viscus or viscera, or of any system such as the vaso-motor, or when we are confronted with any sort of pain or neuralgia or paræsthesia, we must seek out the corresponding spinal segment or segments, thence the corresponding "spinal window" (point of exit of spinal root), and attempt to influence the latter by percussion, freezing, or sinusoidalisation. For erythromelalgia, acrodynia, aortic aneurysm, migraine, exophthalmic goitre, diabetes mellitus, coryza, cold extremities, vaso-motor symptoms of the neuroses, vascular hypertension, and certain toxic conditions—this is the author's inclusive list—he taps the spine of the seventh cervical vertebra. For asthma he applies the sinusoidal current over the fourth and fifth cervical vertebræ; for vascular hypotension, the four lowest dorsal vertebræ; for nervous diarrhœa, peristaltic unrest, entero-spasm, constipation, and meteorism, the eleventh dorsal spine; for hepatic toxæmia, the first three lumbar spines, and so on.

Some of the clinical records supplied by the author are startling enough and border on the incredible; for while the rationale of the method can be appreciated within certain limits, both experimental and clinical corroboration is required of much that is stated baldly if not tacitly assumed. Dr. Abrams frankly allows that his book is a pioneer effort and asks that it be judged as such.

American Practice of Surgery: A Complete System of the Science and Art of Surgery by Representative Surgeons of the United States and Canada. Editors: JOSEPH D. BRYANT, M.D., LL.D., and ALBERT H. BUCK, M.D., of New York City. Complete in eight vols. Profusely illustrated. Vol. VII. New York: William Wood and Company. Pp. 761. Price $7 per volume.

THE appearance of the seventh volume tells us that this great System of Surgery is drawing to a close. It contains much that is of interest, especially as it deals in great part with the surgery of the abdomen. The first section is by Dr. C. H. Peck of New York City, and treats of the surgical conditions of the pelvic and gluteal regions. In this the most important subject dealt with is the congenital sacro-coccygeal tumour. In a chapter entitled "Surgical Diseases of the Extremities" Dr. C. A. Porter and Dr. William C. Quinby of Boston, Massachusetts, have described those minor disorders which do not naturally fall into any of the other chapters of the work. Thus we find an account of X ray dermatitis, ingrowing toenail, subacromial bursitis, paronychia, and many similar affections. These are just the conditions which so often are omitted in elaborate treatises on surgery, and we are glad to see they have been dealt with adequately here. It is a useful chapter, and we agree with the treatment advised. On one point we should like an explanation. For hæmatoma of the quadriceps femoris the following treatment is given: "The patient should be kept at rest in bed for the first few days, and baking and moderate bandaging should be employed." We do not understand what is meant by "baking."

Surgical diseases and wounds of the abdominal wall have been dealt with by Dr. J. D. Griffith of Kansas City, who contributes an interesting account of desmoids of the abdominal wall, illustrated by two excellent coloured plates. In a chapter on the diagnosis of tumours of the abdomen Dr. Malcolm L. S. Harris, of Chicago, has described, as fully as the few pages allotted to him will allow, this difficult subject, but we think it would have been well to have allotted more space to it. In a chapter on abdominal section, by Dr. W. M. Mastin of Mobile, Alabama, the author discusses the site of incision and the mode in which incisions should be made. The question of drainage is also considered and the objections are mentioned, but we think that hardly sufficient stress is laid on the risks of the drain forming a channel by which the peritoneum may become infected. Some useful instructions are given for

the preparation of the patient for the operation and for the after-treatment.

The very important modern subject of the surgery of the pericardium and heart has been dealt with by Dr. R. G. Le Conte and Dr. F. T. Stewart of Philadelphia. The anatomical considerations are described; the authors recommend that the safest point for puncturing the pericardium is the fifth interspace close to the left edge of the sternum; they describe many of the incisions which have been recommended for exposing the heart and in discussing the relative merits of these they maintain that no definite plan can be laid down for all cases. The situation of the wound, the condition of the pleural cavity, and the degree of certainty of the diagnosis must influence the incision made. The subject of the arrest of hæmorrhage is fully considered. The suture of arteries and their anastomoses are also well described, and in the same chapter we find an account of the treatment of aneurysm.

Dr. A. J. Ochsner of Chicago has written on the surgical diseases of the stomach and œsophagus. The section occupies more than 100 pages and is almost a treatise by itself. The various methods of performing gastro-enterostomy and gastrostomy are described; the account is well illustrated, and a good description is given of the surgery of the œsophagus, but we cannot help thinking that some of the methods of dilating strictures of the œsophagus which are described are hardly worth the space allotted to them. Although many of them are exceedingly ingenious, the cases in which they are applicable are very few, and their value has yet to be proved. Dr. J. Charles Reeve, junior, of Dayton, Ohio, has contributed the section on the surgery of the diaphragm and subphrenic abscess. It is seldom that these subjects are described so thoroughly as here; the importance of subphrenic abscess is very great, and we are pleased to see that it receives this degree of attention.

Dr. A. J. McCosh of New York City has written on the surgical treatment of septic peritonitis. In describing the use of saline solution for irrigation of the peritoneal cavity we think it would have been as well to have mentioned how this solution should be made; it is not sufficient to say, "Salt solution in physiological strength." Tuberculous peritonitis has been discussed by Dr. Nathan Jacobson of Syracuse, New York. The author considers that the best results from operations for this affection are obtained when manifestations have become stationary. Dr. E. Wyllys Andrews of Chicago, Illinois, has contributed the article on hernia. He describes fully his original method of radical cure of inguinal hernia, and his method appears to have been the first in which overlapping of the cut edges of the fasciæ was considered of importance. Dr. McCosh has also written the chapter on diseases of the appendix, which represents the current views on this important subject, and it is especially good in that part which deals with the analysis of the symptoms which may be present with appendicitis. Dr. C. W. Oviatt of Oshkosh, Wisconsin, has contributed the section on the surgery of the intestines, omentum, and mesentery. It is well illustrated. The account of colostomy is hardly sufficiently detailed.

Dr. J. P. Tuttle of New York City, and Dr. S. T. Earle of Baltimore, have described the surgery of the anus and rectum, and they have acted wisely in commencing their articles with an account of the anatomy of this region. This article occupies nearly 200 pages, and is as satisfactory as the names of its authors would suggest. The authors speak very highly of the perineal operation for removal of malignant disease of the rectum, and they advise that whenever a rectal tumour cannot be removed by the perineal method it should be treated either by the abdominal method or the combined method. In this section we have a very satisfactory account of appendicostomy.

Technical Mycology: The Utilisation of Micro-organisms in the Arts and Manufactures. By Dr. FRANZ LAFAR. Translated by CHARLES T. C. SALTER. Vol. II., Eumycetic Fermentation. Part II., with 50 figures in the text. London: Charles Griffin and Co., Limited. 1910. Pp. 748. Price 18*s.* net.

THIS publication completes a series of three volumes upon a very interesting and important subject. The publication of the concluding number with index has been considerably delayed owing to a difficulty in obtaining the final sheets from the German publishers. Seven years have, in fact, elapsed since the previous volume was issued, a review of which appeared in our columns of July 11th, 1903, p. 104. This delay has perhaps not been without its advantages, as, for one thing, it has given the author an opportunity of bringing his materials into line with modern contributions. The importance of the subject grows rapidly day by day, for great departments of industry depend for their success upon an accurate knowledge of the life-history and habits of micro-organisms. The author possesses an intimate knowledge of the subject gained largely from the fact of his occupying the position of professor of fermentation-physiology and bacteriology in the Imperial Technical High School at Vienna, and he may be congratulated upon the completion of a work which, so far as we know, is the only compilation of its kind. In this he has had the advantage of the assistance given by some distinguished German authorities on the significance of fermentations. The volume before us contains five important sections of the subject of eumycetic fermentation, which are dealt with in the following order: Section XIII., Yeast Nutrition and Yeast Culture; Section XIV., Life-history and Variability of the Saccharomycetes, with a Classification of Saccharomycetes and Schizosaccharomycetes; Section XV., Morphology and Classification of Certain Technically Important Higher Ascomycetes and Allied Forms; Section XVI., General Morphology, Physiology, and Classification of Technically Important Budding Fungi of the Group "Fungi Imperfecti"; and Section XVII., the Enzymes and Enzymic Actions of Yeast. A consideration of these headings will indicate what an important number of technical applications are involved. To mention a few, the great brewing industry would soon bring disaster upon itself if care was not taken to select a healthy race of yeast; the manufacture of cheese is rapidly becoming a standardised and healthy process by paying attention to the habits of the organisms concerned in its production; the quality of tobacco, again, is largely a matter of organism activity; thousands of butts of wine have been spoilt by disregarding the exact conditions under which the organised activities convert the juice into wine; and oftentimes the grape harvest might have been saved from ruin if only preventive measures based on a knowledge of the nature of the attacks of disease had been applied. In short, there is a pathology of art and industry which, when it comes to be studied in all its details, promises to lead to a handsome reward in the shape of an assured yield of produce of a uniform wholesome character. The labours which help this movement forward need no commendation from us; we regard Professor Lafar's work as invaluable alike to the student and to the practical man.

Allen's Commercial Organic Analysis. Vol. III. Edited by W. A. DAVIS, B.Sc., A.C.G.I., and SAMUEL S. SADTLER, S.B. London: J. and A. Churchill. 1910. Pp. 635. Price 21*s.* net.

WITH each succeeding volume the reader of the original "Allen's Commercial Organic Analysis" will recognise the gradual insertion of the work of new hands and the disappearance of the school of the old master and his pupils. For our part we are sorry that some effort was not taken to

preserve the style and method of treatment outlined by the original author. As it is, the work is rapidly approaching a shape in which all traces of the original design are lost, and somehow there was an attractive personality about Allen's work which is missing in the new edition. He wrote his work, we may say, in the laboratory, for every paragraph appeared to be the result of practical personal experience gained at the bench, and when the laboratory student wanted information on experimental points he invariably found it—he was led straight to a trustworthy test, and was warned of fallacies which might arise in connexion with it. Mr. Allen, of course, took a strong practical interest in analyses relating to foods and medicines, and his experience on these points was valued; and we think we are right in saying that it was on account of this experience that his work enjoyed a considerable reputation. "Commercial Organic Analysis" is, however, a wide title, and we are not surprised that the technological or industrial side of the subject has demanded development. The present volume, for example, is almost exclusively technological or industrial, if we leave out the section on aromatic acids, in which certain drugs (e.g., oil of bitter almonds, tolu, and storax) have clearly to be discussed, and the salicylates in their rôle as preservatives of food. The rest of the chapters deals with hydrocarbons, bitumens, naphthalene and its derivatives, anthracene and its associates, phenols, aromatic acids, gallic acid, phthalic acid, and modern explosives. There is no relief from technology here, and the editors acknowledge their indebtedness to four technological chemists in America connected with coal and iron works, tar distilleries, and asphalt production. Dr. Leffmann has ceased to continue as American editor owing to pressure of work elsewhere, and he is succeeded by Mr. Samuel S. Sadtler of Philadelphia, who is responsible for the articles on bitumens, anthracene, and phenols. The subsection of the chapter on phenols dealing with phenolic disinfecting liquids is disappointing in analytical particulars, having regard to the considerable attention which this subject has received within recent years. On the other hand, in the section on aromatic acids there is recent and useful information relating to the detection and estimation of antiseptics in food.

There are yet five volumes to come, and a glance down the synopses of these shows that we may confidently expect a very interesting series of monographs written by a well-recognised authority in each case.

LIBRARY TABLE.

Bier's Hyperemic Treatment, in Surgery, Medicine, and the Specialties: a Manual of its Practical Application. By WILLY MEYER, Professor of Surgery at the New York Post-Graduate Medical School and Hospital, and Professor Dr. VICTOR SCHMEIDEN, Assistant to Professor Bier, University of Berlin. Second revised edition, enlarged. Illustrated. London and Philadelphia: W. B. Saunders Company. 1909. Pp. 280. Price 13*s.* net.—The value of the treatment introduced by Bier has received throughout the world due recognition, but there are still many who are not conversant with the methods of application of the treatment and who would be willing to employ it if they knew how to apply it. As was natural with a new method of treatment, somewhat extravagant claims were made at first by some of the exponents of the Bier treatment, and an entirely undeserved opprobrium which in some cases followed was due to the unintelligent application of the method. It is, therefore, in the mode of application of Bier's treatment that the great need for instruction exists, and we are glad to see that the exposition by Professor Willy Meyer and Dr. Victor Schmeiden has reached a second edition. It contains the information required in a more easily assimilable condition than do the original writings of Bier, and, moreover, it contains later applications of the method than are to be found in any other work. The book is well worthy of careful study by those who are only imperfectly acquainted with the subject, while a valuable bibliography concludes the volume.

Manuel de Neurologie Oculaire. Par F. DE LAPERSONNE, Professeur de Clinique Ophtalmologique, et A. CANTONNET, Chef de Clinique Ophtalmologique à la Faculté de Médecine de Paris. With 106 figures. Paris: Masson et Cie, 1910. Pp. 368. Price 6 francs.—The ever-growing specialty of ophthalmology is divisible into three branches—optic, surgical, and medical. The compactly and lucidly written volume before us is concerned solely with the third of these divisions, and commends itself alike to the oculist and the neurologist. Nor ought the limits of its serviceableness to be thus confined, for owing to an excellent index—a feature that does not characterise all the volumes produced by our continental *confrères*—it may be regarded as a dictionary of clinical ophthalmology wherein the general practitioner will find references to any symptom of an ocular or visual nature that he is likely to be confronted by. The first part of the book is analytical, and consists of an anatomical description of the different systems of the eye, motor, sensory, visual, vaso-motor, and secretory, each of which is followed by a corresponding description of the physiology, and finally of the physiological pathology, of the system. Thus there is no structure, peripheral or central, no function, simple or complex, no symptom of low or high level, that is not adequately considered. A medical review *d'ensemble* of this kind is not readily accessible in ordinary text-books, and the authors deserve hearty congratulations on the way in which their task has been performed. The second part of the book is synthetic: ocular and visual affections in diseases of the nervous system, the digestive, respiratory, circulatory, and genito-urinary systems are fully and concisely set forth, as also in various intoxications and infectious diseases. We can cordially recommend the volume to all who are interested in the scientific side of the subject, as well as to any who merely desire a work of reference for ocular or visual symptoms.

A Prescriber's Companion. By THOMAS D. SAVILL, M.D. Lond. Fourth edition. Revised by the Author, assisted by CHARLES F. HARFORD, M.A., M.D. Cantab., Principal of Livingstone College. London: Henry J. Glaisher. 1910. Pp. 59. Price 1*s.* net.—This little book contains a large number of convenient prescriptions, a list of the doses of the more important drugs, directions for preparing fomentations and baths, and many other things likely to be of use to the busy practitioner. The section on serum and vaccine therapy, though brief, is likely to prove useful; it was entirely rewritten by Dr. Savill within a few weeks of his death. Not the least valuable section is that dealing with the antidotes of the more common poisons.

The Science of Happiness. By HENRY SMITH WILLIAMS, M.D., LL.D. London and New York: Harper and Bros. 1910. Pp. 350. Price 7*s.* 6*d.* net.—We welcome the increasing popularity of the doctrine that the moral life, with its self-knowledge, self reverence, and self-control, is a sure high road to happiness. It is of good augury when the youth of a nation are taught that virtue is not a continual painful struggle after the unattainable, but rather the obedience to hygienic laws of life, which brings its own reward in lifelong happiness. The volume under review should have a wide circulation, because Dr. Smith Williams preaches healthy-minded obvious common-sense. His illustrations from physiological laws of health are just and practical, his examples from history are apt and to the point, he has not weighted his matter with descriptive methods culled from Yogi

practices or mystic auto-suggestive repetitions of absurd phrases. He discusses his subject under four headings—(1) the physical aspect of happiness, which involves obedience to laws of health; (2) mental (education of the memory and reason); (3) social; and (4) moral. He resembles his compatriots in that he advises the frank pursuit of material success. Time alone will show whether this modern philosophy will stand the test of the suffering and the pain and the self-sacrifice which the wisdom of the ages tells us are real and which have proved in the past to be the cleansing fires necessary for the highest growth of the human character.

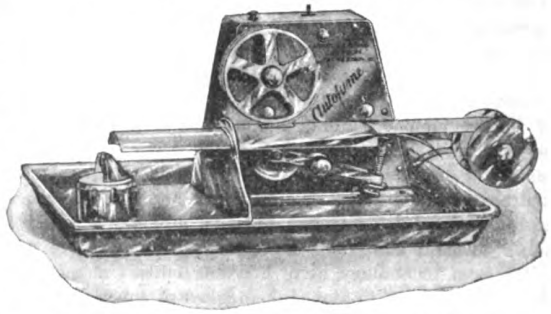
Science German Course. By E. W. PAGET MOFFATT, M.A. Lond., M.B., B.C. Camb. Second edition, enlarged. The University Tutorial Series. London: W. B. Clive. 1910. Pp. 243. Price 3*s.* 6*d.*—In noticing the first edition of this book we were able to speak very favourably of it, and this second edition is an improvement even on the first. A number of extracts from scientific works have been added, and we are glad to see that the small error we pointed out has been corrected. The importance of German as a language for all who study science can hardly be over-estimated, and no student can wish for a better introduction to scientific German than is provided by this book.

Fly-leaves from a Fisherman's Diary. By Captain G. E. SHARP. London: Edward Arnold. Pp. 175. 1910. Price 5*s.*—Fishing as a recreation is so much in vogue among medical men that in recommending this little book in our columns we are addressing many who know already how to throw a line and are sensible also to the keen yet soothing delights of the art. Captain Sharp's book is not a guide to the beginner; it appeals to those who are able to criticise the methods of a dry-fly man, but who yet are not above taking practical hints from one who is an expert in the process of getting fish, which some men who fish a great deal are not. It is an impulsive book, written obviously because the writer felt that it was almost his duty to try to communicate to others some of the "golden glamour which surrounds fishing as it does no other sport"; and being written in this spirit Captain Sharp becomes a successful author. In his little idyll he bubbles over with love for the country and all that dwells in it, and lights up the common elements of the river-side, which might otherwise pass unappreciated, with a spirit of phantasy. We assume that Captain Sharp is no poacher, but he is most humanly alive to all the devices of the illegitimate brotherhood; he fishes also in the spirit of the sportsman, with proper self-abnegation in restoring to its natural element the trout which, after a regretful caress, he finds to be below the standard regulation. Would that all sportsmen were equally conscientious! The book is furnished with some pretty photographs of the river and its surroundings by Mr. Parker.

New Inventions.

THE "AUTOFUME."

THIS is a very ingenious apparatus designed for the relief of certain respiratory disorders, and particularly asthma. The use of the "autofume" assumes that the fumes of a medicated paper affords relief to the patient, and the apparatus supplies the sedative fumes automatically and at regular intervals by means of a clockwork "feed." A glance at the accompanying illustration will make the working of the apparatus clear. A clock regulates the movement of the medicated paper between a spool on the right hand side of the apparatus and a night-light on the left side, which is of a special kind, and is provided further with a safe holder. When the paper comes into contact with the flame of the night-light a fume is thrown off, the character of which may be prescribed by the medical man according to the special needs of the patient. The paper burns regularly and uniformly like ordinary "touch paper." The combustion of the paper takes a few seconds and then a lapse of so many minutes follows according to the adjustment which has been made. The speed of the apparatus can be varied according to the size of the room and to the requirements of the patient. Two driving wheels are provided with each machine. One wheel has three spaces cut in the rim and when running at fast speed the paper takes 7½ minutes to reach the flame, burning 12 inches of paper in one revolution, while at slow speed 15 minutes are occupied in the paper reaching the flame. The



other wheel has two spaces cut in the rim, and when running at fast speed the paper takes 7½ minutes to reach the flame, then rests for 4½ minutes, and when running at slow speed the paper takes 15 minutes to reach the flame and rests again for 9½ minutes, bringing 8 inches of paper through in one revolution, or one-third less paper than with the other wheel. It is stated that the machine will work for a full nine hours if required, or it can be put out of action at any moment and restarted again just as quickly. The apparatus which we examined was submitted to us by Messrs. Arnold and Sons of 26, 30, and 31, West Smithfield, E.C., and the "autofume" was invented by an engineer who suffered severely with distressing asthmatic spasm.

WECHSELMANN'S APPARATUS FOR THE INJECTION OF "606."

THE complete success of the use of "606" depends in no small degree on attention to the technique. Already many methods of injecting "606" have been employed, and that devised by Wechselmann has been widely used. The apparatus for employing this method has been made by Messrs. Hirsch and Co., of 18, Lindower Strasse, Berlin N.39, and 236, High Holborn, London. The mode of using the apparatus is as follows. "606" is dissolved by grinding with 1–2 c.c. caustic soda in an agate mortar. A few drops of glacial acetic acid are added to produce a yellow paste, which is thinned by addition of distilled water and exactly neutralised to litmus paper by means of 1 per cent. acetic acid or 0·1 per cent. normal caustic soda. The resulting suspension is taken up by means of a pipette and introduced into the sterilised tube of a centrifuge. After rotation in the centrifuge, the tube is removed and the upper liquid poured off. The yellow deposit remaining in the tube is agitated with physiological saline solution and poured into a porcelain basin from which it can be drawn through the cannula into the syringe. The required amounts of distilled water and physiological saline solution should be *poured* out from the bottles into the two porcelain dishes. It is not advisable to insert the pipette into the liquids in the stock bottles, as, having once been in contact with the yellow paste, it is naturally apt to make the liquids turbid.

THE LANCET.

LONDON: SATURDAY, DECEMBER 10, 1910.

Pellagra Investigation.

IN the early part of the present year a committee of pathologists and epidemiologists was formed for the purpose of investigating the causation of pellagra,[1] and at a meeting in February it was resolved that Dr. L. W. SAMBON'S hypothesis—viz., that the disease was possibly due to a protozoal organism gaining access to the human body by means of some biting fly—should be investigated; an appeal was then made for the necessary funds. Dr. SAMBON proceeded to Italy in March, and recently presented an interim or progress report[2] on his researches. He claims to have established: (1) that pellagra is not due to the eating of maize, either sound or deteriorated, as hitherto almost universally believed; (2) that it has a striking, peculiar, and well-defined topographical distribution; (3) that its endemic foci or "stations" have remained exactly the same in many places for at least a century; (4) that its stations are closely associated with streams of running water; and (5) that a minute blood-sucking fly, of the genus Simulium, is in all probability the agent by which pellagra is conveyed. He has not been able to carry out the experimental work necessary to prove the agency of Simulium in the transmission of the disease, but has brought together a body of evidence sufficiently powerful, as he believes, to render it almost a certainty.

The various theories at present held as to the causation of the disease, generally connected with maize consumption, are stated, and dismissed as insufficient; there is no difficulty in this, because it is now known that the disease has been repeatedly observed in places where maize is neither grown nor eaten, and in persons who have seldom or never partaken of it. CASANA has stated this to be the case in Spain, and numerous instances are quoted by Dr. SAMBON from different provinces in Italy. It has, however, been claimed by the Italian supporters of the maize theory, the "zeists," that great benefit has resulted from the law of 1902, which (*inter alia*) prohibited the importation of damaged maize, and ordered that poor persons affected with pellagra should be given free meals for not less than 40 days twice a year. Professor G. SANARELLI, now Under-Secretary for Agriculture, reported in 1909 that the number of "pellagrins" within the kingdom had been reduced to barely 55,000 in 1905, showing a decrease of 17,000 in the previous six years; and that the deaths from this cause had fallen from 10,284 in the three years 1887-89 to 4649 in the three years 1906-08. Dr. SAMBON disputes the inference: there has certainly been a diminution in the general death-rate from the disease, but he points out that this has been in progress ever since 1898, long before the law was enacted. In Lombardy and Venetia, the two regions most affected, the number of pellagrins enumerated has dropped from 36,630 and 55,881 respectively in 1881 to 15,746 and 27,781 respectively in 1905. This is certainly a most remarkable and satisfactory improvement. But Dr. SAMBON points out that "one cannot exclude the intervention of new beneficial economic and social conditions known to all, which may have influenced the sanitary conditions of their populations" (these being Professor SANARELLI'S own words in 1907). On the other hand, in Umbria and the Marches there has been an increase from 872 to 4250 in the former region, and from 406 to 1436 in the latter; the disease is also extending in Tuscany and in Latium. Certain defects in administration are pointed out which would certainly seem to interfere considerably with any material improvement from the measures adopted. For instance, in the *locande sanitarie*, for the reception and feeding of patients, Dr. SAMBON states that in some not one-third of the inmates could be looked on as true pellagrins, and as a rule not one showed acute manifestations of the disease. As to the free issue of salt to poor pellagrins, Dr. SAMBON says that "it has not proved more effective in the prevention of pellagra than the capturing of birds."

Dr. SAMBON came to the belief that pellagra was a parasitic disease because of (1) the recurrence of the symptoms, notwithstanding removal from an endemic district; (3) its peculiarities of distribution and incidence; and (3) its symptoms, course, and morbid lesions. He considered it to be an insect-borne disease, because it is not contagious, cannot be accounted for on any food or water theory, is limited to rural districts, has special seasonal incidence (spring and autumn), and is practically restricted to one class of people—the field labourer. Some species of Simulium appeared to be the most likely carrier, affecting the same topographical conditions, and having the same seasonal incidence in the imago stage, and geographical distribution. Dr. SAMBON criticises the maps that have been published showing relative incidence of the disease, and asserts that they have been compiled from data not always comparable and often inaccurate. As a result of his own observations, he states that pellagra localities are, as a rule, "the narrower valleys of hilly and wooded country, trenched by swift-running streams infested with Simulium." He emphasises "streams of running water." Such, however, are not the conditions in the Landes of France, about Arcachon and elsewhere, where centres of pellagra have long existed. Dr. SAMBON also mentions its prevalence in the flat country about Padua, and in the Euganean Hills, a volcanic group noted for the scarcity of water. Later on he states that he invariably found pellagra to be present in "low, flat, or hilly, well-watered areas," but to be absent from "more or less massive mountainous areas."

Several points come out clearly from the report. One is the permanency of the endemic areas, as proved by records, there being practically the same disease distribution now as in past years; another is that towns are entirely exempt from the disease; a third is its practical limitation to field labourers, though occasionally found in prosperous farmers.

[1] See THE LANCET, Feb. 5th (p. 408), and Feb. 12th (p. 450), 1910.
[2] Progress Report on the Investigation of Pellagra. Bale, Sons, and Danielsson, 1910.

Although chronic in its course, pellagra is prone to recrudesce yearly, either in the spring or autumn or at both seasons; the earlier the warm weather sets in the earlier the pellagrous rash appears. With regard to contagiousness, most authors have denied it, and in Italy opinion is almost, though not quite, unanimous against it. According to Dr. SAMBON'S view, which agrees with the facts, the disease is not transmissible in places devoid of the insect carrier, but in endemic centres where Simulidæ are found it is highly infectious. As to the connexion with some species of Simulium, Dr. SAMBON has not been able to ascertain anything definite; neither has he or any other observer detected any parasite in the blood that might be considered the specific cause of the disease, which may be, as he suggests, some ultra-microscopical germ. It is the fact, however, that "*Simulium* is found, and abundantly found, in all pellagrous districts throughout Italy." We think that most will now admit that the maize theory is disposed of, and that Dr. SAMBON'S view furnishes, at any rate, a very good working hypothesis to go on in regard to preventive measures; meanwhile, hæmatology appears to be the field that requires to be worked over, as has been the case in malaria and sleeping sickness. Our acknowledgments are due to Dr. SAMBON for his zeal and labours in the field of preventive medicine, which indicate the direction of further advance.

Cranio-Cleido-Dysostosis.

IT is one of the most noteworthy facts concerning the development of much of the modern progress of anatomy, that a very great deal of what is most suggestive and helpful has come from the observations of clinicians, rather than from the investigations of systematic anatomists. The reason for this is not far to seek. The clinician in his study of the living, and in his comparison of long series of cases showing the effects of disease or the results of imperfect development, has gone back in his methods two centuries behind the modern specialised anatomist. He has returned to the methods of the physiological anatomist—the man who studied structure only as the handmaid of function, and who saw in the responsive living, rather than in the unresponsive dead, the true meaning of the myriad structural peculiarities of the human body. Pure descriptive anatomy must cease to be the sole stock-in-trade of the anatomist if he is to take his proper share in the advancement of his subject.

A recent contribution[1] towards the solution of vexed anatomical problems comes from Mr. D. C. L FITZWILLIAMS, who has had the daring to tackle one of the debated points of morphology most dear to the heart of the anatomist, and who has embarked on the enterprise armed with the knowledge gained by a careful analytical investigation of the recorded cases of cranio-cleido-dysostosis. This disease is a rare one, but its very peculiarity has made its literature somewhat extensive, and Mr. FITZWILLIAMS has been able to collect and tabulate 58 cases from published records, while he has added two cases of his own. His material is therefore sufficient to justify him in drawing conclusions as to the disposition of the characteristic lesions. Since the main features of the condition are seen in the failure of the proper development of the membrane, or dermal, bones, it is obvious that the examination of a long series of cases should furnish an index to the extent to which dermal ossification enters into the general make-up of the skeleton or into the composition of certain compound bones. The development of the membrane bones of the vault of the skull naturally suffers in this disease; but, as its name implies, the clavicle also shares in the dysostosis, and here the greatest anatomical interest in the condition lies. It is in connexion with the degree of maldevelopment of the clavicle that Mr. FITZWILLIAMS has done such good service in making some obscure points of morphology more clear. The question of the development of the clavicle has long been a vexed one. Is the clavicle developed in membrane, or in cartilage; and is it a bone added to the shoulder girdle, or is it a primordial bone, and one of the intrinsic elements of the primitive pectoral arch? These are the questions upon which, for long, anatomists have ranged themselves into different camps. GEGENBAUR has maintained that the clavicle is a dermal bone, which therefore cannot be regarded as a real part of the primitive girdle; but HOFFMAN and GOETTE have claimed the clavicle as primordial. The question is one on which opinion is likely to be divided when it is derived from a study of the development of the bone, for the ossification takes place so early, and is of such a hurried nature that observations on its exact sequence are necessarily difficult. The secondary question as to what part of the primitive shoulder girdle the clavicle represents, if it is in truth a primordial bone, has received as many answers as there are primitive parts to which to assign it. Upon the question of the ossification of the clavicle the study of cranio-cleido-dysostosis might be expected to throw much light; if it is a dermal bone its development will suffer, but if it is a cartilage bone its development may be expected to be found but little modified. In the series of cases collected by Mr. FITZWILLIAMS it was found that the condition most commonly met with was that the sternal end of the bone was present in some degree, but the acromial end was absent. This is a highly suggestive condition, for there are several anatomical distinctions between the two ends of the clavicle, and a partial demarcation is to be seen at times in the presence of vascular or nervous foramina. In those cases in which the outer extremity of the clavicle is undeveloped, it is generally found that a ligament continues the inner portion of the clavicle towards the scapula; but the curious fact about this ligament is that it does not replace the absent outer third of the bone and run to the acromion; but it becomes, as a rule, attached to the coracoid process. Two elements are therefore indicated in the clavicle, the older cartilaginous portion from the sternal end to the coracoid process, represented in the adult bone by the inner two-thirds of the bone and the coraco-clavicular ligaments; and a new and separate dermal ossification for the flat acromial end which stretches from the ligaments outwards to the acromion.

So much—and morphologists will allow that it is a great deal—the study of this interesting disease has yielded. For the rest Mr. FITZWILLIAMS maintains, and certainly correctly, that the basal centre of the coracoid process has the oldest

[1] See THE LANCET, Nov. 19th, 1910, p. 1466.

philogeny, and that by entering into the formation of the glenoid fossa it declares itself to be the true coracoid element of the pectoral girdle. This is the view that was maintained by the late Professor G. B. HOWES and substantiated by SABATIER. But this portion of the coracoid undoubtedly forms an anatomical continuity with the ligamentous bridge which continues the sternal end of the clavicle in cases of cranio-cleido-dysostosis, and therefore Mr. FITZWILLIAMS is probably correct in assuming that the whole continuity of this bar—the base of the coracoid, the coraco-clavicular ligaments, and the inner two-thirds of the clavicle—are the human representatives of the old coracoid element of the primitive pectoral girdle. There are obviously two elements combined in the human coracoid process, and the other element, which is represented by the free extremity, should correspond to the precoracoid element of the primitive girdle; and this element Mr. FITZWILLIAMS is inclined to continue as the costo-coracoid ligament. The pectoral girdle therefore, as a result of this very interesting investigation, would seem to have resolved itself into some order. The coracoid and precoracoid elements are satisfactorily located in the whole of their extent, and a host of trivial structures have been robbed of the unwarranted importance assigned to them by morphologists who are prepared to see resemblances and remnants in any and every trifling structure which happens to exist in the area in which some more important structure appears to be missing. Mr. FITZWILLIAMS will have the support of all anatomists in relegating the centres of ossification for the tip of the coracoid process to the class of "traction epiphyses" of PARSONS, for their development in connexion with the muscular origins should have been pointed out in the text-books of anatomy long ago. To the anatomist this paper will come as a lesson that it is not by any means only among the dead in the dissecting-room that the secrets of morphology are to be learned; we have ourselves published several papers during the last few months which have done much to make clear to morphologists the meaning of structures concerning which much has been written but little has been known.

Recent Studies in Epidemic Poliomyelitis.

WE have received a reprint of an interesting paper, published in the *Journal of the American Medical Association* of Sept. 24th, by Dr. SIMON FLEXNER of the Rockefeller Institute for Medical Research, under the title of "The Contribution of Experimental to Human Poliomyelitis." The suggestion that infantile paralysis might be a contagious disease was mooted more than a quarter of a century ago, and evidence in favour of this contention, both epidemiological and experimental, has accumulated and now resulted in complete demonstration. Dr. FLEXNER'S paper gives a most valuable and lucid summary of his own and other investigators' work upon this important question. Before 1907 epidemic poliomyelitis was rare in the United States, but since that year it has become widely distributed. It appears that before 1907 the disease had been increasing in frequency in Northern Europe, more especially in Scandinavia, where attention was early attracted to its investigation, and where the important work of WICKMAN laid the foundation of the recent advances. WICKMAN collected some closely allied conditions together under the generic term of Heine-Medin's disease, a name which is now extensively used in Germany. Recent studies in Scandinavia have shown that the contagion may be conveyed from the sick to the healthy by intermediaries, who are themselves healthy but act as carriers, and that the incubation period is a very variable one, ranging from 2 to 20 days, the average being from 8 to 10. Dr. FLEXNER states that in 1907 a pandemic of the disease arose, and that the United States, Austria, Germany, and France have been visited by epidemics since that date. In regard to the American cases, it is suggestive that the original outbreaks of the epidemic in the summer of 1907 occurred along the Atlantic seaboard, particularly about New York and Boston, which constitute the two main channels of entry of the immigrant streams from Northern and Eastern Europe. It is also highly significant that the second large isolated outbreak occurred about Minnesota, to which considerable numbers of immigrants from Norway and Sweden proceed.

Although the infectious nature of poliomyelitis has been suspected for so long, attempts to isolate the causal agent have until recently failed entirely or yielded organisms which subsequent research has proved to be due to contamination or to secondary infections. The recent epidemic spread of the condition, more especially during 1909, led to widespread activity in research in several countries in regard to this disease, with the result that almost simultaneously Dr. FLEXNER and Dr. PAUL A. LEWIS in America and LANDSTEINER and LEVADITI in France described an extremely minute or ultra-microscopic organism as the infective agent. It is this discovery which has proved of such interest and value in regard to our knowledge of this disease. Dr. FLEXNER describes the failure of the earlier attempts made by Dr. LEWIS and himself to transfer poliomyelitis from human beings to monkeys by the inoculation of fluids removed at different stages of the disease through lumbar puncture. It was not until September, 1909, that they were enabled to try the effects of the direct injection of an emulsion of the spinal cords of two fatal cases of the disease into the brain of monkeys, a procedure which was followed by paralysis after an interval of some days of perfect health. During the summer of the same year LANDSTEINER and POPPER also succeeded in inoculating monkeys with the spinal cord of a fatal case, but they made their inoculations into the peritoneal cavity and did not succeed in transferring the disease to other monkeys, whereas Dr. FLEXNER and Dr. LEWIS by their method were successful in transmitting the virus from monkey to monkey. The characters of the virus, so far as they have yet been discovered, are as follows: it is of very minute size and passes readily through the pores of the finest and densest porcelain filters, such as the Chamberland or Berkefeld. It thus belongs to the group of filterable viruses. It is not yet certain whether the virus has been seen. On examining under the dark field microscope an aqueous suspension

obtained by filtering an emulsion in distilled water of the spinal cord of an infected animal, bright dancing points devoid of definite size and form, and not truly motile, can be seen, but it is by no means established that these particles are the micro-organisms of poliomyelitis. The filtrates from such emulsions are very potent and very small quantities are sufficient to induce paralysis when injected into the brain of monkeys. The virus also appears to be highly resistant; it withstands glycerination for weeks or months, and also shows little reduction in potency after drying over caustic potash for weeks. If kept frozen at from 2° to 4° below 0° C. it retains its virulence for weeks, but it is destroyed by heating for half an hour at temperatures from 45° to 50° C. It can also be destroyed by 1 per cent. hydrogen peroxide solution, or by menthol. It is still not certain whether the virus has been cultivated outside the animal body on culture media, although there are some results which suggest that this is possible.

Observations made on the experimental disease in monkeys have resulted in some important additions to our knowledge of the pathology and morbid histology of the disease. The incubation period elapsing between inoculation and the onset of paralysis has varied from 3 to 33 days, the average being eight or nine. In regard to the symptoms, there is a striking similarity with those occurring in the human disease, both in regard to the severe cases and the abortive or evanescent attacks which occur during epidemics of the disease. The mortality among the inoculated monkeys is, however, much greater than that of the human cases, for whereas the death-rate in epidemics in man rarely exceeds 10 per cent., of the inoculated monkeys at least 50 per cent. died. The lesions found after death show very close correspondence with those hitherto observed in fatal cases in man. The changes are more marked in the spinal cord than in the brain, and are more pronounced in the grey matter and membranes than in the white matter. The meninges show diffuse infiltration with round cells, especially about the blood-vessels, of which the adventitial coat is alone involved, although the lumina of the vessels may be lessened by compression. The meningeal cellular infiltration does not lead to exudates on the surface, and is almost exclusively composed of mononuclear cells. The anterior and posterior horns of the grey matter are affected, the anterior more markedly. There are cellular infiltration and œdema of the perivascular spaces, and there may be hæmorrhages. The nerve cells undergo degeneration and necrosis. Changes of similar character but of slighter degree may occur in the white matter, in the brain, and in the intervertebral ganglia.

The pathogenesis of the affection appears to be that the virus gains access to the leptomeninges, setting up cellular infiltrative changes, more especially in the perivascular lymph spaces of the arteries entering the cord and medulla. These vascular lesions and their distribution determine the severity and degree of the involvement of the nervous tissues, and therefore also the extent and distribution of the clinical manifestations. The preponderating character of the lesions in the anterior horns is accounted for by the severe implication of the central arteries entering by the anterior median fissure, and the greater richness of the blood-supply to the cervical and lumbar enlargements explains their liability to severe lesions. Some interesting experiments were carried out to determine the possible modes of infection. Inoculation can be effected with greater or less success by various channels—viz., intracerebral, intraperitoneal, by subcutaneous injection, by injection in large nerves, and by some mucous surfaces. Certain theoretical considerations have led Dr. FLEXNER and Dr. LEWIS to suspect the naso-pharynx of being a common portal of entry of the virus in the human disease; they therefore endeavoured to put this question to the test in the experimental infection of the monkeys. They found that the mucosa of the naso-pharynx was readily permeable by the virus, leading to infection and paralysis. They also bring forward evidence which seems to indicate strongly that the nasal mucous membrane may not only be the channel of entry of the virus, but that it may also be a channel of elimination whereby the virus becomes spread externally. Investigation of the cerebro-spinal fluid by lumbar puncture shows that the number of cells it contains becomes progressively increased shortly after infection and before paralysis supervenes, with the result that the fluid becomes opalescent and may coagulate spontaneously. There is also an excess of protein as shown by NOGUCHI'S butyric-acid test. This cellular reaction is not purely lymphocytic since it includes the polymorphonuclear leucocytes early in the disease. These conditions do not last long, but are soon succeeded by a stage in which the fluid is clear, non-coagulable, and does not contain an excess of protein, while the lymphocytes alone are increased. Dr. FLEXNER suggests that these observations may prove to be of value in the early diagnosis of the human cases, if systematic examination be made of the cerebro-spinal fluid in epidemics of the disease.

The question of the production of immunity to the virus of poliomyelitis has also been studied by Dr. FLEXNER and Dr. LEWIS, and although their experiments have not as yet yielded a practical method applicable to man, yet they show that an artificial immunity can be developed, and they hold out hope for the future. They find that an undoubted attack of poliomyelitis, even when not accompanied by paralysis, produces a condition in which the monkey is refractory to re-inoculation. A condition of active immunity may also be induced by subcutaneous injection of the virus, either crude or modified by various reagents. It has also been shown that in the blood, both of human beings and of monkeys who have recovered from an attack of poliomyelitis, there exist neutralising principles for the virus. Experiments are in progress with the object of endeavouring to produce a serum for use in the treatment of the disease. We have said enough to show how important Dr. FLEXNER'S work is. It is impossible not to admire the remarkable energy and assiduity implied by the acquisition of such important results within the space of one year, while the direct and practical manner in which the problems have been attacked offers an admirable model for the scientific study of diseases of obscure pathology.

Annotations.

"Ne quid nimis."

THE MEDICAL FACULTY OF THE UNIVERSITY OF LONDON.

A MEETING of the Medical Faculty was summoned by the Vice-Chancellor of the University for Friday, Dec. 2nd. Only 29 members attended, and as a quorum is 30 the meeting could not be held. This is the fourth time in succession that a failure of meeting has resulted owing to the non-attendance of a sufficient number of members. The meeting convened for the 2nd inst. was for the purpose of electing or re-electing a dean. The faculty is therefore still without a chairman. This apathy on the part of those comprising the faculty is greatly to be deplored.

THE STETHOSCOPE.

IN his new volume, "Rewards and Fairies," Mr. Rudyard Kipling reintroduces the magical machinery which produced such a charming collection of ancient silhouettes in "Puck of Pook's Hill." The new series of ghosts of the past include Laennec and Nicholas Culpepper, the great herbalist. René Théophile Hyacinthe Laennec was born in 1781 in the beautiful old Breton town of Quimper, and on the north side of the noble cathedral stands his statue. Laennec was a surgeon in the Republican army in 1799 and served in the Morbihan. Mr. Kipling's sketch of the father of auscultation has charm and interest, and if he has taken liberties with facts we do not suggest that he has exceeded the romancer's licence. If we accept Forbes's careful biography of Laennec implicitly—and it was written immediately after the physician's death, being compiled from such excellent sources as the memoirs by Kergaradec and Bayle, supplemented by notes contributed by Laennec's cousin—the true story of Laennec differs from Mr. Kipling's presentment. From these biographers it seems proved that after 1799 Laennec was occupied in Paris at the clinic of La Charité, and up to 1818 was busily engaged in a constant output of important writings. In 1818 he broke down in health, probably from incipient phthisis, to which he ultimately succumbed in 1826. In 1821 he returned to Paris and resumed his post on the staff of the Necker Hospital. Mr. Kipling represents him as a prisoner in England at some date subsequent to the battle of Assaye, and describes him as experimenting with wooden stethoscopes (shaped liked trumpets) in a Sussex village. Laennec in his great treatise describes vividly his first use of an impromptu stethoscope, which consisted of a roll of paper, and the incident, he states carefully, occurred in 1816. The early history of the stethoscope is on the whole well authenticated. In the introduction to Laennec's "Diseases of the Chest" (second edition, 1826) various kinds of materials are mentioned as employed by the discoverer—paper, wood, glass, even goldbeater's skin—but they all had a cylindrical form, and there remains no doubt as to the final shape in which Laennec left the stethoscope, a cylinder of wood 1½ inches in diameter and 12 inches long, perforated by a bore three lines in diameter, and hollowed out at one end into a funnel-shaped cavity of the same depth as the external diameter of the cylinder. The late Sir George Burrows rescued from the wards of St. Bartholomew's Hospital the remains of such an instrument, which had been the property of Dr. Bond, afterwards Regius professor of medicine at Cambridge. Burrows and Bond were two of the first to study auscultation at St. Bartholomew's, when they were serving as clerks to Dr. Latham in 1827. Burrows's instrument had one part missing when it found its way into the Museum of St. Bartholomew's in 1887, and no instrument maker in London could be found capable of restoring it, but a complete example was accidentally discovered at Westerham in Kent by Mr. A. Maude, and this is now in the same museum. The construction of these models corresponds exactly with Laennec's own description.

THE USE OF HYDROCYANIC ACID GAS FOR KILLING RATS AND RAT FLEAS.

EXPERIMENTS have been carried out in the Bombay bacteriological laboratory by Captain W. D. H. Stevenson, I.M.S., with a view of ascertaining the value of hydrocyanic acid gas as a means of killing rats and rat fleas, more particularly in plague-infected houses in India. The results of these researches have been embodied in a preliminary report which is now published as No. 38 of the new series of Scientific Memoirs of the Officers of the Medical and Sanitary Departments of the Government of India. It appears that hydrocyanic acid gas has been of late years largely used in America, Australia, and South Africa for the destruction of insect pests on plants and fruit trees, and also for the "disinfection" of houses, jails, and railway carriages to rid them of vermin. In 1901, when plague was prevalent in Cape Colony, Professor W. J. R. Simpson suggested the use of this gas to cleanse houses infested by bugs, which were then under suspicion of conveying plague infection to man; but though experiments were begun at the time they were not persevered with. Captain Stevenson discusses the action of this gas on plants, animals, insects, food, and fabrics. Its use is not attended with any injury, even to the most delicate plant, rats and mice are readily killed by it, as also are fleas and other insects, their eggs and larvæ being quickly devitalised. Dried grain acquires no poisonous properties when exposed to its fumes, nor is the germinating power affected. Moist foods, on the other hand, such as milk, butter, and flesh, like water, absorb the poison. Unlike sulphurous acid, hydrocyanic acid gas has no deleterious action on metal or textile fabrics, but the fumes do not destroy the plague organisms or other bacteria. Its use, therefore, in connexion with plague is limited to two purposes—firstly, to destroy fleas on the clothing of dirty native travellers and, secondly, to fumigate the interiors of houses to destroy rats and their fleas. So far as the utility of the process for the freeing of clothing from fleas or other vermin is concerned, Captain Stevenson reports favourably upon it and regards it as a very cheap and efficient pulicide. Its use in this direction is, under proper precautions, attended with comparatively little danger to human life. But as regards the disinfection of rat-infested houses by this means the investigator comes to conclusions not so satisfactory. In isolated houses with clear space around them it might, subject to certain necessary restrictions, be usefully employed; but in crowded localities it cannot be safely made use of. The fumes are liable to spread to contiguous houses, and the gas may pass along rat runs from one dwelling to another. There is danger also to those engaged in carrying out the process, and skilled supervision is always essential. The fumes are so deadly that a whiff of fairly strong gas is liable to kill a human being; even a trace of hydrocyanic acid in the air that is breathed causes headache and nausea. It is recorded by an expert, as to an experiment conducted in America, that persons walking 100 feet away from the building that was being fumigated could detect the odour of the gas. The faint almond smell of the fumes and the taste at the back of the throat are only appreciated for the first few moments, the sense of smell and taste being seemingly paralysed by the diluted gas after the first few whiffs. Captain Stevenson, however, describes a delicate

test which can be applied to the air by those engaged in the process of fumigation before the room is re-entered; and if this test be applied the danger to the operators would seem to be much reduced. Further reports are likely to be issued; but so far as our present knowledge goes we fear that the possible dangers associated with the employment of hydrocyanic acid gas for the fumigation of the interior of houses are likely to prevent its use, save in exceptional circumstances. Like carbon monoxide, the risks to human life connected with its employment for destruction of rats and fleas would seem to be too great to permit of its general adoption.

SPONTANEOUS DISLOCATION OF THE HIP FOLLOWING ACUTE INFECTIOUS DISEASES.

SPONTANEOUS dislocation is a rare sequel of infectious diseases. In the *Boston Medical and Surgical Journal* of Nov. 3rd Dr. Charles Greene Cumston has reported the following case. A healthy girl, aged 9 years, had a severe attack of scarlet fever in March, 1910. She was in bed six weeks. When she began to walk in the latter part of May it was noticed that she had a decided limp and that the right leg was shorter than the left. She came under observation on the 27th. She was a well-developed girl with excellent muscles. The right leg was 4 centimetres shorter than the left and in a position of marked adduction with internal rotation. The movements of the hip-joint were much limited, rotation and flexion being almost absent. The trochanter major was 4 centimetres above Nélaton's line. There was no pain on pressure. Iliac dislocation of the femur was diagnosed. To reduce the shortening and to improve the position of the limb extension was carried out for five weeks with little or no improvement. Reduction was attempted under narcosis on July 3rd. After much manipulation the head of the bone was got into the acetabulum. A plaster cast was applied and the limb was placed in abduction with extension until August 17th, when the cast was removed. The joint was in good condition, but there was muscular atrophy. Electricity and massage were applied, and on Sept. 2nd the functions of the limb were perfectly restored. The hip is much more often the seat of spontaneous dislocation than any other joint. Of 80 cases collected by Degez, the hip-joint was involved in 74, the knee-joint in 2, and the ankle-joint in 1. Dr. Cumston suggests that this greater frequency of dislocation of the hip may be due to the youth of the patients, because the hip-joint has a great tendency to the development of pathological processes in early life. Of 90 cases, the patient was over the age of 20 years in only 11. The dislocation was iliac in 80, obturator in 6, and perineal in 1. By far the most important causes of spontaneous dislocation are typhoid fever and articular rheumatism. Then, in order of frequency, follow scarlet fever, influenza, small-pox, gonorrhœa, erysipelas, and puerperal fever. In typhoid fever the dislocation usually occurs during convalescence, but in articular rheumatism and scarlet fever during the progress of the disease. The pathogenesis of spontaneous dislocation has always been a puzzle. J. L. Petit, who in 1722 first described the condition in his famous work on dislocations, attributed it to effusion of fluid into the joint, which distended the capsule and caused softening and laxity of the ligaments, and finally pushed out the head of the bone. In a number of cases hydrarthrosis has been found on operation. But whether effusion alone is sufficient to produce dislocation is not certain. Verneuil and Reclus endeavoured to explain spontaneous dislocation by abnormal muscular contraction with paralysis and atrophy of antagonists. Kummer has pointed out that slight trauma probably plays a part. This is borne out by the fact that in several cases the dislocation occurred whilst the patient was being transported from one bed to another. The morbid anatomy has recently been studied. The capsule is only softened and distended, in contrast to what occurs in traumatic dislocation, where it is always ruptured. The nature of the contents of these joints has been the subject of much discussion. Hueter believes that all spontaneous dislocations of the hip are due to purulent infection, but serous or sero-fibrinous fluid has been found. The surfaces of the joint are only slightly changed, and in many cases have proved to be normal. On the other hand, marked changes have been observed. Cartilaginous growths have been found on the head of the femur during arthrotomy, and the cartilage covering the acetabulum has been sometimes eroded. If the dislocation is not soon reduced the joint cavity quickly becomes filled with connective tissue. Muscular atrophy and contraction have been found in a number of operations. Spontaneous dislocation is usually first discovered when the patient begins to walk. If discovered early, it can frequently be reduced. Otherwise reduction is difficult or impossible in consequence of the anatomical changes. The treatment should, in the first place, be preventive. If in fevers there has been a faulty position of the limb for some time, dislocation should be looked for when the patient is about to leave his bed. If permanent flexion or adduction occurs placing the limb in a correct position may prevent dislocation. If dislocation has occurred it should be reduced. If this is impossible the limb should be placed in the best position. If reduction cannot be performed by manipulation an open operation may be necessary.

THE MEAT-SUPPLY AT SMITHFIELD MARKET.

Dr. William Collingridge, in his tenth annual report to the Corporation of the City of London, which we have already reviewed at some length, presents some figures as regards meat-supply at the Central Meat Market, Smithfield, which make instructive reading at the approach of Christmas. It is pointed out that owing to the diminishing supplies from the United States the carcass butchers have been compelled to turn more attention to the English produce. It seems, however, that the uncertainty of the supplies from foreign countries, notably, perhaps, the Argentine Republic, will always prove a disturbing factor in the continued sale of home-grown produce, a fact which was so markedly illustrated in the Christmas of 1909. The effect of the Foreign Meat Regulations has resulted in the Dutch meat bearing the label of the Dutch examining officers, and it is reported that there is an evident desire on the part of the authorities to conform to the English requirements. The Danish meat is apparently going largely to Germany, and England can only have it when the Fatherland does not want it. With respect to the supply of cattle imported alive to Deptford, where it is killed, the report shows that the ever-increasing population of the United States holds out prospect that before many years have passed the Americans may cease to export their cattle to this country, and this fact may explain the activity of the Americans in developing their works in Argentine. Whatever may be the explanation, the fact remains that our live-cattle supplies from the United States and Canada are steadily falling and in 1909 there were but 205,000 bullocks from the States and 113,000 from Canada, while the imports of refrigerated beef from the United States are now only about one-third of what they were four years ago. But the compensating influences are already showing themselves, and the year 1909 witnessed the first arrival of chilled beef from Australia. Apparently this meat was not all of first-class quality and it showed much variety as

regards size. The length of transit was 62 days, the meat being preserved by sterilising the air of the meat chamber on the "Linley" system. There was also a considerable increase of frozen meat from New Zealand, Argentine, and Australia.

PHARYNGEAL PITUITARY BODY.

THE wide interest now taken in acromegaly has given rise to many recent investigations into the origin and nature of the pituitary body. As is well known, the glandular part of the pituitary arises as an outgrowth (Rathke's pocket) from the primitive mouth of the embryo. When the base of the skull is developed the stalk of the outgrowth is separated from the body of the gland and was supposed to completely disappear. In 1888 Killian observed that a small mass of pituitary tissue may be found in the naso-pharynx. Last year Dr. W. Haberfeld[1] showed that this small mass of pituitary tissue is constant in the human naso-pharynx, and represents part of the stalk of the pituitary outgrowth. The pharyngeal pituitary lies in the submucosa of the pharynx immediately behind the septum of the nose. The mass is of small size, about the size of a grain of rice. It is in close relationship with the tonsil of the naso-pharynx. At the last meeting (Nov. 25th) of the Anatomical Society of Great Britain and Ireland Mr. J. E. S. Frazer of King's College, Strand, showed by means of models and diagrams that the stalk of the pituitary outgrowth becomes associated during development with the posterior border of the nasal septum, down which it extends for a considerable distance. A specimen which Mr. A. R. Tweedie of Nottingham recently presented to the Museum of the Royal College of Surgeons of England also throws light on the relationship of the pituitary to the septum. The specimen shows part of the head of a child who lived for some weeks. The infundibulum of the pituitary extends into the posterior border of the septum of the nose, on which the pituitary body forms a tumour-like mass. The tumour was observed during life through a cleft in the palate, but fortunately no attempt was made to remove it.

THE TOXIC EFFECTS OF ASCARIDES.

IT has long been known that ascarides possess a repulsive irritating odour which becomes more marked after section. This odour, which has been described as pepper-like by von Linstow, produces marked toxic effects upon certain persons. These effects form the subject of an interesting note in the *Münchener Medizinische Wochenschrift* of Sept. 20th by Professor R. Goldschmidt of Munich, who himself is thus affected. He refers to the previous observations on this subject by Miram, Cobbold, Huber, Leuckart, Bastian, Raillet, von Linstow, Arthus and Chanson. Raillet himself suffered from suffusion of the eyes, sneezing, nausea, and swelling of the finger after section of some ascarides. Arthus and Chanson observed similar symptoms in three persons after dissecting these worms. They also showed that the cœlomic fluid of ascarides when injected into rabbits in doses of 2 cubic centimetres sufficed to produce death in ten minutes. Since Professor Goldschmidt found himself susceptible to the toxic effects of these worms he has made inquiries of other workers and been able to collect nearly 20 instances of a like susceptibility. He believes that some persons are permanently immune to these toxic effects and can work at the dissection of these animals with impunity. As a rule, however, most people suffer at first in only a slight degree, but the severity of the symptoms increases progressively with repeated attacks, so that several workers among Professor Goldschmidt's cases stated that they had been obliged to give up working at this subject owing to this cause. Professor Goldschmidt himself has now become so sensitive to this irritant that it is only necessary for him to go near where one of his students is working at the dissection of an ascaris to get severe symptoms, and it has now become a physical impossibility for him to work with this worm. The symptoms vary in individual cases. The most common are irritation of the eyes, leading to conjunctivitis and lacrimation. Other persons commence with sneezing, which goes on to a chronic naso-pharyngeal catarrh. Later stages may be those of catarrh of other mucous membranes, with troublesome cough and with asthma. Professor Goldschmidt suffers with severe attacks of asthma occurring every night for a week, these attacks appearing at the same time each night with great regularity, a fact also observed by Bastian. Some persons are highly susceptible, so that even the first attempt to work with these worms causes severe or even alarming symptoms. If any of the body fluid of the ascaris comes in contact with a sensitive surface, such as the conjunctiva, severe inflammation rapidly develops, and sometimes, as already mentioned in Raillet's case, the hands may swell. The ascaris megalocephala of the horse is much more irritant in its effects than the ascaris lumbricoides of man, a fact noticed long ago by Bastian, who was himself sensitive to the former but not to the latter worm. The nature of the substance leading to these symptoms is as yet uncertain. Weinland has shown that free valerianic acid is one of the end products of metabolism of these animals, and has suggested that this is the causal agent, a suggestion which Professor Goldschmidt does not accept. These observations are of considerable interest, since it is known that the emanations from some other animals may lead to attacks of asthma in susceptible persons, and Dr. Marcus, a colleague of Professor Goldschmidt, who suffers from the toxic effects of ascarides, points out the analogy of the symptoms with those of hay fever.

[1] Beiträge zur Pathologischen Anatomie, 1909, vol. xlvi., p. 133.

EARLY OPERATIONS FOR CATARACT IN FRANCE.

AT a meeting of the Société d'Ophtalmologie de Paris this autumn M. Terson made some observations on the operation for cataract as performed during the first half of the nineteenth century in France, and exhibited a painting which he had found in one of the rooms of the Musée Carnavalet, of which a reproduction is given in the October number of *Recueil d'Ophtalmologie*. This represents the results of an operation for cataract by Dupuytren at the Hôtel Dieu in presence of Charles X. in 1825. In the picture discovered by M. Terson the King with a group of officers are being conducted by M. Dupuytren through one of the wards of the Hôtel Dieu, and a patient on whom the great surgeon has operated has been unbandaged and is being told to look at His Majesty. She is holding up both hands in charmed surprise at the recovery of her vision. A Sister of Mercy and some surgeons and students are in attendance. The celebrated surgeon shows the triumph, complete and certain, of this surgical operation: little pain, no blood, and, it may be added, no vitreous humour. For it is evident that, although only 50 years after Daviel, it is not his extraction that has been executed. Dupuytren preferred depression to extraction; experience had shown him that the results of depression were more advantageous, and we find in his writings the statement, somewhat audacious, that this operation diminishes danger in proportion to the frequency with which it is repeated in the same individual. Few surgical proceedings are more interesting to follow than the vicissitudes of extraction during the first half of the nineteenth century. Undoubtedly following Daviel, a pleiade of eminent oculists, Pamard, Pellier, and so many others, the proceedings of which may be found

described and considered in the Cours d'Opérations de Pellier de Quengsy, established the supremacy of extraction. Some, nevertheless, depressed or extracted according to their view of the nature of the case. Then reaction took place, and the predecessor of Dupuytren at the Hôtel Dieu, Pelletan, considered the method by displacement was applicable to the larger number of cases. A little after Scarpa, Langenbeck, and others the fear of accidents led most surgeons to use the needle. Sanson and Gosselin appeared to consider the escape of the vitreous humour as one of the ordinary results of extraction. Demours considered extraction to be preferable when there was no contrary indication. Roux, a very skilful operator, considered depression as quite an exceptional operation. Velpeau held that if the dangers of extraction were more serious and more apparent, those of depression were more numerous and more real. Sichel himself was by no means an exclusive partisan of extraction, and maintained that the indication for the two methods depended on the nature of the cataract. Nélaton and Sédillot, with some restrictions and hesitation, recommended extraction generally. About 1865 depression was still practised by certain surgeons, as by Jüngken at Berlin, but depression, in accordance with De Graefe and his school, was almost entirely given up. It may be said, then, that whilst depression modernised by preliminary iridectomy may be found occasionally indicated, extraction has been preferentially performed by all the great ophthalmologists and by the larger number of great surgeons.

THE TREATMENT OF ULCERS OF THE LEG BY A PASTE OF GELATIN, GLYCERINE, AND ZINC OXIDE.

IN the *University of Pennsylvania Medical Bulletin* for October Dr. B. A. Thomas advocates the treatment of varicose ulcers of the leg by a paste of gelatin, glycerine, and zinc oxide as superior to all other methods. It may be remembered that this paste was introduced some years ago for the treatment of certain skin diseases, particularly eczema, by Dr. Unna of Hamburg, and has attained a considerable reputation. It does not appear to have been used by him for the treatment of ulcers of the leg, but several American surgeons, of whom it is not certain which can claim priority, employed it. The treatment, however, has failed to arouse the interest it deserves. From an experience of several years of out-patient work Dr. Thomas is satisfied that it is much superior to any other treatment. The paste is prepared as follows. Two parts of the purest gelatin are dissolved by means of a hot water bath in five parts of water. While the mixture is hot five parts of glycerine and two parts of zinc oxide are energetically stirred in until the whole is cool. In cases complicated by xerodermia, hyperplasia, pruritus, or fœtor Dr. Thomas adds a quarter of a part of carbolic acid. At room temperature the paste assumes the condition of table gelatin and may be preserved for some time. Before application the paste is liquefied in a hot water bath and cooled. In the meantime the leg and foot are thoroughly cleansed with soap and water (preferably tincture of green soap), alcohol, mercury bichloride (1 in 2000 to 4000). or carbolic acid (1 in 40). The ulcer is disinfected with peroxide of hydrogen and a solution of mercury bichloride or carbolic acid. The surface is thoroughly dried and the paste is applied over the whole surface from the metatarso-phalangeal articulations to the tubercle of the tibia. A layer of gauze bandage 3 inches wide is then applied, being cut at intervals to avoid excessive overlapping and wrinkles. Another layer of the paste is applied and a second gauze bandage, and so on until three or four layers of bandage have been applied, finishing with the paste. As the paste is rather sticky a layer of shellac may be applied for fastidious patients. A thin layer of non-absorbent cotton answers the same purpose. In many cases the dressing may be left undisturbed for from two to eight weeks, and when removed the ulcer will be found healed. But it is safer to ask the patient to return in two days. If there is then any evidence of discharge at the site of the ulcer, manifested by saturation of the overlying dressing, the dressing must be fenestrated, the ulcer cleansed, and a dusting powder, such as salicylic and boric acid talcum, supplemented by a simple gauze dressing, is applied. The patient should return twice or thrice weekly for renewal of the gauze dressing. Should the paste dressing become loose from subsidence of the swelling of the leg, it must be removed and a fresh one applied. Dr. Thomas has never found it necessary to scarify, curette, or excise the floor or edges of the so-called indolent ulcer, nor to apply a stimulant or caustic of any kind in order to promote healing. The primary indication in the treatment of varicose ulcer is to support and improve the circulation in the part. The paste dressing does this by furnishing a veritable new skin. It is freely pliable and slightly elastic, contracting somewhat after its application. These qualities cannot be ascribed to the ordinary bandage or even to the elastic stocking. A great advantage is that dressings are necessary only at long intervals, and the period of healing is shorter.

CHOLERA IN MADEIRA.

WE learn from our correspondent in Madeira that there is reason to hope that the invasion of cholera will not prove a lengthy one. The Lisbon authorities were in the first instance not over prompt, for they sent out a bacteriologist to investigate the suspected cases, but made no report upon what he found for a week. The Governor of Madeira then requested the assistance of Dr. Michael Grabham, and the vibrio was found in some abundance. During the six weeks since the first cases came under notice 40 to 50 cases occurred, with 20 deaths, but the authorities are working well, and it is hoped that the invasion has been successfully checked, although the number of cases is now much larger. The Royal Mail Steam Packet Company's steamers will not call at Madeira, outwards or homewards, until further notice.

Mr. Eben Henry Edwards, M.B., C.M. Edin., has been granted His Majesty's Royal Licence to wear the Insignia of the Third Class of the First Division of the Imperial Chinese Order of the Double Dragon, conferred upon him by His Majesty the Emperor of China.

Mr. Sylvanus Glanville Morris, M.D. Edin., has been appointed a Knight of Grace of the Order of the Hospital of St. John of Jerusalem in England.

Dr. Thomas Buzzard has been elected a Foreign Corresponding Member of the Société de Neurologie, Paris.

DEATH OF DR. AUGUSTUS HENRY BAMPTON.—Dr. A. H. Bampton died at his residence, Brookfield, Ilkley-in-Wharfedale, Yorkshire, on Nov. 26th, in his fifty-ninth year, from pneumonia after a short illness. Dr. Bampton was born in Devonshire and was formerly a lieutenant in the Royal Navy. On leaving the service he studied medicine and graduated M.D. and M.Ch. of the Royal University, Ireland, in 1879. After holding appointments at Westminster Hospital and the South Devon and East Cornwall Hospital, Plymouth, Dr. Bampton commenced practice in Plymouth, joining the late Dr. W. Bazeley in partnership. He was formerly assistant physician to the Plymouth Public Dispensary. About 20 years ago Dr. Bampton left Plymouth and practised at Ilkley, in Yorkshire. He was medical officer of health of Ilkley, and surgeon to the Ilkley Cottage Hospital. Dr. Bampton contributed several articles to THE LANCET and other medical journals.

THE LONDON COUNTY COUNCIL AND THE ROYAL COMMISSION ON THE FEEBLE-MINDED.

THE General Purposes Committee submitted to the London County Council on Dec. 6th an exhaustive report, prepared by four or five of the committees most directly concerned, in which the recommendations of the Royal Commission on the Care and Control of the Feeble-Minded were examined in their bearing upon lunacy administration in London. The Commissioners in their report admitted that the position of London in regard to the care of the mentally defective was exceptional, not so much by reason of insufficiency of accommodation as through the lack of any machinery for readjusting the relations of the various authorities concerned —viz., the guardians, the Metropolitan Asylums Board, and the Education and Asylums Committees of the County Council. This division of work involved also a division of authority and a lack of coördination fatal to any successful treatment of the problem, and, holding this view, the Royal Commission specially considered methods of setting up administrative machinery in London.

The report of the Royal Commission was dealt with in THE LANCET at the time of its publication in 1908.[1]

The New Authorities to be Set Up.

On the recommendation of the Commission that there should be "one central authority for the general protection and supervision of mentally defective persons" the Local Government Committee raised the question whether this work could not be undertaken conveniently by the Local Government Board, suggesting that the overlapping of jurisdiction was as great an evil in Government Departments as in the case of local authorities. In regard to the work of the local authority under the Commission's proposal, the Local Government Committee urged the desirability of so constituting the Statutory Committee for the Feeble-minded that when the recommendations of the Poor-law Commission came to be dealt with the nucleus of the organisation for public assistance would be already in existence. Although the powers proposed to be given to the Statutory Committee were not exclusively of the nature of public assistance, in practical administration there would be very considerable similarity, and the two matters were so interwoven that if the two services were placed under separate authorities there would be a danger of overlapping and friction. The difficulty would also occur of finding sufficient members to man two important statutory committees of this kind.

Importance of a Comprehensive Scheme.

The Asylums Committee was of opinion that the recommendation of the Commission with regard to "friendly visitors" to advise as to training, education, or marriage was a serious and common-sense attempt to deal with a very complicated phase of the lunacy question—the inter-marriage and consequent propagation of imbeciles. The committee had been endeavouring for years to secure the establishment of receiving houses and receiving wards, and was therefore much gratified to find the Royal Commission recommending their compulsory establishment. Generally speaking, the Commission gave the proposed committee a very wide discretion, and only experience could show what would be the best course to pursue under certain conditions. The Asylums Committee laid stress on the importance of the question of insanity and feeble-mindedness being comprehensively dealt with. At present the ascertainable body of insanity was obscured by a wide fringe of feeble-mindedness which could not be dealt with adequately under existing powers, and from this fringe lunatics, officially recognised as such, were being recruited constantly. Unless drastic measures were adopted the only prospect of elimination of future generations of the insane and degenerate stock seemed to lie in such measures as suggested by the Royal Commission.

Mentally Defective Children and Inebriates.

On that portion of the recommendation of the Commission dealing with mentally defective school children the Education Committee agreed that a register of mentally defective children should be kept, and thought that the duty of compiling it should fall on the Education Committee, and that some effective means should be devised to prevent duplication or conflict of medical certificates. The committee also agreed that observation centres or homes for scientific and medical differentiation should be established, but was of opinion that the provision of intermediate schools for dull or backward children needed careful consideration, and perhaps an experimental school should be established in the first instance. As to what authority should be responsible for the education and training of mentally defective children considerable difference of opinion existed, but the Education Committee had come to a conclusion in agreement with the Royal Commission that the proposed central authority should be responsible for both children and adults.

The Asylums Committee and the Public Control Committee were in general accord with the recommendations of the Commission with regard to criminal mental defectives and inebriates. The Public Control Committee, however, pointed out that if the recommendation that such inebriates as were mentally defective should be dealt with under the proposals of the Commission a heavy additional financial burden would fall upon local authorities.

The Cost of the Proposals: Respective Shares of the Government and Local Authorities.

The probable effect of the Commission's proposals on local taxation was next considered. The Local Government Committee considered both the methods suggested by the Royal Commission for readjusting local expenditure and exchequer contributions to be open to objection. The block grant system would be unfair to London and other urban areas where the higher rateable values necessitated a higher rate of expenditure. The second method—of adding a new grant for new cases to the grants now paid—would complicate still further the system of imperial subventions. The proposal to make grants for a limited time towards the provision of accommodation would give most assistance to authorities which had been most backward in making proper provision for the mentally defective. It would be more equitable to base the grant on the total accommodation provided.

The Finance Committee pointed out that the extension of control to all mentally defective persons would involve an increase in expenditure, and the financial operations of the proposed statutory committee would be very large. The cost to the Council would come under two heads: (1) Expenditure on services now carried out by other authorities and the Council's own present expenditure; and (2) new expenditure involved by carrying out the proposals of the Commission. There would not be an addition, presumably, to the burdens of the London ratepayer under the first head. Shortly stated, the enlarged scope of operations of the new committee would involve increased expenditure in carrying out the following new duties: (*a*) Detention and control of defective children after school-age; (*b*) compilation of register of mentally defectives; (*c*) appointment of medical officers and certifying medical practitioners; (*d*) detention of mentally defective persons convicted of offences, and control over defective persons who would otherwise frequent the casual wards of workhouses and other shelters; and (*e*) compulsory provision of accommodation for mentally defective inebriates.

The Cost to London.

It was impossible to estimate the cost to London of carrying out the whole of these recommendations, but some idea might be gathered from the figures given by the Commissioners for the whole of England and Wales. They estimated the additional cost at £899,532, or an increase over the present cost of £541,492. The Finance Committee pointed out that savings in administrative expenses owing to coördination and economy, the result of better classification, would occur. Under the present system there was considerable pressure on the relatively costly asylum accommodation by reason of the "feeble and decrepit" old people whom the guardians passed on. The exclusion from lunatic asylums of persons who did not need such expensive treatment should result in considerable economy. It was in order to avoid clogging special institutions with unimprovable cases that the Commission proposed the appointment of one authority in each county or county borough to ensure that persons should be passed on to institutions best fitted for them. It might be assumed that some economy to the public purse would

[1] THE LANCET, Sept. 12th (p. 819), 19th (p. 890), and 26th (p. 959), and Oct. 3rd (p. 1018), 1908.

ensue from the avoidance of the duplication and even triplication of certificates prior to admission which occurred so frequently under the present system. The Finance Committee rejoiced to see in the Royal Commissioners' recommendations unity of financial administration foreshadowed, thus securing to the ratepayers the fullest possible economy. The Finance Committee endorsed the objections of the Local Government Committee with regard to the readjustment of cost between local authorities and the Government, and remarked in conclusion that the care and control of the mentally defective was universally recognised as a national, rather than a local, question; and it was satisfactory to note that the Commission realised and pointed out the need for "substantial financial assistance" from the Exchequer. When the time came it would be imperative for the Council to take steps to ensure that adequate assistance was granted from Imperial funds to meet the cost of carrying out effectively any proposals made as a result of the Commissioners' report.

The Recommendations of the Committees.

The recommendations attached to the joint report of the committees were: (*a*) That the Council welcomes proposals for the coördination of the administration of controlling persons of all ages coming under the term "mentally defective" as defined by the Royal Commission. (*b*) That no opinion be expressed with regard to the constitution of the proposed board of control, but that in the opinion of the Council the control should be vested in a single Government department. (*c*) That if the Council is required to undertake the work it should be discharged through a statutory committee of the Council with the power of coöption, financial control and the determination of new principles to rest with the Council. (*d*) That adequate provision should be made for close coöperation with any authority that may be set up hereafter for dealing with the administration of public assistance. (*e*) That in the opinion of the Council the care and control of mentally defective persons is a national service administered locally, and while not agreeing with the methods proposed by the Royal Commission for the allocation of Imperial grants the Council is of opinion that provision for an appropriate measure of Exchequer assistance should accompany any reorganisation or extension of the administrative machinery for dealing with such persons. (*f*) That a copy of the foregoing resolutions be forwarded to the Government.

In view of the absence of several leading members of the Council in connexion with Parliamentary elections, the consideration of the report was postponed.

Proposals for Increased Accommodation for Defectives.

Reporting concurrently on the provision of accommodation for mentally defective children in London, the Education Committee mentioned that in 1908 the Council decided that no additional schools for the mentally defective should be provided pending the issue of the report of the Royal Commission. In the event of the proposals of the Commission becoming law the special schools for the mentally defective provided by the Council would continue to be carried on, in all probability by the Council, although the expenditure connected with them would not be charged to the education account. Until it was known what action would be taken in regard to the report of the Commission, the committee considered the work of the Council should continue substantially on the present lines—i.e., that accommodation should be provided to meet immediate needs, but that the question of future requirements should remain in abeyance. Following proposals to provide 220 school places for mentally defective children already agreed to, the committee submitted further schemes to provide 610 more places.

The Finance Committee, reporting on these proposals, stated that it had thought of postponing their consideration until the Council's policy in regard to the report of the Royal Commission had been formulated. However, the recommendations of the various committees (see above) were confined to a general approval of the principles of the Commissioners' report, and did not afford much help in the direction of settling the important question of policy to be adopted in meeting the present need for accommodation for mentally defective children in London. It seemed likely that for some considerable time to come day school accommodation would be required for these children, whether or not the education authority continued to be entrusted with their care, and therefore the Finance Committee had given its approval to the Education Committee's proposals. Remembering that special cost twice as much as ordinary school accommodation to provide, the Finance Committee would have advocated, if it were practicable, that some temporary measures should be adopted until the trend of future legislation was ascertained, but the committee was assured that certain difficulties prevented the adoption of this course.

Possibility of Special Schools becoming Obsolete.

In the course of a short discussion on the Education Committee's proposals, Mr. Leon deprecated any further expenditure on provision for defective children until it was seen what action would be taken by the Government on the report of the Royal Commission. While he was by no means opposed to provision for defective children, he objected to the expenditure of large sums of money on their behalf while the normal children suffered through being taught in unduly large classes. He was afraid this expenditure might be an excuse for cutting down the sums allocated to the ordinary elementary schools. Moreover, having regard to the recommendations of the Royal Commission on the subject, he doubted very much if the mentally defective child in the future would be taught in schools of the kind proposed to be erected, and the Council might find it had practically thrown money away. It would be worth while waiting one or two years—he did not think it would be longer—for a national settlement of this question. He regarded it as undesirable to spend large sums in educating these children only to make it more possible for them to increase an undesirable race. Mr. Jay, the chairman of the committee, said he had a great deal of sympathy with what Mr. Leon had said. As there seemed no prospect of the Government dealing with the whole question, the Council was bound to make provision for those children actually out of school, which was all that was proposed to be done. The proposals before the Council had no reference to future requirements. He agreed that their expenditure might turn out in the end to be very unremunerative and unsatisfactory, but, unfortunately, they could not help that. The proposals for additional accommodation were then agreed to.

MEDICINE AND THE LAW.

A Medical Man's Experience of the Workmen's Compensation Act.

A PAPER recently read by Dr. R. J. Collie at the eleventh Congrès International des Maladies Professionnelles, held at Brussels,[1] contains much that is instructive and suggestive with regard to the administration and practical working of the Workmen's Compensation Act, 1906. This more or less recent statute has now been on trial long enough for its weak points to have been fairly well brought home to employer and employed. It has caused and is causing considerable expenditure to the former, who does not grudge this when it provides compensation in cases of undeserved and unavoidable incapacity occurring by accidents to his servants, but who at the same time finds himself laid open to exploitation in many instances in a manner inconsistent with the acknowledged principles of law and justice. Dr. Collie informs us that in the 12 months preceding the reading of the paper referred to, he conducted 1464 examinations of injuries, of which 844 were examinations of medico-legal cases, mostly in connexion with threatened actions at common law, but many of them under the Workmen's Compensation Act. He speaks, therefore, as an expert looker-on or as one of those who proverbially see most of the game, and from his point of vantage he has made the most of his opportunities for observation. Fully alive to the benefits conferred by the Act upon the genuine case of accidental injury, he has also been strongly impressed by the physical and moral injury arising to the workman, who is induced to become an idler, a pseudo-neurasthenic,

[1] The Medico-legal Aspect of the British Workmen's Compensation Act, 1906, a paper read at Brussels, Sept. 10th-14th, 1910, by R. J. Collie, M.D., J.P., Medical Examiner for the London County Council, Chief Medical Officer for the London Water Board, Examiner (Accidents and Claims), Sun Insurance and other Accident Offices. London: Baillière, Tindall, and Cox, 1911, pp. 40.

and a malingerer by the temptation to formulate a fraudulent or inflated claim for compensation. We need not dwell upon the methods of the malingerer, with the exposure of which Dr. Collie's name is sufficiently associated for objection to have been made recently in London to his examining a workman, alleged to have been injured, except in the presence of his solicitor—an objection not upheld by the court. Dr. Collie points out that the evils arising out of claims of the kind suggested might be minimised by easy and uncomplicated alterations of procedure for which he makes practical suggestion. In particular he points to the rare and ineffective use made of the medical referees which the present Act and its predecessor have called into being. In cases under the Act of 1906, when a claim is made in respect of industrial diseases ranking as accidents, a certifying surgeon appointed under the Factory and Workshop Act, 1901, has to give a certificate of incapacity, or to refuse it. If the employer or the workman is aggrieved by the act of the certifying surgeon in this respect the matter is to be referred to a medical referee, whose decision is final. Thus the last word upon a disputed point of a purely medical nature is spoken by a specially qualified medical man. In other cases the most keenly fought contests upon questions equally of a scientific character may take place with highly technical expert evidence on both sides before a county court judge alone; an impartial judge no doubt, but a layman wholly unqualified to decide "when doctors disagree." It is true that a case may be referred to a medical referee on the application of both parties; but Dr. Collie points out that, as might be expected, this very rarely takes place, and he suggests that either party, instead of both by agreement, should be able to claim to have the medical decision of the case placed in the hands of a medical referee. Again, the medical referee may be summoned by the judge to sit with him as an assessor. The inefficacy of this provision in practice is shown by the fact that in one year (1908) medical referees were summoned to sit with judges in 145 cases only, so that as there were about 340 medical referees in existence not one-half of their number acted as assessors in the course of a whole year. The suggestion made by Dr. Collie on this point is that a medical referee should sit as assessor on the application of either party. Thirdly, the judge may submit to a medical referee for report any matter which seems material. In this case it appears to be open to the judge or arbitrator to act upon the referee's report and to treat it as conclusive, but he is not bound to do so, and here again the intervention of the referee is in the discretion of the judge, and is not to be brought about by one of the parties who may desire to have a medical question submitted to an independent medical expert. Dr. Collie would have medical referees appointed in large centres as whole-time, salaried officials, like county court judges, occupying as these do entirely independent positions, and he is of the opinion that no better course could be followed than that recommended by the Departmental Committee on the Workmen's Compensation Act, 1906—namely, that in six selected districts independent State-paid medical referees should be instituted as an experiment, and that the plan should be gradually extended if it were to be found to work satisfactorily. A practical suggestion made on behalf of the working man should be noted by those inclined to think that, occupied with the unmasking of the malingerer, Dr. Collie is unable to appreciate the point of view of those for whose benefit the Act was passed. He points out that the provision against "contracting out" in any form inflicts considerable hardship upon those workmen who suffer from some physical incapacity which suggests a possible predisposition to accidental injury, or which might increase the consequences of injury if an accident of a particular kind were to happen. As the law stands, a workman who so suffers is almost sure to be refused employment in many instances where he would obtain it if he were to be permitted to "contract out" of his right to compensation for injuries due to, or increased by, the conditions specified in his contract. Possibly when the legislature has leisure to consider matters of the class referred to above, in the light of experience such as that of Dr. Collie, the Workmen's Compensation Act, 1906, may be amended so that it will work more justly to both classes—employers and employed, and in such a manner as to minimise its corrupting influence upon the latter. At present, to take the figures of the year 1908, out of 323,957 claims in respect of industrial accidents only 2503 were decided in the courts, and out of 2503 claims which came into court 82 per cent. ended in favour of the applicants for compensation. Where the odds are so long against the defending party and where the litigation is at the suit of an adversary who cannot in the event of losing pay the costs of the successful litigant, caution deters the insurance company from the contest, and claims are settled, not because they are just, but because it is cheaper to give way than to seek justice.

An Action for Libel.

At the Leeds assizes recently, before Mr. Justice Lawrence and a jury, an action was brought by Mrs. Louisa Robinson of Halifax against Dr. J. P. I. Harty and Mr. A. N. Brushfield of Halifax to recover damages for an alleged libel contained in a medical certificate to the guardians in which it was suggested that she was a malingerer. The plaintiff conducted her own case, while the defence was in the hands of Mr. J. A. Compston, instructed by Messrs. Hirst and Whitley on behalf of the London and Counties Medical Protection Society. Mr. Compston submitted that there was no case for the defendants to answer. It was a matter of privilege and was also hopelessly out of time. His lordship agreed, and the jury returned a verdict for the defendants.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 77 of the largest English towns 7242 births and 5866 deaths were registered during the week ending Dec. 3rd. The annual rate of mortality in these towns, which had steadily increased in the five preceding weeks from 13·0 to 17·3 per 1000, further rose to 18·1 in the week under notice. During the first nine weeks of the current quarter the death-rate in these towns averaged 14·5 per 1000. In London during the same period the death-rate, calculated on the probably over-estimated population, was equal to 15·2 per 1000. The annual rates last week in the 77 towns ranged from 7·2 in Handsworth, 8·5 in Walthamstow, 11·0 in Willesden, and 11·3 in East Ham, to 22·4 in Dewsbury, 22·7 in Swansea, 24·8 in Huddersfield, and 26·2 in Great Yarmouth. The 5866 deaths from all causes in the 77 towns last week showed a further increase of 249 on the numbers returned in recent weeks, and included 416 which were referred to the principal epidemic diseases, against numbers increasing from 361 to 420 in the four preceding weeks; of these 416 deaths, 231 resulted from measles, 49 from diarrhœa, 45 from whooping-cough, 42 from diphtheria, 25 from scarlet fever, and 24 from enteric fever, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the 77 towns last week was equal to 1·3 per 1000, and corresponded with the rate in the previous week. No death from any of these epidemic diseases was registered last week in Rhondda, Leyton, Southampton, South Shields, Halifax, or in 10 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·9 in Rotherham, 4·2 in Grimsby, 4·3 in Brighton, and 6·5 in Tynemouth. The fatal cases of measles in the 77 towns, which had steadily increased in the four preceding weeks from 101 to 192, further rose last week to 231, and exceeded the number in any previous week of this year; they caused the highest annual rates, 2·4 in Portsmouth, 2·8 in Grimsby, 3·1 in Rotherham, 3·6 in Brighton, and 3·7 in Tynemouth. The 49 deaths attributed to diarrhœa in the 77 towns showed a further decline from recent weekly numbers. The 45 deaths from whooping-cough were fewer by 11 than those returned in the previous week, but caused an annual rate equal to 1·5 per 1000 both in Wolverhampton and in Middlesbrough. The 42 fatal cases of diphtheria also showed a distinct decline from recent weekly numbers, but included 14 in London and its suburban districts, 3 in Birmingham and King's Norton, 3 in Manchester, and 2 each in Bolton, Bury, and Sunderland. The 25 deaths from scarlet fever were within one of those returned in the previous week; 5 occurred in Liverpool and 2 both in Manchester and Leeds. The deaths referred to enteric fever, which had been 32, 21, and 25 in the three preceding weeks, were 24 last week, of which 7 were returned in London and its suburban districts, 3 in Wigan, and 2 both in Manchester and Grimsby.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had been 1882, 1843, and 1769 at the end of the three preceding weeks, had further declined to 1746 on Saturday last; 170 new cases of this disease were admitted to these hospitals during last week, against 180 and 153 in the two previous weeks. The 1974 deaths from all causes in London last week included 669 which were referred to pneumonia and other diseases of the respiratory system, against numbers increasing from 246 to 558 in the four preceding weeks; they exceeded by 274 the corrected average number in the corresponding week of the five years 1905–09. The causes of 52, or 0·9 per cent., of the deaths registered during last week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified last week in London and in its eight suburban districts, in Manchester, Bristol, Bradford, Newcastle-on-Tyne, Nottingham, and in 42 other smaller towns; the 52 uncertified causes of death in the 77 towns last week included 9 in Liverpool, 6 in Birmingham, 4 in Stoke-on-Trent, 4 in Rochdale, and 3 each in Portsmouth, Leicester, and Sheffield.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 780 births and 633 deaths were registered during the week ending Dec. 3rd. The annual rate of mortality in these towns, which had been equal to 13·3, 16·2, and 16·5 per 1000 in the three preceding weeks, further rose to 17·5 in the week under notice. During the first nine weeks of the current quarter the death-rate in these eight towns averaged 14·5 per 1000, and corresponded with the mean rate during the same period in the 77 largest English towns. The annual death-rates in the eight Scotch towns last week ranged from 11·2 and 16·9 in Aberdeen and Edinburgh, to 21·0 in Perth and 22·2 in Leith. The 633 deaths from all causes in the eight towns last week showed a further increase of 33 upon the numbers in the three preceding weeks, and included 47 which were referred to the principal epidemic diseases, against 61 and 55 in the two previous weeks; of these 47 deaths, 16 resulted from diarrhœa, 11 from diphtheria, 10 from whooping-cough, 5 from scarlet fever, 3 from "fever," and 2 from measles, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the eight towns last week was equal to 1·3 per 1000, and corresponded with the rate from the same diseases in the 77 English towns. The deaths attributed to diarrhœa in the Scotch towns, which had been 17, 24, and 15 in the three preceding weeks, were 16 last week, and included 5 in Glasgow, 4 in Dundee, and 3 in Edinburgh. The 11 fatal cases of diphtheria showed a decline of 3 from the number in the previous week; 5 occurred in Glasgow, and 2 both in Dundee and Perth. The deaths from whooping-cough, which had been 13 and 12 in the two previous weeks, further declined last week to 10, of which 7 were returned in Glasgow and 3 in Leith. The 5 fatal cases of scarlet fever were fewer by 6 than the number in the previous week, and included 2 in Glasgow. The 3 deaths referred to "fever" included 2 certified as enteric fever, and 1 as cerebro-spinal meningitis. The deaths referred to diseases of the respiratory system in the eight towns, which had been 65, 121, and 138 in the three preceding weeks, further rose to 157 last week, but were 108 below the number in the corresponding week of last year. The causes of 15, or 2·4 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 554 births and 400 deaths were registered during the week ending Dec. 3rd. The mean annual rate of mortality in these towns, which had steadily increased in the four preceding weeks from 15·1, to 19·1 per 1000, declined again to 18·1 in the week under notice. During the first nine weeks of the current quarter the annual death-rate in these Irish towns averaged 17·0 per 1000; the mean rate during the same period did not exceed 14 5 in the 77 largest English towns or in the eight Scotch towns. The annual death-rate during last week was equal to 21·9 in Dublin, 14·5 in Belfast, 13·7 in Cork, 15·6 in Londonderry, 23·2 in Limerick, and 19·5 in Waterford; the mean annual death-rate last week in the 16 smallest of these Irish towns was equal to 19·2 per 1000. The 400 deaths from all causes in the 22 town districts last week showed a decline of 23 from the number in the previous week, and and included 36 which were referred to the principal epidemic diseases, against 18 and 29 in the two previous weeks; these 36 deaths were equal to an annual rate of 1·6 per 1000; in the 77 English towns and in the eight Scotch towns the mean rate from the same diseases last week did not exceed 1·3 per 1000. The 36 deaths from these epidemic diseases in the Irish towns last week included 14 from measles, 9 from diarrhœa, 5 from diphtheria, 5 from whooping-cough, 3 from scarlet fever, and not one either from enteric fever or small-pox. The 14 fatal cases of measles showed a further increase of 6 upon the numbers in recent weeks, and included 8 in Lurgan, 4 in Armagh, and 2 in Belfast. The 9 deaths attributed to diarrhœa also showed an increase, 6 being returned in Dublin. All the 5 fatal cases of whooping-cough, 3 of the 5 deaths from diphtheria, and the 3 deaths from scarlet fever also occurred in Dublin. The deaths in the 22 towns last week included 108 which were referred to pneumonia and other diseases of the respiratory system, against 80 and 100 in the two preceding weeks. The causes of 22, or 5·5 per cent., of the deaths registered last week in the Irish towns were not certified; in the 77 English towns the proportion of uncertified deaths last week did not exceed 0·9 per cent., and in the eight Scotch towns it was equal to 2·4 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeons: W. G. K. Barnes to the *President;* E. B. Pickthorn to the *Prince of Wales*, on recommissioning; G. H. Foott to the *Albemarle*, on recommissioning; and A. H. H. Vizard to the *Queen*, on recommissioning. Staff-Surgeons: K. H. Jones to the *Highflyer*, on commissioning; H. P. Turnbull to the *Hannibal*, on recommissioning; R. W. Stanistreet to the *Euryalus*. Surgeons: H. B. German to be lent to the *Euryalus*, temporarily; A. G. V. French to the *Prince of Wales*, on recommissioning; S. Bradbury to the *Queen*, on recommissioning; L. C. E. Murphy to the *Vivid*, additional, for disposal on the *Commonwealth* reducing; and J. H. McDowall to the *Pembroke*, additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

The undermentioned officers from the Seconded List, are restored to the establishment (dated Nov. 18th, 1910):—Captain William M. B. Sparkes, and Lieutenant Harold T. Treves.

The following officers have been detailed to take part in a medical staff ride in the vicinity of Salisbury: Surgeon-General H. R. Whitehead, C.B., principal medical officer of the Southern Command; Lieutenant-Colonel W. T. Swan, Major E. A. Burnside, Major N. Tyacke, Major A. E. Milner, Major C. B. Lawson, Major W. E. Hudleston, Major W. A. Ward, and Major P. H. Collingwood. Surgeon-General J. G. MacNeece, principal medical officer of the Eighth (Lucknow) Division, has joined at Lucknow, from Naini Tal. Colonel M. W. Kerin, officiating principal medical officer of the Seventh (Meerut) Division, has taken up duty at Mussooree. Lieutenant-Colonel E. J. R. Risk, administrative medical officer, Belfast District, has been selected to succeed Colonel D. Wardrop, C.V.O., as Commandant and Director of Studies at the Royal Army Medical College, whose tenure of the appointment will expire on Feb. 4th next. Lieutenant-Colonel G. Cree, from Madras, has been appointed to the Eastern Command for duty. Lieutenant-Colonel H. M. Thompson, D.S.O., commanding the Station Hospital at Lucknow, has arrived home on leave. Lieutenant-Colonel F. W. Caton Jones, from Tidworth Park, has been selected to command the Station Hospital at Quetta. Lieutenant-Colonel W. L. Reade, from Dublin, has joined at Mauritius. Lieutenant-Colonel C. T. Blackwell has been appointed to command the

Station Hospital at Madras. Lieutenant-Colonel T. B. Winter has arrived home, tour-expired from India. Major J. W. Jennings, D.S.O., has been transferred from Chester to Liverpool and posted as Recruiting Medical Officer. Major A. E. Thorp, from Tidworth Park, has embarked for a tour of foreign service in South Africa. Major G. B. Riddick, from Maymyo, has taken up duty at Rangoon. Major G. H. Goddard, from Alderney, has been appointed to the Medical Charge of the Military Families Hospital at Shorncliffe. Major H. G. Stallard, Captain J. G. Foster, and Captain H. E. Howley have embarked in H.M.T. *Dongola* for a tour of service in India. Captain M. Keane has been appointed Staff Surgeon in charge of Meerut Divisional Headquarters, vice the late Major R. Selby. Captain H. C. R. Hime, in charge of the Brigade Laboratory at Madras, has been appointed a Specialist in the Prevention of Disease. The following officers (Captains) have joined at the Royal Army Medical College for a course of instruction for promotion to the rank of major:—F. J. Brackenridge, R. B. Black, P. Davidson, D.S.O., R. L. V. Foster, S. M. W. Meadows, D. S. Skelton, J. G. Bell, A. E. B. Wood, J. C. G. Carmichael, R. H. Bridges, J. A. W. Webster, F. C. Lambert, J. B. Meldon, R. C. Wilmot, H. B. Kelly, E. M. Pennefather, B. H. V. Dunbar, D. G. Carmichael, J. M. M. Crawford, and C. Bramhall. Captain C. H. Turner has arrived home from India, tour-expired. Captain E. W. Powell, from Belgaum, has joined at Aden and has been appointed to the charge of the Brigade Laboratory. Captain W. R. P. Goodwin, from Woolwich, has been placed under orders for a tour of service in India. Captain R. B. Black, on the termination of his appointment with the Egyptian army, has had the order of the Osmanieh (Fourth Class) conferred on him by the Khedive. Captain W. McConaghy has been transferred from Wedgnock Camp to Tidworth Park. Captain J. du P. Langrishe, from Mhow, has joined at Poona. Lieutenant H. T. Treves, on return from special service under the Colonial Office in Uganda, has been posted to the London District. Lieutenant M. J. Williamson has joined at Tidworth Park from Hamilton Camp. Lieutenant A. G. Moutray has been granted nine months' leave home from India.

INDIAN MEDICAL SERVICE.

Surgeon-General C. P. Lukis, C.S.I., Director-General of the Indian Medical Service, has been appointed an Ordinary Fellow of the Calcutta University. On relief by Colonel C. F. Willis, Lieutenant-Colonel J. W. Rodgers has been appointed to officiate as Principal Medical Officer of the Sirhind and Jullundur Brigades during the absence on eight months' leave of Colonel A. M. Crofts, C.I.E. Lieutenant-Colonel W. H. Quirke, Bombay, has been granted three months' extension of his leave on medical certificate. Lieutenant-Colonel R. J. Marks, on return from leave, has been appointed Civil Surgeon at Gorakhpur. Lieutenant-Colonel H. F. Cleveland, secretary to the Principal Medical Officer His Majesty's Forces in India, has arrived home on leave. Major J. W. Grant has been appointed by the Foreign Department of the Government of India to be Residency Surgeon to the Western States of Rajputana, in succession to Lieutenant-Colonel R. C. Macwatt, who has proceeded on combined leave. Major W. H. Kenrick, civil surgeon at Nimar, has been placed on special duty under the orders of the Sanitary Commissioner of the Central Provinces. On return from furlough Major D. W. Sutherland has taken up duty as Principal and Professor of Medicine and Diseases of Children at the Medical College, Lahore, relieving Major H. G. Melville. Major W. Selby has been transferred from Gorakhpur to Lucknow as Civil Surgeon. Major C. Thomson has received an extension of his leave to Jan. 29th next. The services of Captain A. C. MacGilchrist, officiating Professor of Materia Medica at the Medical College, Lahore, have been replaced at the disposal of the Government of India. Captain S. B. Mehta has been appointed Assistant District Plague Medical Officer at Lyallpur. Captain H. Watts, Bombay, and Captain F. N. White have arrived home on leave from India. On return from duty at Pachmarhi Captain J. M. C. MacMillan has been appointed Civil Surgeon at Hoshangabad, Central Provinces. Captain S. C. Chuckerbutty has been posted for plague duty at Bassein. Captain H. Ross has joined the Civil Medical Department of the United Provinces and has been appointed Civil Surgeon of Etawah. Captain A. H. Proctor has received an extension of his leave to Feb. 16th next. Captain J. F. Boyd, in charge of the Brigade Laboratory at Bannu, has been appointed a Specialist in the Prevention of Disease. Captain M. F. White has embarked for Bombay on the expiration of his leave home.

The King has approved of the retirement of the undermentioned officers of the Indian Medical Service: Colonel Patrick Alexander Weir (dated Oct. 26th, 1910), and Lieutenant-Colonel Robert Evans Stuart Davis (dated Oct. 29th, 1910).

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

2nd Highland Field Ambulance, Royal Army Medical Corps: Lieutenant Lewis D. Cruickshank to be Captain (dated Nov. 7th, 1910).

CHANNEL ISLANDS MILITIA.

The Royal Militia of the Island of Jersey.

Medical Corps: Surgeon-Lieutenant Henry J. Shone to be Surgeon-Captain (dated Nov. 25th, 1910).

ROYAL ARMY MEDICAL CORPS JOURNAL.

In the December issue of this journal, which closes the fifteenth half-yearly volume, Major J. C. B. Statham, R.A.M.C., describes an outbreak of fever due to bacteria having unusual cultural characters "in that, though possessing many of the features of the typhoid colon group of bacteria, they ferment saccharose markedly and do not affect dulcite." Captain A. R. Tweedie, R.A.M.C. (T.), discusses the question of ambulance wagons, believing that "the fact that at least three patterns of ambulance wagons are now being used in the service affords sufficient reason to assume that no ideal type has yet been attained." His contention is that all further efforts in ambulance wagon construction should be developed on the lines of "Mark I. (Light)." Major E. C. Freeman, R.A.M.C. (R.P.), deals with the question of clearing hospitals and the Territorial Force. With regard to the Red Cross organisation, he is of opinion that it should be carried out by the medical service of the Territorial Force, and for this purpose all the Voluntary Aid Detachments should be put under the inspection of the administrative medical officer of the Territorial Force division in which they are situated, or of someone delegated by him for the purpose. This issue of the journal also contains a further instalment of the Medical History of the South African War, by Lieutenant-Colonel R. J. S. Simpson, C.M.G., R.A.M.C.

OSBORNE: REPORT OF THE HOUSE GOVERNOR AND MEDICAL SUPERINTENDENT.

The report of the house governor and medical superintendent of Osborne, Surgeon-Lieutenant-Colonel C. R. Kilkelly, for the year ended March 31st, 1910, has just been presented to Parliament. It states that there has been no variation in the accommodation provided—viz., for 43 officers and five ladies. The admissions during the year comprised 200 officers and 69 ladies—total 269, as compared with an average of 289 in the three preceding years. The average daily number in residence was 32·50. The average duration of each case of illness was approximately six weeks. The decrease in admissions is accounted for by (1) insufficient knowledge of the benefits of Osborne amongst sick officers; (2) the very large reduction in the invaliding home of officers similar to the reduction effected in the invaliding of soldiers which has taken place during the last two or three years; and (3) the establishment of nursing homes and institutions for sick officers in the hills in India where many cases pass their period of convalescence instead of coming home under the new regulations. As in previous years, by far the largest number of officers admitted belong to the home army, and nearly 33·5 per cent. of the total number of admissions were for diseases contracted on service in India. The admissions from the Royal Navy compared with those from the army furnish a ratio which agrees with the relative strengths of the navy and army in officers—viz., 1 to 7. The largest number of admissions were for (*a*) infective diseases (51), principally dysentery; (*b*) diseases of the nervous system (22), chiefly neurasthenia; and (*c*) diseases of the digestive system (65), principally inflammation and ulceration of the stomach and intestines and liver abscesses. Enteric fever, influenza, malaria, and Malta fever accounted for 24 admissions. The

two cases of Malta fever were contracted in Somaliland. All the cases of dysentery have done specially well under treatment at Osborne. The five admissions for tuberculosis were limited in extent and did not implicate the lungs. A case of malignant new growth was transferred for further treatment to the Queen Alexandra Hospital, Millbank, where the patient died. The cases of neurasthenia nearly all required more or less complete courses of Weir Mitchell treatment. The general results in these cases have been excellent considering their nature and the usually prolonged duration of the previous illness prior to treatment. There were nine admissions for various diseases of the heart and four underwent a course of treatment by Nauheim baths and Schott's exercises. The diseases of the digestive system formed the largest group of cases, and many of them had undergone operations. They included cases of appendicitis, colitis, gastro-duodenal ulcers, sprue, and liver abscesses. A case of multiple stricture of the colon was suspected to be the result of glass poisoning in India. The cases of liver abscess were the result of dysentery contracted in India. One case of liver abscess was passed fit for service by the Medical Board last February after an illness lasting since September, 1907. Amongst the general injuries a case of shock was the result of a fall of 50 feet from a kite whilst experimenting at Aldershot. There were 74 post-operation cases. There was no death. His Majesty the late King and his Majesty King George, and other members of the Royal Family visited Osborne on several occasions, and expressed their approbation of the work done. Members of the consulting staff and house committee have visited Osborne about twice every month for the purpose of consultation and inspecting the medical, nursing, domestic, and general arrangements. Sick officers in residence have constantly availed themselves of the advice tendered them as regards their health by the consultants, who have in addition frequently given them further advice and treatment gratuitously in their consulting rooms in London. The officers of the Queen Alexandra Military Hospital and the Royal Army Medical College have given much help in the treatment of cases and investigation of disease.

Correspondence.

"Audi alteram partem."

THE GENERAL MEDICAL COUNCIL AND THE PROPOSED ANÆSTHETICS ACT.

To the Editor of THE LANCET.

SIR,—As will be seen from the account of the recent proceedings of the General Medical Council[1] another definite step has been taken towards securing legislation in regard to anæsthetics. The Council has adopted the report of its Anæsthetics Committee concerning the memorandum and draft Bill submitted by the Home Secretary to the Privy Council and referred by that body to the General Medical Council for its observations thereon, and as that report is favourable to the Bill and urges the necessity for speedy legislation, it may be hoped that during the next session this or some similar Bill will be laid before Parliament. Whilst no one realises more than I do the public-spirited interest which the General Medical Council and its Anæsthetics Committee have taken, and are still taking, in this much-needed reform, I feel that, as I was responsible for the drafting of the Bill, I should like to be allowed to draw attention, though your columns, to the second of the six observations which that Council has just forwarded to the Privy Council concerning the Bill in question. The effect of the suggested amendment to Clause I. would be to permit and perhaps to encourage registered dentists to administer, for operations other than dental, the general anæsthetic or anæsthetics which the General Medical Council might from time to time include in a schedule to the Act; and the question naturally arises whether such an arrangement would give to the public that degree of protection to which, by common consent, it is entitled. Personally I venture to suggest that it would not do so, and as this was the view which the General Medical Council originally held when this proposed addition to the ordinary functions of dentists was first mooted, I hope it may not be too late again to refer to the subject. Both Dr. Blumfeld and I have already advanced in your columns[2] reasons against registered dentists administering anæsthetics in general surgical practice; and with the hope that the General Medical Council, when the present draft Bill comes back for final consideration, may see its way to reconsider this point, I venture to summarise the chief objections which seem to me to stand in the way of the proposed amendment.

The suggestion that dentists should be permitted to administer certain anæsthetics in general surgical operations was, I believe, made on the assumption that such a scheme would be of great convenience in country districts and small provincial towns where medical men might not be available at the moment when an anæsthetic was required, whilst the proposal seemed to acquire additional force from the further assumption that medical men were, as a class, inferior to dentists, so far as the administration of nitrous oxide was concerned. But as there are no registered dentists in country districts, and as practically every provincial town possessing but one dentist possesses also at least five medical men, amongst whom there would surely be one or more with an equal, if not a greater, knowledge of nitrous oxide than that possessed by the local single-handed dentist, it is, I confess, difficult to see the necessity for such a proposal. Even if it be admitted that there are many dentists who are more familiar with the administration and effects of nitrous oxide than many medical men, I would venture to say, with due respect to all those who may hold opposite views, that if by legislative enactment or otherwise it were to become the recognised custom for medical men to call in dentists to administer nitrous oxide or other anæsthetics in general surgery we should be placing all present and future medical students in the absurd position of being obliged to obtain instruction in the use of anæsthetics which, under certain conditions contained in a paradoxical Act of Parliament, they would not be expected to administer. Surely the General Medical Council, by insisting upon such an amendment to the Bill, would be putting back the clock; surely they would be commencing to undo the good work they have already done in insisting upon the proper instruction of all medical students in all general anæsthetics. But there are even weightier considerations than these—considerations regarding the patients submitted to the anæsthesia in question. From the point of view of the public, can we honestly say that a patient who, let us suppose, is ill, and is the subject of some grave visceral disease, should be anæsthetised, even for an apparently trifling operation, by a man who has had, at all events whilst in practice, no clinical experience of disease? I feel sure the dental profession will not misunderstand me in this argument. No one realises more than I do the excellence of the educational curriculum through which dental students pass and the high character of the work which that profession is doing for the public. But I do not think, and I believe that many, if not most, dentists will agree with me, that this excursion from dental into medical practice is called for, nor do I think that it would be to the interests of dentists themselves. Moreover, there are many apparently simple surgical operations which, when begun, develop into more extensive procedures, demanding at the moment a more prolonged or deeper anæsthesia; in other words, an anæsthesia which the dentist, as the anæsthetist in attendance, would neither be prepared nor legally entitled to produce. After a somewhat extensive experience with anæsthetics, and particularly with nitrous oxide, I feel more or less compelled to record my conviction that an amendment of the Bill such as that proposed would be distinctly detrimental to the public interest, for it would reopen the door to certain risks of general anæsthesia which might otherwise be prevented. As the regulations of the General Medical Council with regard to the instruction of all medical students in anæsthetics have now been in force for some time, it is obvious that the country is gradually being furnished with medical men who are able not only to administer ether and chloroform for major operations but nitrous oxide in so-called minor surgery.

I trust, Sir, that those of your correspondents who may be interested in the question of legislation in regard to

[1] THE LANCET, Dec. 3rd, 1910, p. 1625.

[2] THE LANCET, March 26th (p. 888) and April 9th, 1910 (p. 1027).

anæsthetics will express their views on the point to which I have referred. Like the main issue—that of protecting the public against the use of anæsthetics by unqualified persons—the point I have raised is one which, after all is said and done, should be decided by what is best in the interests of the patient. I am, Sir, yours faithfully,

Dec. 6th, 1910. FREDERIC HEWITT.

THROMBOTIC SOFTENING OF THE SPINAL CORD AS A CAUSE OF SO-CALLED "ACUTE MYELITIS."

To the Editor of THE LANCET.

SIR,—In your issue of Dec. 3rd Dr. F. E. Batten says, "Most observers will be in entire agreement" with most of the views expressed in my article in THE LANCET of Nov. 26th, and in partial confirmation he refers me to the recent article on Acute Myelitis in Clifford Allbutt's "System of Medicine," Vol. VII., p. 645, 1910.

I ought to say that my article was written just 12 months ago, and therefore some time before Vol. VII. of the admirable re-issue of the "System of Medicine" had appeared. On referring to this volume I find that while the question at issue is carefully considered the old term of acute myelitis is retained on the ground of clinical convenience (?) and long usage, as well as because "the result of an acute or sub-acute focal lesion of the spinal cord is a clinical picture which varies with the site more than with the nature of the morbid process. An accurate diagnosis of the latter is often possible only after death, and not always then if the disease is of long standing."

But these difficulties are precisely as applicable to the cerebral as to the spinal affections, so that I can only regret that in the new "System" the opportunity has not been taken to rectify the inconsistency of attributing to inflammation in the spinal cord what in the parallel affections of the brain are universally acknowledged to be results of degeneration from vascular occlusions.

Correct treatment in the early stages of the spinal affection must be dependent upon a correct diagnosis, and if the practitioner is taught to regard the common run of cases of so-called "acute myelitis" as of an inflammatory nature, is he not really being led astray?

In regard to the nature of acute poliomyelitis, this has long been a source of doubt and difficulty. The little that I had to say on this subject was mainly directed to the improbability of its being due to a strictly limited common inflammation. I am quite prepared to admit, however, that much recent evidence goes to show that it is really an infective disease of a very obscure nature.

I am, Sir, yours faithfully,

London, Dec. 3rd, 1910. H. CHARLTON BASTIAN.

To the Editor of THE LANCET.

SIR,—Dr. Bastian is so intimately associated with the evolutionary history of neurology, and his share in elucidating many of its most difficult problems during the last half of the nineteenth century is so great, that any paper from his pen is eagerly read by those who are proud to call themselves his pupils. In THE LANCET of Nov. 26th there appears an article by Dr. Bastian with the above title, an article which many, I think, will agree with me should not be allowed to pass without comment or even without respectful criticism.

The earlier part of Dr. Bastian's paper expresses his view that the thrombotic element in acute myelitis, to which he has done so much to draw attention, has not received appropriate recognition. The following two quotations illustrate Dr. Bastian's feeling on this point:—

> Yet works on medicine at the present day and for some time past would have us believe that while the common softenings of the brain are results of non-inflammatory degenerations, those of the spinal cord are due to inflammation. What explanation can be given for this seemingly unwarrantable discrepancy?

> My views on this subject have met with only a very partial acceptance in this country, as may be gathered from the fact that in the last edition but one of the Nomenclature of Diseases, issued by the Royal College of Physicians of London, and probably also in the latest edition, as well as in Sir Clifford Allbutt's celebrated new "System of Medicine" (Vol. VII., 1899) there is no mention of softening of the spinal cord other than such as is assumed to be due to inflammation.

It would be sad, indeed, if these quotations really indicated the state of our attitude towards the question at the present time, and I hasten to assure Dr. Bastian that his suspicions are unfounded. If Dr. Bastian had read the article on Myelitis in the current edition of Sir Clifford Allbutt's "System," instead of that which was published 11 years ago, or the article on Myelitis in Osler's "Modern Medicine," or the article in Turner and Stewart's "Text-book of Nervous Diseases," he would have come to an entirely different conclusion and we should not have felt hurt by the suggestion that his writings of 20 or 30 years ago have failed to find the loyal support which they so richly deserve at the present time.

If, on the other hand, Dr. Bastian would have us discontinue employing the term "myelitis" for describing those cases of spinal disease in which thrombosis plays an important part, he raises a difficult question which he will find discussed at some length in both the Systems of Medicine alluded to above. It is too lengthy a subject to enter upon here, but reference may, perhaps, be permitted to two facts: (1) Myelitis does not strictly mean inflammation of the spinal marrow; and (2) syphilitic arteritis, which is the cause of the immense majority of cases of spinal thrombosis, is, after all, an inflammatory process.

The latter part of Dr. Bastian's article is an attempt to put back the clock and to reinstate old fallacious and confusing theories about acute poliomyelitis, and I cannot help expressing regret that it should have appeared. Acute poliomyelitis is as different from acute myelitis, with thrombotic softening, as is small-pox from superficial gangrene, or as is typhoid fever from a gastric ulcer. I can hardly believe that Dr. Bastian would still support the "primary thrombotic theory" of acute poliomyelitis if he were acquainted with the work of the last five years on the pathology and pathogenesis of that disease. The non-specific thrombotic theory was built up on the appearances observed in cases of poliomyelitis examined at lengthy periods after the onset of the disease, and the whole structure of that theory has tumbled to pieces with the careful examination of recent cases; even the débris has been cleared away by the experimental investigations of Simon Flexner and other workers in the same field. No one will deny that thrombosis occurs in the inflammation of poliomyelitis, just as it occurs in inflammation of any tissue, but recent work on the Continent, in America, and England has proved beyond doubt that the lesion of poliomyelitis, both in its endemic and epidemic form, is a widespread inflammation involving, besides the anterior horns, other parts of the cord, as well as the meninges in many cases, and that thrombosis may occur here and there only as a secondary phenomenon. It is most important for the medical profession to realise these facts, to regard the disease as a specific one due to an infective agent which has already been inoculated into monkeys with the reproduction of the identical disease in those animals, and to do all that is possible, by careful observation of the conditions under which it occurs, to advance our scientific knowledge of the disease.

Writing three years ago I expressed my belief that before long acute poliomyelitis would be included in the category of the acute specific fevers. It has the constitutional disturbances, the age incidence, the seasonal exacerbations, the sporadic and epidemic types, the immunity from second attacks, associated with the obscurity as to its bacterial origin, which are shown by measles, scarlet fever, and varicella, and the severe inflammatory lesions, limited to particular tissues, which are met with in scarlet fever, diphtheria, and variola. This belief has only been strengthened during the last three years, and I venture to prophesy that before very long acute poliomyelitis will be included among the notifiable diseases in this country, as it has been already elsewhere. My prophecy will certainly not be fulfilled if Dr. Bastian is right in believing "that there is very much evidence against the view that inflammation is at all a common cause of so-called acute poliomyelitis," and "that vascular occlusions or acute primary degenerations of the very specialised ganglion cells will suffice to account for the great majority of cases."

I am, Sir, yours faithfully,

Wimpole-street, W. E. FARQUHAR BUZZARD.

THE MOTOR FUNCTIONS OF THE STOMACH.

To the Editor of THE LANCET.

SIR,—In one of Mr. H. M. W. Gray's papers on the "Motor Functions of the Stomach," published in THE LANCET of 1908, he ascribes the discovery of secretin to Wertheimer, without even mentioning the names of Bayliss and Starling. As this is only one example of numerous inaccuracies in the papers, it is surprising that they evoked no public criticism at the time. As, however, there is a danger of frequently repeated errors being finally accepted as facts, it is desirable that some of the mistakes in Mr. Gray's recent article in THE LANCET of Dec. 3rd should be corrected.

My first observations on the human stomach with the X rays were made in the horizontal position, and I was led—like Mr. Gray—to believe that the stomach is divided into two parts, anatomically and functionally distinct. When I began to examine the stomach in the vertical position also, I soon found that I had been mistaken, and I am now convinced that there is no such thing as a "middle sphincter." It would occupy too much space to give my reasons in detail, but I may refer Mr. Gray to my paper on the subject in the *Quarterly Journal of Medicine* for July, 1910.

It is easy to see with the X rays that peristalsis begins near the centre of the stomach, where it produces a shallow depression, which increases in depth as it moves towards the pylorus. When it reaches the pyloric vestibule the depression is so great that it almost completely divides the stomach into two parts, but the wave still moves on, and the division is absent in the intervals between the arrival of successive peristaltic waves. When death occurs during digestion the depression produced by a peristaltic wave may be fixed at the point where it happened to be at the moment of death: it is this depression which has been mistaken in anatomical preparations for a third sphincter.

The idea that there is a sharp separation between the chemical processes occurring in the two ends of the stomach is also incorrect. The food taken at the beginning of a meal reaches the pyloric end first, and that taken last is at first uppermost. Some hydrochloric acid, which is secreted mainly in the cardiac end, is carried with the first part of the meal to the pyloric end, where gastric juice and food are thoroughly mixed together by the peristalsis. It is now universally acknowledged (except by Mr. Gray) that there is no peristalsis in the cardiac end; consequently the peripheral part of the food is most acid and the central part may remain for a time alkaline and undergo salivary digestion (Grützner, Cannon). The moderately acid contents of the pyloric end, the very acid food in contact with the mucous membrane of the cardiac end, and the alkaline food in its centre are quite indefinitely separated from each other, as diffusion of the saliva and soluble constituents of the food on the one hand, and of gastric juice and products of gastric digestion on the other, must constantly and rapidly take place, and the movements of the diaphragm, abdominal muscles, and body as a whole all help to mix together the contents of the different parts of the stomach.

I should be glad to know the names of Mr. Gray's "recent radiographers and others" who "assert that the pylorus during gastric digestion descends naturally below and to the left of the umbilicus." In normal individuals I have never seen it either below or to the left of the umbilicus, and all the recognised authorities on the subject, including Barclay, Pfahler, Rieder, Holzknecht, Leven and Barret, Censé and Delaforge, are in agreement with me.

And who are the "recent radiographers" who say that "carbohydrate food begins to pass through the pylorus (displaced as described) in 15 to 20 minutes, and proteid in 30 to 45 minutes"? These are the figures given by Cannon as a result of his observations on cats, but it is now admitted by all who have examined human beings with the X rays that food, whatever its nature, begins to pass through the pylorus at once, and that a considerable quantity can be seen in the small intestine—and even sometimes in its pelvic portion—within a quarter of an hour. Yet Mr. Gray states that the times quoted are "the times when he observes food beginning to pass through the 'middle sphincter,' and he gravely suggests that "these gentlemen (i.e., 'the radiographers and others') mistake the 'middle sphincter' for the pylorus"! What Mr. Gray mistakes for a middle sphincter is beyond my power of imagination.

I quite fail to understand how the relief of hunger pain is evidence in favour of a middle sphincter. If it really prevented the access of food into the pyloric end of the stomach the eating of more food ought to be without influence on the pain. As a matter of fact, I have been able to demonstrate to the satisfaction of Mr. Moynihan [1] that food leaves the stomach with unusual rapidity in cases of duodenal ulcer, and that the delay in the onset of pain is not due to food being held back by the pylorus or by Mr. Gray's sphincter. My observations are confirmed by Barclay, who states that "the picture of a normal stomach exhibiting excessive peristalsis and passing the food on very rapidly is always suggestive of trouble in or about the duodenum."

Mr. Gray can never have seen intestinal segmentation or the interesting appearances recently described by Dr. Barclay of "blobs of food" dropping into the lower part of an atonic stomach, or he would not have rejected the entirely satisfactory explanation offered by Dr. Barclay himself, and made the extraordinary suggestion that the latter is due to segmentation, to which it does not bear even the remotest resemblance.

I am, Sir, yours faithfully,

Weymouth-street, W., Dec. 5th, 1910. ARTHUR F. HERTZ.

THE OWNERSHIP OF MEDICAL PRESCRIPTIONS.

To the Editor of THE LANCET.

SIR,—The law has been declared by an eminent official to be "a ass"; it is comforting therefore to find that it may be occasionally in accordance with common-sense. I think that the opinion on the subject of prescriptions given by Mr. H. Wippell Gadd [2] may, on the whole, though it is not quite free from ambiguity, be so designated. It is gratifying to have legal authority for the tenet that the purpose of a prescription is "limited in time as well as in person." The ambiguity lies in the statement that the prescription, though conditionally, "becomes the absolute property of the person who has paid the fee." What is the meaning of "prescription" here? Is it merely a piece of paper or is it an instrument that can be used for further purposes? It seems to me that there is some analogy between a prescription and a cheque. A cheque is written to empower a banker to pay a certain sum of money to a certain person; a prescription is written to empower a chemist to prepare a certain medicament for a certain person. When the cheque has been presented and cashed, it becomes invalid and useless; it is retained by the banker though it remains the property of the drawer and may be returned to him if required as a voucher of receipt. When a prescription has been made up, the document is sometimes retained by the chemist, but is usually returned to the patient. If it were still of any use to the prescriber I have no doubt that he would claim it and have it restored to him; but it would be to him valueless, only waste paper. There is some reason for the chemist to retain it, in case any doubt might arise as to the correctness of the writing or of the dispensing of it, although a copy, which he usually makes, is almost always sufficient. But on the whole, unless it be destroyed, it is perhaps best for the patient to retain the document (though he must be prevented from misusing it), as he may want it made up first in one place and then in another before its period expires, when it becomes as useless as the cashed cheque. Also he may sometimes have occasion to refer to it on subsequent occasions—e.g., to show to another medical man what treatment he had received before. For instance, some time ago I was treating a patient with pot. iodid. in moderate doses with moderate success; he told me that he had previously derived much benefit from very large doses. I acted on the hint with complete success.

I think that Mr. Gadd suggests the best road out of the difficulty, and one which, if generally followed, will lead to success. The proper way to limit the time of the prescription (after which it is, or should be, as dead as a cashed cheque) is, I believe, that which I have adopted for some time and to which I alluded in a letter published in

[1] B. G. A. Moynihan: Duodenal Ulcer, p. 108; London, 1910.
[2] THE LANCET, Oct. 1st, 1910.

THE LANCET on Oct. 31st, 1908—viz., to print conspicuously on the face of every prescription, "Not to be repeated after ..... days." This seems to be quite in accordance with Mr. Gadd's ideas, when he speaks of "the directions on the face of a prescription" which pharmacists would "respect and faithfully observe." This direction of a time-limit ought, I maintain, to be given on every prescription. If generally adopted its propriety would be readily acknowledged. A direction, "Rep. ad lib.," would be an exception. Limitation as to time would also almost entirely prevent transference of a prescription to others—e.g., in such a case as this: A patient has a prescription given to him (or her) by a physician in England; he afterwards comes to Australia and has it repeatedly made up there and distributes it among his (or, of course, usually *her*) friends, some of whom it may suit, others may be unaffected, to others it may be noxious. Thus it would be hardly necessary to express a limitation to the individual patient on the face of the prescription.

If a prescription is seized and made improper use of by a quack the way to deal with such action is by an Act for the suppression or limitation of quackery. There is another point wherein I think that prescriptions should be improved by greater strictness. Instead of having a mere unrecognisable hieroglyphic representing the initials of the prescriber, who is possibly and probably quite unknown to the dispenser, his name, titles, and address ought to be written or printed plainly on the face of the prescription, so that he may be identified. I am, Sir, yours faithfully,

F. LUCAS BENHAM, M.D., B.S. Lond., M.R.C.P. Lond.

Exeter, South Australia, Nov. 1st, 1910.

POLYDACTYLISM AND HEREDITY.

To the Editor of THE LANCET.

SIR,—The following cases of polydactylism may be of interest to your readers. A woman, aged 40 years, who had an extra finger on each hand and an extra toe on each foot, had six children, all girls. Five of these showed the deformity in a greater or less degree. Given in order of age they were affected: (1) right hand and left foot; (2) both feet; (3) both feet and both hands; (4) both feet and both hands; (5) right hand and left foot; the sixth child showed no signs of deformity, and there was no history of any of the relatives of either the mother or father having showed signs of the condition. I am, Sir, yours faithfully,

South Shields, Dec. 3rd, 1910. A. BANKS RAFFLE.

INVALIDITY INSURANCE.

To the Editor of THE LANCET.

SIR,—The question of invalidity insurance for the industrial classes is very much in the public mind just now owing to the announcement that the present Government, if returned to office after the election, will introduce such a scheme in the next session of Parliament; and while it is not my purpose to contribute directly to the discussion of such a scheme, indirectly some facts, which have emerged in the course of my own experience, may prove of more than passing interest to medical men.

It is a striking fact that while mortality is improving invalidity is increasing. The improvement in mortality has been accounted for as follows: (1) the increased protection afforded to infant life; (2) the improvements in sanitary science, which have done much towards averting epidemics and enabling communities to deal more intelligently and efficiently with them when they occur; and (3) the great advances in medical and surgical skill, and the improved treatment of sick at home and in hospitals, which have saved vast numbers from attacks which would otherwise have proved fatal.

The natural conclusion to be drawn from the improvement in mortality would be that there was also less sickness, but it is an indisputable fact that sickness is actually on the increase. It may be that knowledge of the science of public health is teaching men to take precautionary measures, and that one result of these precautions is that people now lie up where previously they would have continued at work. On this assumption there would obviously be, in the first place, an increase in the rate of sickness, and, in the second, a reduced rate of mortality, if only on the principle that "a stitch in time saves nine."

The company with which I am associated originated a system of sickness insurance for professional and business men some 25 years ago, and has therefore acquired a somewhat unique experience in this department, and the privilege I enjoy of access to their records has enabled me to compile some valuable figures, which go to show that one week of sickness benefit per annum becomes payable to every member assured between the ages of 20 and 35. Between ages 45 and 50 this payment is increased to two weeks per annum. Between 55 and 60 it works out at over four weeks per annum, and between 60 and 65 to over six weeks per annum. Then nearly 25 per cent. of the members assured are incapacitated for one week at least in each year between the ages of 20 and 40, and this increases steadily until it reaches 40 per cent. between the ages of 60 and 65.

Another feature brought out by an examination of the experience referred to is that of the average number of weeks' pay made to each member who is sick during each year. From 20 to 25 this amounts to nearly four weeks; from 40 to 45 the duration has grown to rather over six weeks; from 50 to 55 it is more than nine weeks; and from 60 to 65 the average duration of sickness is just under 16 weeks.

These figures tell their own story, one part of which is that no system of invalidity insurance can be thoroughly sound unless either the rates of premium increase with the increase in age, in which event they would be prohibitive in the later years of life, or, secondly, a fixed premium is charged. This, like a life premium, must be something more in the early ages than is required for the claims at those ages, the balance being accumulated securely at compound interest, so that the heavier sickness of later life may be met out of this source without an increase in the annual contribution. I imagine that both actuaries and medical men will watch with great interest a development so interesting as that foreshadowed in the Government programme.

I am, Sir, yours faithfully,

W. A. ROBERTSON, F.F.A.,
Actuary, Century Insurance Company, Edinburgh.

Nov. 25th, 1910.

A CORRECTION.

To the Editor of THE LANCET.

SIR,—The remarks which you kindly made in reference to my work in Suffolk in connexion with the epizootic of plague on p. 1568 of your issue of Nov. 26th err in one particular. In fairness to the gentleman holding the post I ought to tell you that I am not the assistant medical officer of health for Ipswich. Prior to the appointment of an assistant I undertook the work of the medical officer of health in his absence, but now, apart from my appointment by the East Suffolk county council, the only official position I hold is that of bacteriologist to the East Suffolk and Ipswich Hospital.

I am, Sir, yours faithfully,

Ipswich, Dec. 2nd, 1910. H. LLEWELLYN HEATH.

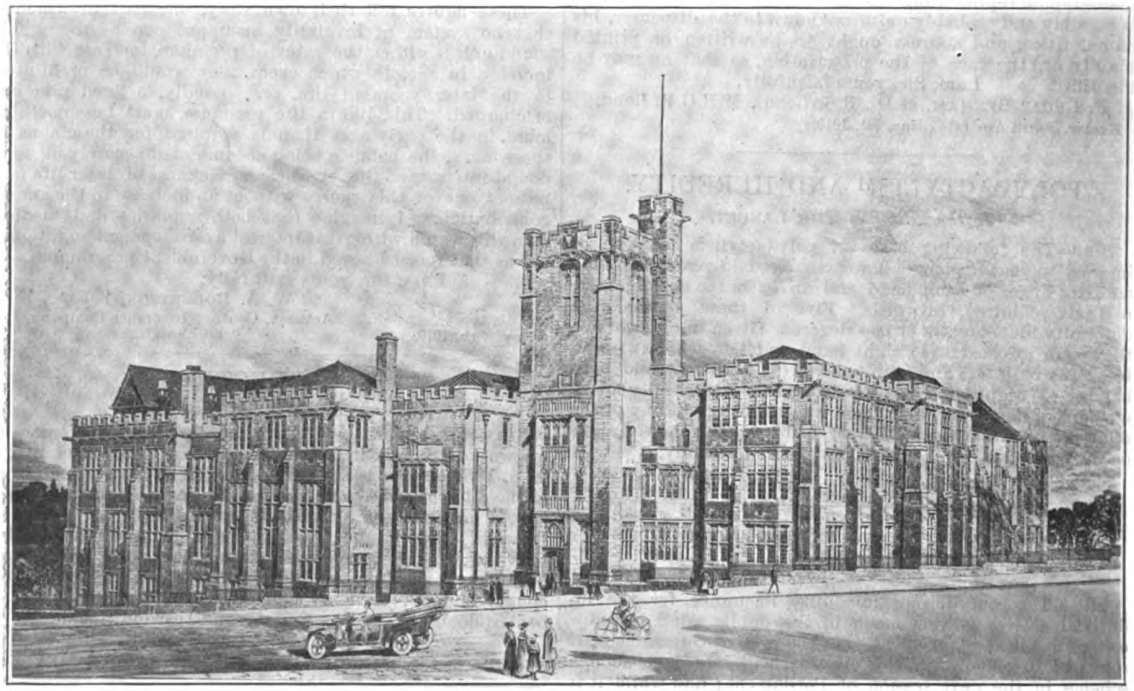
METROPOLITAN HOSPITAL SUNDAY FUND.—Under the presidency of the Lord Mayor, the Right Hon. Sir Thomas Vezey Strong, a council meeting of this Fund was held at the Mansion House on Nov. 30th, when the report for the year 1910 was ordered to be published. The report states that the total collection amounted to £71,550, of which £40,778 were collected in places of worship, £1635 more than in 1909. On the motion of Archdeacon Sinclair, the sum allotted by the Fund to the purchase of surgical appliances was raised from 5 per cent. to 7½ per cent. Referring to the subject of cinematograph shows, Archdeacon Sinclair said that pending the appeal in a certain case by the London County Council with regard to the licensing of these exhibitions, the Fund could not arrive at a decision with regard to these shows being held on Sundays for the benefit of hospitals. He thought, however, that the subcommittee which had the matter in hand would arrive at a satisfactory decision. It was agreed by the council to recommend that the sum of £100 should be voted to the secretary, Sir Edmund Hay Currie, who is suffering from bronchitis, to enable him to take a holiday abroad, and the sum of £20 towards a testimonial to Mr. Cole of the Christian Evidence Society. The annual meeting of the Fund will be held on Dec. 16th.

THE NEW WING OF THE UNIVERSITY OF BRISTOL.

(FROM OUR SPECIAL CORRESPONDENT.)

THE large block of buildings which has just been completed and equipped at a cost of £50,000 was formally opened by Lord Winterstoke, Pro-Chancellor to the University, on Nov. 15th, and is a splendid pledge of the firmness with which those in authority mean to establish the University of Bristol. It is designed to hold the departments of chemistry and physiology, which have till now occupied inadequate quarters in the old building. The money has been provided by the £100,000 subscribed by Mr. H. O. Wills, the Chancellor of the University, out of which five chairs have also been endowed. The site is part of that obtained by purchase of the Blind Asylum and its grounds, and it adjoins that of the other buildings so closely that it has been possible to make the corridors of the older north wing continuous with those of the physiological section of the new wing. Further extensions are to be expected next year when the occupants of the Blind Asylum move. It should be remarked that the transference of physiology and chemistry from the old buildings to the new has set free much space for the use of other departments.

FIG. 1.



General elevation of the new wing of the University of Bristol.

Physiological department.—The designs for this department are the result of a careful examination of the physiological buildings of other universities. Professor A. F. Stanley Kent, in many instances in conjunction with the architects, has visited Oxford, Cambridge, Edinburgh, Glasgow, Manchester, Liverpool, Leeds, Sheffield, Strasburg, Freiburg, Nancy, and Lausanne. The accommodation thus provided is mainly in that part of the building which lies to the right of the tower in the accompanying elevation. (Fig. 1.) On the ground floor is a lecture theatre which will seat 150 students, with specially designed folding screens to carry diagrams, illuminated by electric light focussed on them. There is also an electric lantern for use with lantern slides, and a Zeiss electric projection apparatus for showing microscopical specimens. Adjoining this theatre are the professor's room, a museum and library, and a good preparation room. On the first floor the chief room is a students' laboratory of chemical physiology, illustrated in Fig. 2. Close to this is a large preparation room, with store and dark rooms; and another room on the same floor is devoted to the study of physiological optics, vision, photo-micrography, gas analysis, &c. On the second floor there is a large histological laboratory, in which a weaving-shed glass roof has been adopted in order to provide the maximum amount of illumination without allowing the direct entrance of sun rays. The accommodation in this room is increased by the addition of a gallery, in accordance with the plan followed at Cambridge. On this floor there are also a preparation room for histology and a large laboratory for the study of experimental physiology in the preparation room for the same purpose. At a little distance from these rooms, but still on the same floor, there are a demonstration theatre with a good top light and a preparation room serving it. A galvanometer room, a research laboratory for the professor, and a small store are also situated on the second floor. Finally, in the basement are a room for the study of cardiac physiology, a subject with which Professor Stanley Kent's name is closely associated, a dark room, a constant temperature room, an incubator room, and a cold store. This department is therefore admirably equipped, not only for the teaching of elementary and advanced physiology in all its branches, but also for research.

Chemical department.—This department, consisting of a basement and two floors, contains working places for 200 students. In the basement are the main stores communicating by a lift with the preparation rooms for the lecture theatre and senior laboratories on the ground floor, and with the store room for the main laboratory on the first floor. The basement also contains a laboratory accommodating 20 students, specially arranged for candidates for the Diploma of Public Health and those studying the methods used by analytical chemists. In addition to special rooms for gas analysis and photo-chemistry, the main feature of this floor is a large metallurgical laboratory, provided with heavy electrical currents for electro-metallurgical investigation. The ground floor contains a lecture theatre seating 150 students (a magnificent room) and a lecture room, each having its own preparation room. There is also a museum containing, among other things, a very complete collection of synthetic dyes. The senior laboratories and balance room are on the same floor, and the professor's private room and laboratory

divide the organic laboratory from that for physical chemistry, so that the professor is in close touch with his advanced students. On the first floor the principal room is the junior laboratory (Fig. 3), in which 80 students can work at the same time. There is a chemical library on the same floor, also a small laboratory specially designed and equipped for the investigation of problems connected with agricultural chemistry.

FIG. 2.

The Laboratory of Chemical Physiology.

General design.—The new wing is as large as the block of buildings which has up to now served all the departments of the University excepting those of the Faculty of Medicine. As has been already mentioned, it is continuous with the old block, the ground floor of the one communicating directly with that of the other; but the new wing is on sloping ground and at a slightly lower level than the old wing. It is this circumstance which has made possible the construction of a well-lighted basement. The new wing provides the University with a new frontage on Woodland-road, on the other side of which the new Baptist College (itself in affiliation with the University) is to stand. The main entrance from this side is at the foot of the tower; it opens upon the staircase running up from the basement to the tower and supplying both departments. Each landing communicates with two corridors, one running through a floor of the chemical department and the other through a floor of the physiological department. Architecturally it is an imposing pile of buildings, and the tower is a striking feature in a city of towers and spires, for the University stands on the slopes of a hill near the summit at which the fort of Prince Rupert's time stood, and overlooks the western half of the city. The external walls are of red pennant stone, and Box ground stone has been freely used for the dressed stonework. The floors, which are fireproof, are of steel and concrete; in some instances armoured concrete has been used. For the most part the internal partitions are capable of removal without involving constructional changes. The joinery is of Oregon pine, oak having been used to a small extent. The buildings are warmed throughout with hot water upon the low-pressure principle with accelerated circulation, Haden's patent "Turbo" accelerator being used. The building is lighted very thoroughly throughout by electricity, and all the laboratories are wired for experimental purposes. The ventilation is effected by means of powerful fans; the main fan is situated in the upper portion of the tower. Several systems of draught flues are also provided in connexion with the various benches, fume cupboards, and other fittings in the laboratories, each of them having its own fan.

The general solidity of the building and the harmonious scheme of external design reflect the greatest credit on the architects, Messrs. Oatley and Lawrence of Bristol. The works have been carried out in less than 12 months by the builders, Messrs. Cowlin and Son, also a Bristol firm. The whole building is manifestly the outcome of a generous conception of the functions of a modern university, coupled with efficient and laborious execution of details; and it pledges those who control the general policy of the University, both now and in the future, to large ideas and thorough work. The photographs, specially taken for THE LANCET, are by Mr. Frank Marsh, Whiteladies-road, Clifton; the plan of the elevation was kindly lent for photographic purposes by the architects.

FIG. 3.

The Junior Chemical Laboratory.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Workhouse Accommodation.

THE various boards of guardians of Manchester are still discussing the best way of lessening the overcrowding of their hospitals. In the Manchester township last week the question arose as to whether or not the guardians had the power of detaining cases of "pulmonary tuberculosis with expectoration." Notwithstanding the reply of the Local Government Board to an inquiry from South Stoneham, that it could be done under Section 22 of the Poor-law Amendment Act, 1868, the clerk said that no board of guardians or any other authority had power to detain a case of consumption, while one member of the board remarked, "the guardians are absolutely powerless in one of the most appalling parts of their work." At the meeting of the South Manchester guardians on Nov. 25th the overcrowded state of the children's ward at the hospital was brought up. The workhouse committee had recommended that a children's hospital should be built with 300 beds, and so arranged as to be easily extended. This was discussed *pro* and *con.*, but on the motion of Mr. F. B. Hargreaves was referred back. He said that many of the beds were occupied by cases which ought not to be there. Another difficulty they have to contend with is the number of phthisical cases under their charge. At present there are 141 male and 77 female consumptives, while there was only provision made for 96 men and 36 women. Dr. T. N. Orchard said that 59 cases were distributed among other wards. There was no isolation of phthisis. Dr. Garrett, another medical guardian, took a more serious view apparently than his colleague, and there can be no doubt that there is overcrowding both of children and consumptives, and no time should be lost in remedying the evil. In the Prestwich union they are troubled with an excess of lunatics, who are not fit to go out and for whom no room can be got elsewhere. No help is to be obtained from the Prestwich Asylum, for that is also overcrowded. All this reveals a very serious state of affairs.

Value of Light.

November is a dark month at the best, and if, as in Manchester, the darkness is intensified by the black pall of smoke that broods over the city, it only needs the addition of an atmospheric fog to convert the city into something terror-exciting, something only fitted for the wanderings of lost souls. The Manchester and Salford Sanitary Association and the Smoke Abatement Society have done what they could to lessen the production of smoke, but without making any very great impression on conditions due to such complicated causes. On Dec. 2nd a deputation from the former society interviewed the gas committee of the corporation with the view of obtaining a reduction in the price of gas, as the increased use of gas will modify the production of smoke. Mr. T. C. Horsfall urged that in Manchester the people were debarred from the agency of fresh air and light owing to the prevalence of smoke and fog, which were highly detrimental to the healthy development of the citizens. The deputation had come to beg the committee to encourage the use of gas in place of the small smoky fires by a reduction in its price. Sir Alfred Hopkinson, Vice-Chancellor of the University of Manchester, supported these views, and hoped that the magistrates would deal with gradually increasing severity with those responsible for the production of black smoke. Others of the deputation spoke, but without producing any very perceptible impression on the chairman of the gas committee. He was sympathetic, but pointed out that he had to find £50,000 a year out of the gas profits for the relief of the rates. It is a question worth considering whether it would not be more economical in the long run to improve the public health by spending this money in cheapening the price of gas rather than in relieving the rates, which relief, by the way, is shared by the non-users of gas. An improved public health is a splendid economy for a community.

"Slink" Meat.

There must be a roaring trade in "slink" meat in our large towns if what came to light in Preston the other day may be taken as a fair illustration. During the past few weeks no less than 7106 pounds had been ordered to be destroyed by the meat inspector. Dr. Brown, chairman of the health committee, said that a large amount of the meat was brought into the town, but the authorities knew those who dealt in doubtful meat, all of which was strictly inspected. In Cheshire there are, or were quite recently, men who were well known to be nothing but "slink" butchers. They apparently went openly about their business, none making them afraid, which looks as if the present legal prosecutions against the sale of bad meat were insufficient.

Plague Precaution.

It is satisfactory to know that our local authorities are keenly alive to their responsibilities. At the last meeting of the port sanitary authority the medical officer, Mr. W. F. Dearden, reported that in compliance with the requirements of the Local Government Board he had instituted an inquiry as to the extent to which the wharves and warehouses of the port were infested with rats and the methods adopted to keep down their number. He had been assisted by the general superintendent of the Ship Canal Company. It was ascertained that since the practice of keeping cats in the warehouses had been adopted the number of rats had been considerably kept down; that they were very seldom noticed in the transit sheds, and that no dead rats were found among cargo. The Ship Canal Company and all others concerned had been warned to keep a sharp look-out for dead rats, and to advise the medical officer of any unusual mortality among them. If rats were absolutely exterminated, which is a very distant possibility, the purpose of their existence might be revealed to us. Their disappearance, it seems, would result in no dangerous disturbance of Nature's scheme, but is it not certain that the pulex would then find another host?

The Manchester Hospital for Incurables.

The annual meeting of the Manchester Hospital for Incurables was held on Nov. 30th. There are two homes devoted to this work, one at Mauldett, Heaton Mersey, and the other at Walmersley House, near Bury. Of these patients 102 are free, while there are 16 for whom full or partial payment is made. There are also 12 pensioners who receive £20 a year. Those who visit the homes testify to the comfort and to the surprising cheerfulness of the patients, for whom the prospect must be inexpressibly sad. Being a most useful and humane, as well as a charitable institution, one looks, unfortunately, but too often quite as a matter of course, for an adverse balance-sheet. In this case, happily, it is not more than £335. All should sympathise in such work and the deficit ought immediately to be wiped out.

Dec. 6th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

The Medical Treatment of School Children.

IN spite of the powers given to local education authorities by Section 13 (*b*) of the Education (Administrative Provisions) Act, 1907, to make arrangements for attending to the health and physical condition of children educated in public elementary schools, few authorities have made use of their powers. As a result a large number of children found defective on medical examination are being treated in the general hospitals. The governing bodies of a few of these institutions have protested, more or less successfully, against the adoption of this course. The latest to do so is the board of management of the Herefordshire General Hospital, who passed a resolution on Dec. 3rd that after June 30th, 1911, such children would not be eligible for treatment at the hospital. This decision was arrived at after the board had considered a memorandum which had been drawn up by the medical staff of the hospital. In that memorandum it was pointed out that the object of voluntary hospitals should be to relieve that large body of poor people who were just above those whom the local authorities were empowered by the Legislature to treat out of public funds, and yet who were not in a position to pay for special or costly treatment by their own medical man. It was further pointed out that neither the money of subscribers nor the endowments of hospitals were ever intended to relieve the rates by doing the work either of the Poor-law or education authorities, so that these bodies, in attempting to make use of such a charity as a hospital

to meet their responsibilities, were apparently hoping that custom would in time force upon the hospital authorities the duty of providing for these patients. An attempt was thus being made to make one class of the community work for the rest without payment, and in the opinion of the medical practitioners in the county such an attempt should be resisted. As regards the right of the board to refuse admission to those children who presented letters of recommendation from subscribers, the staff reminded the board that already restrictions existed and that treatment was refused to parturient women, consumptive patients, infectious cases, cases for dental treatment (except for extraction), and lunatics. The memorandum concluded by stating that by continuing to treat these children, whose treatment should be paid for by the State, the board would be incurring the hostility of the general practitioners in the county, some of whom had repeatedly reproached the hospital staff for assisting in the carrying out of such gratuitous treatment as that indicated.

The Inspection of School Children: a Parent Fined.

At the Bridgwater county petty sessions held on Nov. 28th a man was charged "with having wilfully neglected his daughter, aged 7 years, in a manner likely to cause her unnecessary suffering, or injury to health, including injury to eyesight." Evidence showed that the defendant, who resided in a neighbouring village, had been given repeated notice to send his child to Bridgwater to be examined by the ophthalmic surgeon of the Somerset education committee, the girl's eyesight being very defective. The defendant ignored every notice sent to him, and medical evidence showed that spectacles were urgently required. A fine of £2 and costs was imposed. This is the first prosecution of the kind instituted by the Somerset county council.

The Care of Imbeciles.

At a meeting held at Devizes on Nov. 21st, when representatives of nearly all the Wiltshire guardians were present, it was decided to approach the Local Government Board with the suggestion that special institutions, distinct from asylums, should be provided, in which all imbeciles should be treated. Mr. Thompson, the Local Government Board inspector, who was present, stated that the Local Government Board would give every assistance in promoting the scheme. After some discussion a deputation was appointed to interview Mr. Davey at the Local Government Board upon the matter.

The Didworthy Dispensary for Tuberculosis and Diseases of the Lungs, Plymouth.

The Didworthy Dispensary for Tuberculosis which has been established in Frankfort-street, Plymouth, was opened on Dec. 5th. The institution is for the poor and needy, and no ticket of recommendation will be required, the medical officer giving gratuitous service. Early cases of consumption will be sent to Didworthy, whilst advanced cases of the disease will be followed up at their homes by nurses. The financial support of the dispensary has been satisfactory, and up to the present about £160 have been received, which will be sufficient to carry on the work for the first 12 months. The Earl of Mount Edgcumbe has given £20 and Mr. Waldorf Astor £100, with an additional £100 for the distribution of literature bearing upon tuberculosis.

Workhouse Accommodation in Carnarvon Union.

The accommodation for the sick in the Carnarvon union has for a long time been unsatisfactory. Little or no classification is at all possible, so that consumptives, imbeciles, and other cases of sickness are treated in the same building. The only way in which real improvement can be effected appears to be by providing a new infirmary with modern equipment, and at a recent meeting of the board of guardians this course was urged by Mr. Hugh Williams, the Poor-law inspector for Wales, and Mr. B. T. Kitchen, the architect of the Local Government Board. Several guardians, however, advocated certain alterations to the existing infirmary building, and by a majority of three votes this proposal was adopted. At a further stage of the meeting it was decided to postpone the whole matter indefinitely in view of possible legislation with regard to the administration of the Poor-law generally. It is hardly likely that the Local Government Board will be satisfied with this unsatisfactory conclusion. The Abergavenny board of guardians has been threatened by the central authority with dissolution unless it provides better accommodation for its sick poor, and if the same course were adopted with respect to the Carnarvon board the members might perhaps reconsider their ill-advised decision.

Medical Officer of Health for Cardiganshire.

The county council of Cardigan has decided to appoint a medical officer of health at its meeting in February next. The salary has been fixed at £450 per annum, and the person appointed is to pay his own travelling expenses. The duties of the office will include those of school medical officer, and candidates for the appointment must be able to speak Welsh. Inadequate as this salary is, an attempt was made, though without success, to reduce it to £400 per annum. The population of Cardiganshire at the last census was 60,237, and the area is 440,630 acres.

Bristol Medical School Dinner.

The annual dinner of the Bristol Medical School was held on Nov. 29th at the Royal Hotel, Clifton, under the presidency of Mr. James Taylor. The guest of the evening was Sir Alfred Keogh, and there was a large attendance. Sir Alfred Keogh, who received a most enthusiastic reception, in the course of an interesting speech dealing with the work of the Royal Army Medical Corps, stated that he considered the Royal Army Medical Corps was highly efficient and doing a great work for science.

Death of Dr. Richard Mathias.

Through the death on Nov. 22nd of Dr. Richard Mathias of Radyr, near Pontypridd, a promising career has been prematurely cut short at the early age of 42 years. Graduating in arts at Cambridge in 1893, Richard Mathias later entered the medical school of Guy's Hospital and took the double qualification of the London Colleges in 1896, subsequently graduating in medicine at his university. In 1899 he succeeded to a practice at Radyr and Taff's Well, a district situated midway between Cardiff and Pontypridd. His family connexions were largely interested in the industries of the locality, but, quite apart from any advantage which this might be to him, his professional skill soon secured for him the confidence of his patients, while his kindliness and generous thoughtfulness for others made him popular with all classes. He leaves a widow and one child to mourn their loss.

Dec. 6th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Voluntary Health Visitors of the City of Edinburgh.

THE question of the prevention of infantile mortality has been vigorously taken up in most of the large cities of the kingdom, and many organisations have arisen the object of which is the remedying of this evil. Among these, the body known as the Voluntary Health Visitors of the City of Edinburgh takes a high place, both on account of the results of the work and the efficiency of the organisation. In the beginning of 1908 the Charity Organisation Society appointed a subcommittee to consider the various possible methods of dealing with infantile mortality in Edinburgh, and as a result, with the coöperation of the medical officer of health, the band of Voluntary Health Visitors was organised and began work in the end of 1908. The work, though voluntary, is done in connexion with the Public Health Department and under the inspection of the medical officer of health, Dr. A. Maxwell Williamson. When the work was taken up the public health committee of the town council appointed one salaried health visitor, whose duty it is to pay the first visit as soon as possible after notification of the birth. Only the very poor families are visited—of the class in which there is no family doctor. After the first visit has been paid the official health visitor hands on the name of the case to the secretaries of the voluntary health visitors, and then these visitors undertake the supervision of the infant for the first year of life. The visitors now number between 250 and 300, and the cases under visitation number over 1590. The city is worked in 70 districts, the visitors being supervised by captains who have charge of one or more districts, the whole work being organised by the honorary secretaries, Mrs. Somerville and Mrs. Hamilton Maxwell. The visitors are supplied with printed forms on which they fill in particulars as to

tne condition of each infant under their care. They are required to report in this way fortnightly, the forms being sent in to the medical officer of health. Infants of Roman Catholic parents are undertaken by Roman Catholic visitors, and Protestants by Protestant. When the work was initiated it was endeavoured, so far as possible, to make use of visitors already at work in the district, their numbers being supplemented whenever necessary. In spite of the tradition that the work of voluntary workers cannot be depended on to last, the character of the work of the voluntary health visitors of Edinburgh has, on the whole, improved in quality during the two years of their existence. Notwithstanding the very considerable amount of trouble involved in the visiting and in the filling up and sending in of the fortnightly reports the work is being done with commendable regularity, and in only a small number of cases has the reporting been done irregularly. The credit of this must partly be given to the able manner in which the honorary secretaries organise the work and keep alive the interest of the visitors in the scheme. Short courses of lectures are arranged for the visitors during the year. The lecture courses for this winter are: (1) a preparatory course of six lectures by Mrs. B. Russell, L.R.C.P. & S. Edin., M.D. Brux.; (2) a short course of lectures, by Dr. R. W. Philip, on Tuberculosis; and (3) five lectures, by Mrs. George Kerr, honorary secretary City of Edinburgh Charity Organisation Society, on Training for Service. A fee of 2*s.* 6*d.* is charged for each course of lectures. Small handbooks are given to the visitors, furnishing information with regard to medical and other charities in the city, the aim being to educate the visitors in all matters touching their work. The expenses to the city of the Voluntary Health Visitors amounted in 1908 to between £11 and £12. This sum did not include stationery which was supplied by the Public Health Department. The fees to lecturers were defrayed by the sale of lecture tickets to the visitors. The expenses to the city this year will amount, it is expected, to not more than £20, the increase being partly due to the increase in the work and partly to the expense of the forms for the fortnightly reports, which were introduced since the beginning of the year. For the amount of work done—the visiting and fortnightly reporting on nearly 1600 infants—this expense is remarkably small, and is interesting as showing what resources in the way of purely voluntary work may be called into activity provided efficient organisers are found. Edinburgh is rich in hospitals and dispensaries and visitors are kept well informed as to where they may send their cases for medical and surgical advice. A weekly consultation is held in connexion with the out-patient department of the hospice where visitors may send infants to be weighed, and two of the voluntary health visitors undertake to weigh at their houses infants who cannot be taken out for this purpose. At the hospice a milk depôt is worked on a small scale. In connexion with the Voluntary Health Visitors' organisation a cradle committee manufactures cradles out of banana crates, which are sold to the mothers at 1*s.* 6*d.* each, and another committee provides baby clothing which is sold to the people at low rates, and cooking classes are arranged for the mothers. A fortnightly visitors' meeting lasting for one hour is held in the City Chambers, when reports from the various committees and from the hospice are read. The secretaries also endeavour to arrange for a short address to be given at each meeting on some particular branch of social work. As to the results, the only figures yet available are those relating to the first year of the work, 1909, as given in the annual report of the medical officer of health. Infantile mortality in Edinburgh has never reached so high a figure as in many of the large manufacturing towns. In 1908, before the present work was begun, the rate was 114 per 1000 births. In 1909 the rate fell to 113. At first sight the decrease was small, but, as Dr. Maxwell Williamson pointed out when addressing the visitors on the subject, the rate was undoubtedly kept up in 1909 by a high mortality from zymotic diseases, notably in pertussis. In the deaths classified as due to diarrhœal and digestive disorders, in which direction, presumably, the effect of the work of the health visitor would most clearly be seen, there was a marked reduction, the figures being 77 deaths in 1909, against 113 in 1908, while the deaths under one year classified as due to starvation, malnutrition, atrophy, debility, and marasmus fell from 111 in 1908 to 75 in 1909. In the areas marked by the medical officer of health as being those in which the conditions were most adverse, and where the mortality in 1908 was calculated as 160 per 1000 births, there was a reduction in 1909 to 154 per 1000 births, while deaths from overlying, which numbered 18 in 1908, fell to 11 in 1909. In the present year the mortality so far has been under 100 per 1000 births, and unless in the last two months of the year there is an unusually high death-rate the figures for the year should show great improvement.

Statistical Report of Glasgow University.

The secretary of the University Court has just issued the report of statistics, &c., relative to the University of Glasgow for the academical year from Oct. 1st, 1909, to Sept. 30th, 1910. The report shows that the teaching staff consisted of 32 professors, 54 lecturers, and 88 assistants and demonstrators. The salaries paid to the principal and professors amounted in all to £26,512 7*s.* 1*d.*, to lecturers £8217 4*s.* 8*d.*, and to assistants and demonstrators to £9747 3*s.* 10*d.* Pensions amounting to £4935 2*s.* 6*d.* were paid to retired professors. During the year the total number of matriculated students was 2728 (including 642 women), as compared with 2699 (including 695 women) for the preceding year. Of these 1264 (including 534 women) were enrolled in the Faculty of Arts, 449 (including 24 women) in the Faculty of Science, 61 (including 1 woman) in the Faculty of Theology, 701 (including 71 women) in the Faculty of Medicine, 204 in the Faculty of Law, and 49 (including 12 women) in a single class. The following degrees were granted in medicine:—M.D.: With high commendation, 2; with commendation, 4; ordinary, 9. M.B., Ch.B.: With honours, 3; with commendation, 7; ordinary, 84. The total degrees in medicine were thus 109.

Dec. 5th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Congress of the Royal Institute of Public Health.

THE Congress of the Royal Institute of Public Health is to meet in Dublin next summer, and a meeting of citizens was held last week in the Mansion House, under the presidency of the Lord Mayor, to make preliminary arrangements. An influential local committee was formed, and it was decided to invite Lord Iveagh to accept the presidency of the congress. No better choice could have been made, for Lord Iveagh, besides being head of Messrs. A. Guinness and Co., the greatest employers of labour in Dublin, has shown a practical interest in the housing of the poor both in Dublin and London. He has provided the funds for clearing various slum areas and substituting modern blocks for the old rookeries.

Dublin City Bacteriologist.

A position of some interest has arisen in connexion with the appointment of a bacteriologist for the city of Dublin. The choice of the corporation fell on Dr. M. J. Russell, medical officer to one of the city dispensaries. The appointment is, however, subject to the sanction of the Local Government Board, and this has been refused. In a letter to the corporation the Local Government Board remark that Dr. Russell, owing to other engagements, "could not be in a position to undertake the very responsible duty of advising the corporation of Dublin on a subject which requires close and unremitting work in the laboratory;" and that "it it is, in the Board's opinion, essential that if the person appointed is to command the confidence of the public and of the medical profession he should devote his time largely, if not entirely, to bacteriological work.

A Well-fought Election.

For some weeks past much interest has been taken in the neighbourhood in the election of a medical officer for Mountbellew Dispensary District in the county Galway. On two occasions the guardians met for the election, but on both the voting was equal between two candidates—Dr. O'Kelly and Mr. J. J. Egan. Only one guardian was absent, and one guardian who was sick was carried into the board room in a chair. The chairman has no casting vote, and therefore a third meeting had to be called. On this occasion there was a full board, and Dr. O'Kelly was elected by one vote. A

district inspector and eight constables were present to maintain the peace.

The Lord Chief Baron and Medical Evidence.

While summing up in a case heard before him last week the Lord Chief Baron Palles made some severe remarks as to the kind of medical evidence which, he believed, is given in the Irish courts. He said the conduct of the particular case had been very pleasant to him, for it was one arising out of railway injury but had not involved medical witnesses in that terrible difference of opinion which very often existed between them. Lord Chief Baron Palles is voicing the opinion of many members of the medical profession in suggesting that some of the "expert evidence" given in court is not creditable to the profession.

Royal Medical Benevolent Fund.

At the annual meeting of the Irish Medical Association in 1909 the president, Sir William Smyly, made an offer of a special donation of £20 to the Royal Medical Benevolent Fund on condition that at least half the medical practitioners of Ireland would contribute at the rate of one penny a week for the year 1910. At the meeting of the central committee of the fund last week the secretary had to report that only 790 out of 2200 medical practitioners in the country had contributed for the year 1910, and that the fund was therefore not in a position to claim Sir William Smyly's donation.

Belfast Board of Guardians.

At a meeting of the Belfast board of guardians, held on Nov. 29th, a strong resolution was passed protesting against the action of the Government in ordering a proportionate abatement of the sum payable in respect to the expenditure incurred by it for medical and educational purposes during the financial year ending March 31st, 1911. The guardians consider they are entitled to the standard amount of recoupment—in respect of medical and educational expenditure (£3942 16*s.* 11*d.*)—that has been paid in the past, otherwise the deficiency will fall on the ratepayers already overtaxed, or the guardians will have to give less assistance to the poor.

Health of Belfast.

The report of the medical officer of health of Belfast presented to the monthly meeting of the city corporation, held on Dec. 1st, showed that for the four weeks ended Nov. 12th 169 cases of infectious disease were notified, as compared with 121 in the preceding month, and 119 in the corresponding month of 1909. The increase applies to all notifiable diseases, the major portion being due to scarlet fever and erysipelas, of which 94 and 30 respectively were notified, as against 68 and 17 the previous month, and 61 and 27 in the corresponding period of 1909. 28 cases of tuberculosis of the lungs were notified. The epidemic of scarlet fever—though mild, fortunately—had so taxed the resources of the municipal fever hospital at Purdysburn that the board of guardians had to be asked to relieve the congestion by taking in cases to the union infirmary.

Ulster Medical Society.

At the second meeting of this society in this session, held in the Medical Institute, Belfast, on Dec. 1st, Dr. Cecil Shaw read a paper, "Making a Cure at a German Spa," illustrated by original photographs shown by the lantern. Mr. John O'Doherty read a paper on Tubercular Appendicitis and its Relation to Tabes Mesenterica. Dr. G. A. Hicks showed some specimens of Fibroid Tumours of the Uterus with Degenerative Changes.

Dec. 6th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Hypodermic Injection of a Mixture of Ether and Oil.

AT a meeting of the Therapeutical Society held on Nov. 23rd M. Gimbert spoke in favour of the hypodermic injection of a mixture of equal parts of ether and oil, the mixture to be made either at the time of using or else very shortly beforehand. He said that the puncture might be either subcutaneous or intramuscular, and that the operation was invariably very much less painful than the injection of ether by itself was to certain individuals; it might even cause no pain at all. Two cubic centimetres of the mixture might be given at a time, and this dose might be repeated from hour to hour. The principal action was that of a stimulant, the effect becoming apparent in from five to six minutes—i.e., perhaps less rapidly than with pure ether. The patient's pulse improved, he felt better, and had a sensation of warmth, the drowsiness and general distress diminished, and the respiration became regular.

Gynæcology in Madagascar.

At a recent meeting of the Société de l'Internat des Hôpitaux de Paris M. Fontoynont said that among the natives of Madagascar the cervix uteri frequently presented the peculiarity of a considerable hypertrophy of the anterior lip which might even extend as far as the vulva. This was, perhaps, a racial peculiarity, and it would be interesting to inquire if it existed among the Malays. Elephantiasis of the labia majora and labia minora was common; it was a result of syphilitic infection, and in appearance closely resembled elephantiasis of tuberculous origin, but differed from filarial elephantiasis. Coxalgia and Pott's disease were of extreme rarity. Gonorrhœal affections, although very prevalent, did not give rise to disease of either the uterus or the adnexa. The absence of restrictive measures and the desire to have children discouraged abortion, with the result that infections of the uterus and the adnexa due to abortifacient procedures were comparatively infrequent. Fibroma was not so common as in Europe; cancer of the uterus was rare, but was more often met with than cancer of the skin; cancer of the alimentary canal was quite unknown. Extra-uterine pregnancies formed the majority of the gynæcological conditions for which surgical operations were required. Malaria exercised an influence on most diseases; it might give rise to abortion, and the only way of preventing premature labour from this cause was the injection of quinine in a sufficient dose, such as a gramme or a gramme and a half.

Action for Damages against a Surgeon.

On Dec. 1st the Tribunal of the Seine decided a case in which a married woman claimed 50,000 francs damages from Dr. Bazy, who had operated on her in the Hôpital Beaujon for an abdominal cystic tumour in the year 1906. In the course of the operation, which was difficult and performed in circumstances of urgency, Dr. Bazy by an oversight left two cotton-wool compresses in the wound. The court was of opinion that he was to blame, but it had been proved (1) that the compresses thus left behind had not caused any material injury; and (2) that at the time of the operation the woman's health and even her life were seriously endangered; it was also very probable, if not positively certain, that without the operation she would not have been alive to-day. In these circumstances the court, considering a claim of 50,000 francs to be excessive, reduced the amount of damages to 5000 francs.

Treatment of Gonorrhœal Rheumatism.

In a communication made to the Société Médicale des Hôpitaux on Nov. 25th M. Louis Ramond and M. Chiray stated that five cases of acute or subacute gonorrhœal monoarthritis, which had been treated by the ordinary methods without benefit, had recovered completely under the use of the antimeningococcic serum of the Pasteur Institute. This serum was injected under the skin, either in the neighbourhood of the affected joint or at a distance from it, or even into the joint itself. A dose of 20 cubic centimetres was each time found sufficient to produce the almost immediate disappearance of the habitual painfulness of the part, the rapid absorption of the effusion both within and around the joint, and the cessation of the pain which had for a considerable time been felt on pressure. The serum treatment did not avert ankylosis in patients who presented themselves in a late stage of the illness, and the earlier it was applied the better prospect was there of the joint remaining useful. These cases fully confirmed the observations made by M. Pissavy and M. Chauvet, and showed that in gonorrhœal rheumatism injections of antimeningococcic serum were simple, effectual, and free from danger.

Action for Damages against a Pharmaceutical Chemist.

A recent decision of the Tribunal of the Seine has an important bearing on the responsibility of pharmaceutical

chemists in connexion with the treatment of patients. A woman cook who had injured her elbow by a fall went on the following day to a druggist, who gave her some preparation and strongly advised her to follow his treatment without consulting a medical practitioner. When eight days had passed without any abatement of the swelling the cook's mistress called in her own medical man, who found that the elbow was dislocated and that on account of the long delay it would be necessary to have a surgical operation, which was accordingly performed in two stages. The patient then brought an action against the druggist and was awarded 2000 francs damages.

Treatment of Syphilis.

At a meeting of the Société de Médecine de Paris held on Nov. 26th M. Lacapère said that the three principal remedial measures in use for syphilitic patients at the present time were as follows: (1) mercurial treatment, for which purpose he decidedly preferred the intravenous injection of soluble salts; (2) hypodermic injections of soluble mercurial salts, together with simultaneous injections of hectine, a method which has given excellent results; and (3) arsenical treatment, consisting in the intravenous injection of arsenobenzol in repeated small doses, a method of administration which was unquestionably superior to intramuscular injections.

Dec. 5th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Unqualified Practice.

THE various questions connected with unqualified practice continue to engage the attention of the medical profession in Germany, especially in view of the Bill on the subject which will be discussed in the present session of the German Parliament.[1] Dr. Reissig of Hamburg, writing to the *Berliner Klinische Wochenschrift*, gives some interesting particulars relative to unqualified practice. The authorities estimate the number of unqualified practitioners at about 10,000, but this is much too small, and the real number is believed to be between 12,000 and 15,000. The number of patients attended and the fees pocketed by certain quacks are truly enormous. Special trains are run by the railway companies to certain small places where celebrated quacks reside; an instance of this kind is provided by a shepherd named Ast, who lives near Hamburg, and attends as many as 500 patients a day. In other cases where the residence of the quack is at some distance from a railway station, a motor-car or omnibus service is provided for the conveyance of patients to his house and back to the station. Some quacks attend 20,000 patients a year, in addition to consultations and advice by letter. In an action-at-law brought against a quack named Norden-Köther, who had formerly been a chemist, his annual income from patients was stated to be 240,000 marks (£12,000). Several practitioners of the same description have incomes of more than 100,000 marks (£5000), and many have incomes between 20,000 and 70,000 marks. The shepherd above mentioned is said to be worth 3,000,000 marks (£150,000). Two quacks asked, and were paid, 10,000 marks (£500) for the treatment of a tuberculous knee-joint. A cook, suffering from incipient tuberculosis, had to pay 80 marks each visit for treatment by X rays; a woman suffering from cancer paid a quack 3080 marks, and, in addition, gave him her jewellery. A patient in humble circumstances who was visited by a quack at her own home had for each visit to pay 20 marks for the attendance, and from 7 to 10 marks for medicines, the total expenses being 475 marks at her death. Some patients had spent all their property for treatment by quacks, and some patients who were maintained by the Poor-law authorities and attended by the Poor-law medical officer, secretly consulted quacks and paid from 2 to 3 marks a visit out of the money distributed to them by the Poor-law officials. Certain quacks resort to the device of advertising gratuitous consultation, the result being that the patients do not pay for the "advice," but only for medicine, the latter having to be bought either from the quack himself or from some neighbouring druggist who is in league with him and charges from 20 to 25 marks for medicine worth not more than 5 marks, the difference being credited to the quack. One of this category intended to establish a special sanatorium for his patients when he was arrested for misdemeanour, and having been liberated on giving bail of 30,000 marks he forfeited his bail and made his escape to a foreign country. The majority of the quacks have no education; in Berlin, for instance, it was stated that only 24 per cent. of the men and 1 per cent. of the women had a college training. The list of quacks include all sorts and conditions of men, from clergymen to music-hall artists and from lawyers to carpenters. They usually declare that they have got their medical knowledge from books, but evidently the great majority of them are unable to understand what they may have read. Dr. Reissig gives some interesting samples of letters written by certain renowned quacks to show their low standard of education. Many of them are criminals who have served sentences, not for infringements of the existing laws and regulations concerning medical practice but partly for offences of a worse description. The list given by Dr. Reissig includes men convicted for burglary, for fraud, for extortion, for offences against morality, and for having caused death by negligence. In some cases these crimes were committed previously to, but in certain cases during, their medical practice. Sometimes the culprit resumed practice immediately after coming out of prison. The most remarkable case is that of a murderer who was sentenced to death in 1858, but whose sentence was commuted to confinement in a penitentiary. After a detention of 31 years he was liberated in 1889, when he began to practise medicine. A few years later he was prosecuted for having caused death by negligence in administering an overdose of morphine to a woman, but was acquitted by a jury. It is no wonder that attempts have been made by the representatives of the medical profession to amend the present state of the law, which allows any person whatever to practise medicine, provided that he is careful not to assume a title equivalent or similar to the special titles of duly qualified medical men. After many years of hesitation the Government at last gave a general approval to the proposals of the medical profession, and two years ago a Bill was introduced for the restriction of unqualified practice, but could not be discussed because of other urgent parliamentary business and the closing of the parliamentary session. The principal paragraphs of this Bill were described in THE LANCET of March 14th, 1908, p. 818. It may be remembered that they provided for a registration of unqualified practitioners; that these persons would have to keep books and inform the authorities as to their medical training; and that they would not be allowed either to treat patients by letter, or to attend venereal and infectious diseases, or to administer narcotic compounds. Unqualified persons who might be proved to have caused injury to the health of patients might also be debarred from practising, and the sale and the advertisement of patent medicines and remedies for venereal diseases were prohibited. This Bill is now re-introduced and the first reading is about to come on. The Bill is nearly the same as it was two years ago, some paragraphs excepted. A provision has been added to prohibit unqualified persons from mentioning their registration in their advertisements or on their door-plates. When the text of the former Bill was published the medical journals expressed the opinion that compulsory registration, instead of being a hindrance to unqualified persons, would rather raise them in the popular estimation, and that they would not fail to give the utmost publicity to their registration for the purpose of making their dupes believe that it was equivalent to a medical qualification. This is avoided by the above-mentioned clause. Another new clause specifies the diseases the treatment of which may only be undertaken by duly qualified medical men. In the former Bill the diseases were only the venereal and infectious diseases; the new Bill gives a detailed list of them, including cholera, small-pox, enteric fever, and cancer. A third new provision, which will certainly be very detrimental to quacks, is that they are to be forbidden to dispense medicine themselves or to give to their patients the address of a certain druggist or pharmaceutical chemist as the only vendor of the medicine prescribed. Two new provisions will be of special interest to foreign medical men; the one exempts foreign medical men from the prohibitions embodied in the law when they have been called to a consultation in Germany

[1] See THE LANCET, Dec. 3rd, p. 1650.

by a patient or a German medical man; the other empowers the Imperial Chancellor to dispense medical men holding foreign diplomas from the provisions of the law concerning the keeping of books and the treatment of certain diseases. Registration, however, is in every case compulsory for holders of foreign diplomas, and cannot be dispensed with by the Chancellor. The new Bill will certainly correct many of the abuses connected with quackery, and it may be accepted as satisfactory by the medical profession, especially since it is understood that the legislature is not at present disposed to take up the question of suppressing unqualified practice.

Twenty-eighth German Congress of Internal Medicine.

This Congress will take place next year from April 19th to 22nd at Wiesbaden, under the presidency of Professor Dr. Ludolf von Krehl of Heidelberg. The principal papers announced for the first day's proceedings are: Upon the Nature and Treatment of Diatheses, by Geh. Med. Rat. Professor Dr. Wilhelm His of Berlin, Professor Pfaundler of München, and Professor Bloch of Basel. Announcements of papers which it is intended to read must be sent, with a short abstract thereof, to the Secretary before March 22nd next. In connexion with the Congress there will be an exhibition of preparations, apparatus, and instruments so far as they relate to internal medicine. All applications must be made to the Secretary of the Congress, Geh. Sanitätsrat Dr. Emil Pfeiffer, Wiesbaden, Parkstrasse, 13.

Dec. 5th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

The Health Department of Toronto.

AFTER a service of 18 years, Dr. Charles Sheard has again tendered his resignation of the position of medical health officer of Toronto, and Dr. Charles J. C. Hastings (Toronto) has been appointed to succeed him. Dr. Hastings two or three years ago organised the Milk Commission of the Canadian Medical Association, and since then has been its chairman. In connexion with the clean milk campaign he has been a strong influence throughout Canada in promoting the formation of branch commissions. He believes that all milk not certified should be properly pasteurised. For the Toronto Laboratory Dr. Hastings advised the appointment of Mr. G. G. Nasmith, Ph.D., of the Ontario Board of Health, and the city has made the appointment. Dr. Hastings will endeavour to bring the health of Toronto to the highest standard.

Hypochlorite Treatment of Water.

Just before leaving the laboratory of the Ontario Board of Health to assume the position of chief of the Toronto laboratory, Dr. Nasmith had made some investigations as to the treatment of water by chloride of lime, which he found of undoubted value. A special circular has been issued by the Board which will be particularly valuable to hunters, prospectors, and campers. In this it is set out that one level teaspoonful of chloride of lime dissolved in three cupfuls of water, and one teaspoonful of this solution added to two gallons of water, will render it free from bacteria and leave the water good for drinking.

Sepsis in Medicine.

Dr. William Hunter of the London (England) Fever Hospital, who came out to deliver the opening address of the Medical Faculty of McGill University, Montreal, came on to Toronto and gave an address to the Academy of Medicine. Dr. Hunter emphasised the importance of sepsis to the physician as well as to the surgeon, and said that they should be antiseptic physicians as well as antiseptic surgeons. He discussed the part which decayed teeth and pus formation in the gums played in the causation of anæmia, especially in pernicious anæmia, putting forward the view that pernicious anæmia is really a chronic infection.

Radium in the Treatment of Cancer.

Dr. Louis Wickham of Paris has also paid a visit to Montreal and Toronto recently, at the latter place being the guest of Dr. W. H. B. Aikins. A special meeting of the Academy of Medicine was arranged, at which Dr. Wickham gave an illustrated lecture on the use of radium in the treatment of cancer and other diseases, and on the selective action of radium. The meeting was largely attended and several practitioners came some distance from outside points.

The Complete Physicians.

The above was the title of Professor J. George Adami's address at the opening lecture of the present session at the Medical Department of the University of Toronto. Professor Adami had a good deal to say in his address about Bulletin No. IV. of the Carnegie Foundation. While McGill and Toronto had been referred to repeatedly in this report, they are apparently considered of a lower class compared with some institutions in the United States, which demand that, before a four years' course in medicine, at least two years should be spent at a university or college. Professor Adami discussed this matter by proposing two questions:—1. Are a college course and an arts degree essential for the complete physician? 2. Is the Carnegie Report justified in making the entrance requirements of the school the standard whereby to classify the medical schools of this continent? He does not urge two or three years in arts and five in the medical course, as prolonged training tends to make a man become stale. Professor Adami believes in the fifth year, now pretty generally a requirement in Canada, which year spent in a hospital will produce magnificent training. He thought the Halifax school had been unjustly criticised in the report.

Mortality from Consumption Decreasing in Montreal.

It was announced at the annual meeting of the Royal Edward Institute that during the past 12 months in Montreal the mortality from pulmonary tuberculosis had decreased by 67. Montreal is said by the President of the Institute to be still 50 per cent. ahead of Boston, New York, and other American cities in consumption mortality. In 1907 the deaths in Montreal from all forms of tuberculosis were 953; in 1908, 945; and in 1909, 845. The corresponding deaths from pulmonary tuberculosis were 748, 760, and 685. To the institute 431 new cases were reported during the year, and 836 patients attended the dispensary. The total number of consultations was 6004, and the number of visits made by the inspector was 4716. The total number of patients on the list was 773, of whom 300 have died, 48 were lost sight of, and 425 still remain for treatment. Lieutenant-Colonel Burland was re-elected President of the Institute, and Dr. E. P. Lachapelle as first vice-president.

Infant Mortality in Ontario.

The Ontario Government has caused to be prepared and published a special report on infant mortality throughout the province. This report was prepared by Dr. Helen MacMurchy (Toronto), who states that infant mortality is the greatest problem of preventive medicine. In Ontario, according to the thirty-eighth annual report of the Registrar-General for 1907, the total number of deaths was 35,502, and the number of deaths under 5 years of age was 9930—that is, 29 per cent. of the total. Compare with this the total deaths due to tuberculosis in 1907—namely, 2530, or 8 per cent. of the total. Whilst not enough work is done about tuberculosis, what is said or done about infant mortality? In the city of Toronto in 1907 there were 1313 deaths under one year of age, and the total number of births was 6680. This gives an infant mortality of 196 per 1000. These figures emphasise the need for an educational campaign in the province, as nearly 10,000 die annually in Ontario under 5 years of age.

Health Conference at Ottawa.

There was held recently in Ottawa, under the auspices of the Public Health Department of the Canadian Conservation Commission, an important conference of Federal and Provincial health officials. Different committees were formed and these subsequently made recommendations to the conference. The Committee on Pollution of Waterways recommends a law prohibiting and penalising the deposition of raw sewage in the waterways of Canada, and towards this end it presented a draft Bill for each province to give effect to, so that there shall be no conflict of jurisdiction between the Dominion and Provincial Governments. Legislatures are to be asked to insert a clause in their various Health Acts that no sewerage or water-works construction can be undertaken by any municipality until the approval of the Provincial Board of Health has been obtained. The Federal Government is advised to confer with the United States with a view of preventing any further pollution of international waterways. The report of

the Committee on Tuberculosis recommends that the Dominion Government should be urged to give substantial assistance to encourage the establishment of new sanatoriums and hospitals for consumptives. It also recommends that areas of Crown lands should be secured early, to be set apart for colonies of the tuberculous and their families. It was decided to recommend to the Government that a permanent National Council of Health should be established under the Conservation Commission, and also that a national public health laboratory should be established to manufacture vaccines, toxins, and antitoxins, and analogous products, and also to supervise the manufacture, sale, and importation of such products. An officer of the Commission will shortly be sent to the United States to study and to report upon the work and expenses of such laboratories.

Toronto, Nov. 26th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Sanitation in Eastern Bengal and Assam.

PERHAPS one of the most interesting and instructive reports issued by the Government of Eastern Bengal and Assam for 1909 is that dealing with sanitation. There seems to be a connexion between the birth-rate of one year and the general healthiness of the year immediately preceding it. In 1907 the mortality was the lowest recorded since the formation of the province. In 1908 the birth-rate was the highest. The slight fall in the birth-rate during the year under review (which, however, was higher than any other province except the Central Provinces) corresponds with the slight rise of mortality in 1908. Last year there were but two cases of plague and these cases were imported into the Province. The absence of plague seems to be due to two facts: first, that the people do not live in houses where the mus rattus can find an easy home. The roofs are, especially in Dacca, flat thatched and sometimes corrugated. The rat is unable to live and breed as it does in houses with tiled roofs. The second reason is that Eastern Bengal and Assam possesses so many rivers which overflow their banks, and this from a sanitary point of view is of high importance. "Fevers" (a most inexact term) account for many deaths, the mortality ostensibly being highest in the cold weather months of November and December and lowest in February. It is interesting to note that in the three districts in which vaccination has made least headway (Rangpur, Bogra, and Dinajpur) small-pox was greatest. The epidemic was traceable to Calcutta. The results of the Malaria Conference at Simla should lead to far-reaching results in the young province. The main recommendation, it will be remembered, was that anti-malarial measures on any large scale should always be preceded by a systematic investigation of the distribution of the disease and by a critical examination of vital statistics. The local government has already set to work on these lines, and the results, especially in such malarious districts as Jalpaiguri and Dinajpur, are awaited with considerable interest. It is disappointing to note that the vital statistics are still in an unsatisfactory way. Nothing ought to be done to weaken the obligation of the householder to report. There should be more checking, and prosecutions ought to be instituted by the vaccinating staff, who should be rewarded for convictions obtained. Without reliable statistics reform must always be a leap in the dark.

Medical Work in the Punjab.

Colonel A. L. F. Bate's report on the dispensaries and charitable institutions of the Punjab for 1909 shows the salient feature to be not so much the excellent work of these institutions as the clear indications of the gradual and steady extension of medical relief, and of the growing confidence of the masses in the Western system of medicine. This last point is especially borne out by the figures for the total number of patients of all classes. During the year, which was a healthy one on the whole and free from outbreaks of epidemics, except plague, over 4,511,751 persons were treated, only slightly fewer than the phenomenally large number in the previous year when a severe epidemic of malaria ravaged the Province. Moreover, the number of women and children attending the dispensaries during the year showed a considerable increase over the figures for the previous year, a fact which alone demonstrates that the people are more ready to resort to these institutions in cases of illness than formerly. Special efforts are being made to recruit suitable lady doctors, and there are now five female assistant surgeons and 11 female hospital assistants working in the hospitals and dispensaries, which is a satisfactory advance. The Lieutenant-Governor, endorsing the remarks of the Inspector-General of Civil Hospitals, considers that it is necessary to provide for selected men of the hospital assistant class a better career than that now open to them. His honour refers in particular to the case of Hospital Assistant Mathra Das, whose surgical record is the second in the whole province. "It savours terribly of red tape," says the review, "that such an officer should not be able to rise in Government service to a salary exceeding Rs.70."

Lunatic Asylums in Burma.

Colonel W. G. King, C.I.E., I.M.S., just before his recent retirement published the annual note on the Burma lunatic asylums at Rangoon and Minbu. There is a marked increase of recent years in the number of lunatics in Burma, an increase of 70 per cent. in the past ten years. Lower Burma furnishes lunatics to the extent of 8·2 per 100,000, and Upper Burma 3·3—a statement which well illustrates the connexion between the development of a province and the resulting pressure on the mental powers of its inhabitants. The question of accommodation for lunatics is a pressing one; even the new temporary asylum at Minbu is full up and the Rangoon Asylum is constantly overcrowded. At Minbu the newly instituted small infiltration gallery for distributing good water has been a success, and Dr. H. E. Wells, the superintendent, considers it should serve as a model for the water-supply of the town of Minbu. The death-rate at Minbu was 32 per 1000, including three fatal cases of cholera, probably fly-borne. At Rangoon the death-rate was 93 per 1000. We learn that forcible nasal feeding was practised in 31 cases, in one case for 64 days, and in the others for an average of 16 days, with good results. It is very interesting to note that there were two fatal cases of general paralysis of the insane—a disease usually considered very rare in Indian asylums. Captain W. S. J. Shaw, I.M.S., the superintendent of the Rangoon Asylum, recently had two such cases also, so perhaps the disease is not quite so uncommon as supposed.

Malarial Fevers in Eastern Bengal and Assam.

It is regrettable, in view of the extensive prevalence of malaria which continues in Eastern Bengal and Assam, to find that a deep-rooted prejudice against the use of quinine still characterises that province. Except in the Faridpur district, which sold a considerable number of tablets, and where these appear to be generally preferred to quinine powders, and in Rangpur, where they seem to be gradually acquiring an increasing popularity, tablets have not apparently found any great favour with the people. The percentage of quinine distributed to the population of Eastern Bengal during 1909 is, however, nearly double that distributed in Assam, and a possible explanation of this fact is the extensive free distribution on tea-gardens by managers in the latter region. There can be no doubt, however, that the comparatively exiguous amount of quinine sold over the entire province does represent a very marked objection to the medicine, and that the prejudice indicated can only be removed by slow degrees, as its value as a prophylactic and a remedy for malarial fever becomes better known to the people. It must, therefore, be a great satisfaction that the memorandum issued not long ago by Dr. A. Bentley on quinine distribution has been receiving careful attention in Eastern Bengal and Assam, and that it has already been used as the basis of recommendations for radical changes, not only in the method of distribution, but also in the form of quinine chosen for use in the provinces. Briefly reviewed, the scheme which it is proposed to adopt consists in the abolition of the pice-packet system and the substitution for it of a system in which the minimum amount of quinine to be sold to a consumer is sufficient for the treatment of an attack of fever. To meet this requirement it is proposed to issue "treatments," consisting of 20 four-grain tablets of hydrochloride of quinine, this salt being adopted because of its higher quinine content

and much greater solubility as compared with the sulphate. Each "treatment" will be issued in a glass phial enclosed in a wrapper containing directions for use of the contents, and simple instructions for the personal prophylaxis of malaria. Ten treatments constitute a "parcel," the minimum quantity to be sold to retailers, and this will be so packed as to be capable of transmission through the post without risk of breakage. It is proposed to sell treatments at 3½ annas each, retailers getting a profit of 9 annas on the sale of a parcel. This profit, which amounts to about 33 per cent., has purposely been fixed at a high rate in order to encourage the sale of quinine, and with the same object it is proposed to make the retail agency as wide as possible and to resort to the use of advertisements, leaflets, and posters. A separate scheme is also under preparation for special "treatments" for children, consisting of tannate of quinine, or some other comparatively tasteless salt mixed with an attractive flavouring agent; while in order that the very poor may not be excluded from the benefits of the "treatment" system, it is further proposed to make provision for the free distribution of quinine by special agency in areas severely affected by malaria.

Malaria in Burma.

A resolution issued by the Government of Burma refers to the malaria conference at Simla in October last year and mentions that the conference particularly recognised the importance of conducting systematic investigations into the distribution of malaria, its epidemiology and endemiology, and the value of quinine and other remedies. To direct and coördinate such investigations the Government of India has announced its intention of appointing a central scientific committee and it has invited the Government of Burma to establish a provincial committee to work in consultation with the central committee and to carry out investigations in this province. The Lieutenant-Governor of Burma has accordingly appointed a provincial malaria committee which will be constituted as follows:—Inspector-General of Civil Hopitals, Burma, the Commissioner of Pegu Division, the Sanitary Commissioner of Burma, the Sanitary Engineer of Burma, the senior civil surgeon, Rangoon, Dr. A. R. J. Douglas, Dr. Harry Findlay, Mg. Atoon Myat, Dr. T. F. Pedley, Mg. Ba Shin, Mr. B. J. B. Stephens, the Hon. Mg. Be Too, Captain A. Whitmore, I.M.S., and the Deputy Sanitary Commissioner, Burma (secretary). The committee will hold its meetings in Rangoon and is empowered to obtain any information which it may require from officers of Government, who will, his honour is confident, coöperate with it by every means in their power. It is specially important that the committee should be fully informed about the local conditions and idiosyncrasies of the people in different parts of the province.

The Birth-rate in the Central Provinces.

The Central Provinces and Berar boast the highest provincial birth-rate in India. It was 51·63 per 1000 last year, and though this was lower than it had been for five years, it was still over 11 per 1000 more than the rate for Eastern Bengal and Assam, which comes second on the list for the whole country. Side by side with this high birth-rate, it is sad to notice, however, the direct effect it has on the mortality returns for the province. This will be understood when it is mentioned that one out of every two deaths which takes place is that of a child under the age of five years. The infantile mortality during 1909 was 221·94, and enormous though this appears, it still compares favourably with the rate for 1908. Reformation in domestic hygiene is of course what is required for lowering the infantile mortality, and this is a much more complex problem than that with which the Finance Ministers have been faced in finding grants for sanitation. No more progress has been made towards the solution of the problem in the Central Provinces and Berar than elsewhere in India. Efforts that have been made to train midwives have met with scanty success, but they are not to be abandoned, as the Chief Commissioner is optimistic and believes that some good may be done at last. Captain H. N. Stokes, I.M.S., the Sanitary Commissioner, advocates the employment of one really good woman at each headquarter town, whose methods would become known and from whom, by a system of apprentices, the want of experienced midwives may become satisfied.

Nov. 12th.

Obituary.

THOMAS NADAULD BRUSHFIELD, M.D. ST. AND., M.R.C.S. ENG., F.S.A.

Dr. Brushfield died on Nov. 28th at his residence, The Cliff, Budleigh Salterton, Devon, in his 82nd year. The deceased, who received his medical education at the London Hospital, qualified M.R.C.S. in 1850, and 12 years later graduated M.D. of St. Andrews. After holding a resident appointment at the London Hospital, Dr. Brushfield was appointed medical superintendent at the Chester County Asylum. He held this post for some years, and was then made medical superintendent of the Surrey County Asylum at Brookwood, retiring on a pension in 1882, mainly owing to the effects of an injury received from a patient. Afterwards he settled at Budleigh Salterton, where he soon became very popular. He took great interest in archæology, and was a frequent contributor to "Devon and Cornwall Notes," and his examination of old documents brought out many facts concerning the life of Sir Walter Raleigh (who, as Dr. Brushfield showed, really spelt his name Ralegh). Dr. Brushfield was much interested in all matters relating to Sir Walter Raleigh, and when the Canadian and American journalists visited Devonshire last year he gave them an interesting address on the subject, showing them over Hayes Barton, the interesting old house where Raleigh was born.

Dr. Brushfield also contributed to the English Dictionary published by the University of Oxford, to which he furnished no less than 70,000 references to local antiquarian and literary subjects. Among the more important of his works are a history of All Saints Church, East Budleigh, and the "Life and Writings of Sir Walter Ralegh." He was a member of the Medico-Psychological Association and of the British Archæological Association; honorary member of the Chester Medical Society, of the Torquay Natural History Society, of the Teign Naturalists' Field Club, and of the Chester Archæological Society; local secretary and Fellow of the Society of Antiquaries, and member and past president of the Devonshire Association (1893). The pages of the "Western Antiquary" and the volumes of the Transactions of the Devonshire Association for the past 28 years owe much to his pen. Dr. Brushfield possessed one of the most valuable and extensive libraries in the West of England. He will be much missed in Budleigh Salterton and the district.

EDWARD HENRY BRIEN, M.D. DUB.

REGRET is expressed in Rock Ferry and district at the death of Dr. Edward H. Brien, which occurred with painful suddenness on Nov. 24th. Dr. Brien commenced practice in Rock Ferry 22 years ago in succession to the late Dr. Nixon, and was only 52 years of age at the time of his death.

Dr. Brien's father, a fleet-surgeon in the navy, who served in the Crimean war, died whilst his son was yet a boy, and an uncle, Archdeacon Brien, acted in consequence in place of a parent. From school Edward Brien went to Trinity College, Dublin, and there graduated as B.A., and later took his M.D. degree. He was only 30 years of age when he settled in Rock Ferry, but from the first he was a general favourite with all classes. He became a keen politician and an energetic public man. He served for many years on the Birkenhead town council, acting on many committees, and he gave excellent service as chairman of the electricity committee, for which position he was well fitted by his practical knowledge of mechanics. Later he was elected to the position of chairman of the watch committee, and he had just been reappointed to this post at the time of his death. He was a keen motorist and understood his car better than any other medical man in the town. He was, in fact, the pioneer of motoring in the district, his steam-car being the first of its kind and also the first doctor's motor in Birkenhead. He was president of the Birkenhead Medical Society in 1904, and was a constant and active member up to the end. He was also chairman of the Conservative party in his district, and in all branches of his work he was universally popular.

He apparently enjoyed robust health until a short time ago, when he occasionally complained of pains in the neck and left shoulder, which he attributed to rheumatism, and it was only on Nov. 16th, whilst doing his morning round

that a severe attack caused him to realise that he was the victim of angina pectoris, and attention being drawn to the urine he was found also to have glycosuria. On the morning of his death he expressed himself as well and fit for work, and indeed the fatal seizure was probably induced by his running upstairs for his visiting list, for he dropped in the room and died almost immediately with the book in his hand.

The funeral was a very representative one, the Mayor, many members of the town council, corporation officials, fire brigade, police, and a large portion of his professional brethren turning out to do the last honour to one who had been adviser, colleague, and friend to so many, who had served his community so well, and stood so high in the esteem of the poor. Much sympathy is felt for his wife and two sons, the elder of whom is studying for his father's profession.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. W. Forest, professor of orthopædic surgery in Pennsylvania University, Philadelphia.—Dr. Hans Goldschmidt of Berlin, an eminent urologist, who devised a valuable form of urethroscope. He was 58 years of age.

Medical News.

UNIVERSITY OF OXFORD.—In the recent examination for the Diploma in Public Health the following were approved:—

Part I.—H. S. Burnell-Jones, D. G. Evans, F. R. Seymour, and C. B. Roscrow.
Parts I. and II.—P. N. Cave, T. Chetwood, R. A. Clapham, W. P. MacArthur, A. C. Parsons, O. P. Turner, and G. C. Welch.
Part II.—G. Finch and Rachel E. W. Mackenzie.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following candidates have passed the primary part of the Fellowship Examination:—

Mr. J. D. Cherry, Miss Z. A. De Cruz, L.R.C.P. & S. Edin., Mr. T. O. Graham, M.B., B.Ch. Dub., Mr. J. R. May, Mr. G. E. Pepper, and Mr. S. R. Rao, L.R.C.P. & S. Edin.

The following candidates have passed the final part of the examinations and have been admitted Fellows of the College:—

Miss I. M. Clarke, L.R.C.P. & S. Irel.; Mr. H. English, M.B., B.Ch. Dub.; Mr. K. T. Nath, L.R.C.P. & S. Edin.; Mr. G. F. Shepherd, L.R.C.P. & S. Irel.; and Miss C. F. Williamson, L.R.C.P. & S. Irel.

UNIVERSITY OF BRISTOL: THE LATE DR. LONG FOX.—The seventh annual "Long Fox" lecture will be delivered in the medical library on Dec. 15th at 4.15 P.M. by Professor J. Michell Clarke. The subject will be "Cerebro-spinal Syphilis."

ROYAL INSTITUTION.—The following are the lecture arrangements at the Royal Institution before Easter:—Professor Silvanus P. Thompson: A Christmas Course of Six Illustrated Lectures on Sound, Musical and Non-musical, a Course of Experimental Acoustics, adapted to a Juvenile Auditory—(1) production of sound; (2) transmission of sound; (3) reception of sound; (4) combination of sounds; (5) registration of sounds; and (6) reproduction of sound. Dr. F. W. Mott, Fullerian professor of physiology, R.I.: Six Lectures on Heredity. Dr. A. E. H. Tutton: Three Lectures on Crystalline Structure—mineral, chemical, and liquid. Dr. M. Aurel Stein: Three Lectures on Explorations of Desert Sites in Central Asia. The Astronomer Royal, Mr. F. W. Dyson: Three Lectures on Recent Progress in Astronomy. Dr. P. Chalmers Mitchell: Three Lectures on Problems of Animals in Captivity. Mr. A. C. Benson: Two Lectures on Ruskin. Dr. Arthur Keith: Two Lectures on Giants and Pygmies. Professor W. A. Bone: Two Lectures on Surface Combustion and its Industrial Applications. Professor Sir J. J. Thomson, professor of natural philosophy, R.I.: Six Lectures on Radiant Energy and Matter. The Friday evening meetings will commence on Jan. 20th, when Professor Sir James Dewar will deliver a Discourse on Chemical Change at Low Temperatures. Succeeding discourses will probably be given by Professor W. H. Bragg, Mr. A. E. Shipley, Professor H. E. Armstrong, Professor Jean Perrin, Professor Karl Pearson, Mr. J. H. Balfour-Browne, Sir David Gill, Professor H. S. Hele-Shaw, Professor Sir J. J. Thomson, and other gentlemen.

A GLOUCESTERSHIRE CENTENARIAN.—Mr. T. M. Enstone of Sandhurst, Gloucestershire, died on Nov. 24th. There is an official record of the fact that he was christened on Oct. 9th, 1808.

Messrs. Down Bros., Limited, of St. Thomas's-street, London, have been awarded the Grand Prix (highest award) for surgical instruments and aseptic hospital furniture at the Buenos Aires Exhibition, 1910, as well as the Grand Prix (highest award) at the Brussels Exhibition, 1910.

THE LATE DR. ARTHUR FOXWELL.—At the Queen's Hospital, Birmingham, the Foxwell Memorial Tablet was unveiled by Professor Jordan Lloyd on Nov. 22nd, in the presence of a representative company of the subscribers, hospital staff, committee, residents, and nurses. Professor J. T. J. Morrison, chairman of the medical committee, presided, and Mrs. Foxwell and Miss Foxwell were amongst those present. The tablet, which is of bronze, is in the form of a memorial bust, and is the work of Mr. Courtenay Pollock. It is inscribed: "Arthur Foxwell, physician to this hospital, 1889–1909. Erected by his colleagues and friends." Professor Morrison said the proceedings that afternoon were the outcome of a movement begun some months ago by the medical committee. They felt strongly and unanimously that the hospital ought to contain some conspicuous evidence of the regard and affection in which they held their late friend and colleague. It was not forgotten that the open-air ward in the medical building—the first of its kind, as far as he knew, in England—must always be associated with him. The idea was his sole conception and was carried into effect under his thoughtful supervision. But they wanted something more obviously personal and distinctive upon which his name might be inscribed, and which would challenge the notice and inquiry of the observer. After due consideration it was decided—and he felt sure the subscribers would endorse the decision—that the memorial should take the two-fold form of a mural tablet and a medical prize. The tablet was very appropriately the work of Mr. Courtenay Pollock, a stepson of Dr. Foxwell, and an artist of considerable talent. The endowment fund of the Foxwell Memorial Essay would provide a prize in clinical medicine, to be competed for annually by qualified residents of the Queen's Hospital, General Hospital, and the Children's Hospital. By these means they wished, and they expected, to preserve the memory of their friend in the minds of his fellow workers, and to continue the influence of his personality upon those who might follow them in the future. Professor Jordan Lloyd, as the senior member of the Queen's Hospital staff, then unveiled the tablet. He referred with emotion to his long friendship with Dr. Foxwell, and said he had learned to hold him in the highest regard as a man, to esteem him as a scholar, and to revere him as a devotee of the profession he had chosen. Invited to speak by the chairman, Dr. O. J. Kauffmann, the senior physician, said that it might interest those present to learn what had been done with the money collected for the Foxwell Memorial. The sum subscribed was close upon £200. £50 had been paid for the memorial tablet, and the rest had been invested in a debenture security, which would bring in about £6 per year. This small amount it was proposed to present annually for the best prize essay, which should be open to competition by the residents of the Queen's, the General, and the Children's hospitals. The subject of the essay would be fixed by the medical committee of the Queen's Hospital, which had reserved to itself the right to alter the regulations affecting the prize if it should appear that a change would be advantageous. They had thought it well to depart from the usual fashion of giving a prize to students because they knew that the plan they had devised would have been approved by Dr. Foxwell, whose sympathy was ever with young members of the profession who endeavoured to further the march of science; and they trusted that those who would compete for the prize would use personal observations on disease as the mainstay of their essays. Mr. Keep, chairman of the hospital committee, in moving a vote of thanks to the chairman and to Professor Jordan Lloyd, said the memorial would serve as a link between these days and the days to come. It would remind the men and women

who were in the hospital of a distinguished man who had preceded them, and whose memory his friends delighted to honour. The motion was seconded by Alderman Clayton, and was duly carried and acknowledged.

METROPOLITAN WATER BOARD: APPOINTMENT OF DISTRICT MEDICAL OFFICERS.—The Works and Stores Committee of the Metropolitan Water Board reported, at the meeting of the Board on Friday, Dec. 2nd, vacancies caused by the resignation of Dr. Percy Pope and the death of Dr. C. Adams, district medical officers for the Barrow Hill Division of the Western District and the Buckhurst Hill Division of the Eastern District respectively. To fill these vacancies it was resolved to appoint Mr. Beresford Kingsford, M.D., D.P.H., in the Western District, and Mr. P. W. Moore, M.B., M.R.C.S., L.R.C.P., in the Eastern District. The committee had also received notice of the resignation of Dr. T. E. B. Meyler, of the Battersea, Brixton, and Wandsworth Division of the Southern District, and a report as to filling the vacancy was promised at a later date. Dr. W. Anderson, who was appointed to act jointly with his partner, Dr. R. Cobb, in the East of Lee Division of the Eastern District, has removed from the neighbourhood, but the committee considered it unnecessary to fill the vacancy thus caused, and his name was removed from the Board's list of district medical officers.

A SPECIAL meeting of the medical men resident in the electoral division of Rossendale was held on Nov. 30th at Rawtenstall. There was a good attendance. Dr. J. Brown of Bacup was called to the chair, and Dr. E. W. Falconer of Stacksteads was asked to act as secretary. The Chairman stated that the meeting was convened to discuss the questions of State sickness and invalidity insurance, and of coroners' law and death certification, as affecting the medical profession. Several members who had had experience in other parts of the country of club and contract practice spoke of its being most unsatisfactory. The following resolution was then proposed by Dr. J. Broomhead of Haslingden, and seconded by Dr. A. A. Edward of Rawtenstall:—

That the principle of limited payment for unlimited medical services has to a large extent proved most unsatisfactory to the patients and to the doctors. This meeting therefore is strongly opposed to this principle, and urges on the Government in any future legislation in the proposed State Sickness and Invalidity Insurance Bill that there shall be freedom of choice of doctor by the patient, and that the principle of payment shall be for medical services rendered.

This was carried unanimously. Copies of this resolution were ordered to be sent to the Right Honourable Lewis Harcourt, the Right Honourable Lloyd George, and the Central Council of the British Medical Association. Mr. McIlraith of Rawtenstall then proposed and Dr. J. A. Harrison of Haslingden seconded:—

That the proposed Coroners' Law and Death Certification Bill should be amended as follows: "That the body be viewed within three days of death having taken place, and that there be a minimum fee and mileage for the certificate."

This was also carried unanimously. The resolution was ordered to be sent to the Right Honourable Lewis Harcourt, Sir W. Collins, and the Central Council of the British Medical Association.

PRESENTATION TO MR. CHARLES J. BOND.—A representative assembly of members of the profession was present on Dec. 1st at the Grand Hotel, Leicester, when a presentation of a silver tea and coffee service was made to Mr. C. J. Bond. The proceedings commenced with an informal dinner to which nearly 90 gentlemen accepted invitations, though owing to the exceedingly inclement condition of the weather several were prevented from attending. The chair was occupied by Mr. C. F. Bryan, the oldest practising member of the profession in the town. At the close of the dinner the chairman gave the toast of "The King," and then briefly proposed Mr. Bond's health, reserving further remarks for the subsequent presentation ceremony. Mr. Bond made a short reply. The party then adjourned and a reception was held in an adjoining room, which was attended by a large number of the wives and daughters of the subscribers. The company was received by Mr. and Mrs. Bryan and by Mr., Mrs., and Miss Bond. The Mayoress of Leicester, Miss Vincent, was present. Mr. Bryan made the presentation. In felicitous terms he spoke of Mr. Bond's career at University College, where he carried off many prizes and held the appointments of house surgeon and assistant demonstrator of anatomy. After being house surgeon at Bedford Infirmary and Leicester Infirmary he joined the staff of the latter institution in 1886 and was now its senior surgeon. The chairman went on to speak of the high position which Mr. Bond held among the medical profession in Leicester and Leicestershire. He counted almost every medical practitioner as a personal friend, and many of them, their wives and families, as patients. Almost every medical practitioner in the district had contributed towards the presentation, and Mr. Bryan stated that it gave him the sincerest gratification to present the articles of plate to Mr. Bond. These consisted of a massive silver tea and coffee service and salver, on the last of which was inscribed: "To C. J. Bond, F.R.C.S., from his medical friends in Leicester and neighbourhood as a token of affection and esteem on his retirement from practice, 1910." Mr. Bond, in acknowledgment, wished all to understand that he felt very deeply the kindness of every one of the subscribers.

THE LONDON COUNTY COUNCIL AND THE TREATMENT OF SCHOOL CHILDREN.—The Education Committee of the London County Council are recommending that the agreements entered into by the Council with six metropolitan hospitals for the medical treatment of children in the Council's schools should be renewed for one year.

BOOKS, ETC., RECEIVED.

BIDDLE AND SHIPPAM, Guildford.

Why is this so? A Consensus of Qualified Opinion upon a Cause of Pelvic Disease. By Henry Holden. Price 2*s.*, post free.

CASSELL AND CO., LIMITED, London, New York, Toronto, and Melbourne. (For LETTS' DIARIES CO., LIMITED.)

Letts's No. 31 Rough Diary, with a week in an opening, for 1911. Price 1*s.* 6*d.*, or with blotting 2*s.* 6*d.*
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Letts's Pocket Diary and Almanac for 1911. No. 13. Price 2*s.* 6*d.* net. No. 26, 1*s.* 6*d.* net.
Letts's Diary for 1911. No. 72. (Waistcoat pocket.) Leather, gilt edges. Price 1*s.* net. No. 91. Leather-cloth, back-loop pencil. Price 1*s.* 6*d.* net. No. 111. Limp cloth, gilt edges. Price 2*s.* net.
Letts's Medical Diary for the Year 1911. For 54 or 108 patients. Prices range from 2*s.* 6*d.* to 10*s.* according to size and binding.
Letts's Nurses' Report Book and Diary for 1911. Price 2*s.* net.

CHURCHILL, J. AND A., London.

Manual of Clinical Pathology. For the General Practitioner. By Richard Weiss, M.A., Ph.D., F.C.S., in collaboration with George Herschell, M.D. Lond., and Andrew Charles, F.R.C.S. Dublin. Price 2*s.* net.

COLLINGRIDGE, W. H. AND L., London.

Garden Foes. By T. W. Sanders, F.L.S., F.R.H.S. Price 2*s.* 6*d.* net.
Carnations, Picotees, and Pinks. By T. W. Sanders, F.L.S. Price 2*s.* 6*d.* net.

FUNK AND WAGNALLS COMPANY, New York and London.

The Marvels Beyond Science. (L'Occultisme Hier et Aujourd'hui; Le Merveilleux Prescientifique). Being a Record of Progress Made in the Reduction of Occult Phenomena to a Scientific Basis. By Joseph Grasset, M.D. With a Preface by Emile Faguet, of the French Academy. Authorised English Translation of the Second Revised and Enlarged French Edition, by René Jacques Tubeuf, Fellow of the University of Paris. Price 7*s.* 6*d.* net.

GLAISHER, HENRY J., London.

The Non-surgical Treatment of Duodenal Ulcer. By George Herschell, M.D. Lond. Price 1*s.* net.

HAZELL, WATSON, AND VINEY, LIMITED, London.

Smith's Physicians' and Surgeons' Visiting List, Diary, Almanack, and Book of Engagements for 1911. Sixty-fifth year. Published in four styles of binding and six different sizes. Prices from 2*s.* 6*d.* to 6*s.* 6*d.* each.

HEINEMANN, WILLIAM, London.

The Encyclopædia of Sport and Games. Edited by the Earl of Suffolk and Berkshire. Volume I. A—Cricket. Cash price in Great Britain and Ireland, cloth, 10*s.* 6*d.* net; abroad, 12*s.* 6*d.* net.

HOULSTON AND SONS, 7, Paternoster Buildings, London. (MENZIES, JOHN, AND CO., Edinburgh and Glasgow.)

The Ambulance Vade-Mecum. "First Aid" to Injured and Sick. By J. F. Sutherland, M.D. Thirty-sixth edition—36,000. Revised and enlarged, 1909. Price 3*d.*

KEGAN PAUL, TRENCH, TRÜBNER, AND CO., LIMITED, London.

The Views of "Vanoc": An Englishman's Outlook. By Arnold White. Price 5*s.* net.

LAURIE, T. WERNER, London.

Logic for the Million. Edited by T. Sharper Knowlson. Price 6s. net.

Ghostly Phenomena. By Elliot O'Donnell. Price 3s. 6d. net.

LIFE ASSURANCE MEDICAL OFFICERS' ASSOCIATION, London.

Transactions of the Life Assurance Medical Officers' Association, London. Comprising the Report of the Proceedings for 1908 and 1909. Price not stated.

RUDALL, CARTE, AND CO., LIMITED, London.

The Professional Pocket-book or Daily and Hourly Engagement Diary for 1911. Specially adapted for Professional Engagements. In three parts. January-April, May-August, September-December. Price not stated.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.

Wrights' Improved Physicians' and Surgeons' and Consultants' Visiting List. Compiled by Robert Simpson, L.R.C.P., L.R.C.S. Form A. 1911. Eighteenth edition. Price from 5s. to 7s. each, according to size.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BOND, HOPETOUN R., M.D., C.M., L.R.C.P. & S. Edin., L.R.F.P.S. Glasg., has been appointed House Surgeon to the Teignmouth Hospital.

BOOTH-JONES, C., has been appointed Second Assistant Medical Officer to the Warwick County Lunatic Asylum.

BROWN, HORACE G., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer to the Workhouse, District Medical Officer, and Public Vaccinator to the Bedwellty Board of Guardians *pro tem.*

BUZZARD, E. FARQUHAR, M.D. Oxon., F.R.C.P. Lond., has been appointed Physician to Out-patients at St. Thomas's Hospital.

CHOYCE, CHARLES COLEY, M.D. Edin., B.Sc., F.R.C.S. Eng., has been appointed Surgeon to Out-patients at the Great Northern Central Hospital.

DARLING, H., M.B., B.S., has been appointed House Surgeon at University College Hospital.

FISHER, F. R., F.R.C.S. Eng., has been appointed Honorary Consulting Surgeon to the Surgical Aid Society.

HUGHES, DAVID ARTHUR, L.R.C.P. Lond., M.R.C.S., D.P.H. Lond., has been appointed Medical Officer of Health of the County of Carmarthen.

JONES, EDWARD T., M.R.C.S. Eng., has been appointed Medical Officer and Public Vaccinator of the Petersfield Union, No. 1 East Meon District.

LEECH, H. B., M.D. Dub., has been appointed Senior Assistant Medical Officer to the Warwick County Lunatic Asylum.

O'DRISCOLL, P. L., M.B., B.S. R.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Timoleague District of the county of Cork.

OLLERENSHAW, ROBERT, M.D., Ch.B. Vict., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed an Honorary Assistant Surgeon to the Salford Royal Hospital.

ORR, JAMES, L.R.C.P. Edin., D.P.H., has been appointed Medical Officer of Health for the County Borough of Barrow-in-Furness.

SIMSON, H. J. F., M.B., M.S. Edin., F.R.C.S. Edin., has been appointed Assistant Physician for Diseases of Women at the West London Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARNSTAPLE, NORTH DEVON INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

BEDFORD COUNTY HOSPITAL.—House Physician. Salary £80 per annum, with apartments, board, and laundry.

BERMONDSEY INFIRMARY, Lower-road, Rotherhithe, S.E. — Second Assistant Medical Officer. Salary £120 per annum, with rations, washing, apartments, &c.

BOURNEMOUTH, ROYAL VICTORIA HOSPITAL.—House Surgeon. Salary £100 per annum, with board, rooms, and laundry.

BRADFORD UNION, EASTBY SANATORIUM, near Skipton.—Assistant Resident Medical Officer, unmarried. Salary £130 per annum, with rations, apartments, and laundry.

BRIDGWATER HOSPITAL.—House Surgeon for six months, unmarried. Salary at rate of £100 per annum, with board, lodging, and washing.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with apartments, board, and laundry.

CAIRO, EGYPT.—Medical Tutor at School of Medicine and Registrar to Kasr-El-Ainy Hospital. Salary £E.600 a year.

CANTERBURY, KENT AND CANTERBURY HOSPITAL.—House Physician, unmarried. Salary £70 per annum, with board, lodging, and washing.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—Two House Surgeons for six months. Salary £30, with board, residence, and laundry.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Clinical Assistant.

DERBYSHIRE ROYAL INFIRMARY.—House Physician and Second House Surgeon for 12 months. Salary in each case £100 per annum, with apartments, board, &c. Also Assistant House Surgeon for six months. Salary at rate of £60 per annum, with apartments, board, &c.

GLASGOW PARISH COUNCIL, STOBHILL GENERAL HOSPITAL, Springburn.—Two Junior Resident Assistants (male and female). Salary £120 per annum, with board and apartments.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with residence, board, and washing.

INDIAN MEDICAL SERVICE, India Office, London.—Fourteen Commissions in His Majesty's Indian Medical Service.

LEEDS GENERAL INFIRMARY.—Ophthalmic House Surgeon for six months. Salary at rate of £50 per annum, with board, residence, and washing.

LEICESTER INFIRMARY.—Second House Surgeon for six months. Salary at rate of £100 per annum, with board, apartments, and washing. Also Honorary Pathologist.

LINCOLN GENERAL DISPENSARY.—Resident Junior Medical Officer, unmarried. Salary £175 per annum, with apartments, &c.

LIVERPOOL, HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Mount Pleasant.—Assistant Medical Officer and Pathologist. Salary £200 per annum.

MANCHESTER DENTAL HOSPITAL.—Honorary Anæsthetist.

MIDDLESEX HOSPITAL, W.—Second Assistant to Bacteriological and Clinical Laboratories.

NATIONAL DENTAL HOSPITAL AND COLLEGE, Great Portland-street, W.—Anæsthetist.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with board, lodging, and washing.

PARK HOSPITAL FOR CHILDREN, Hither Green, S.E.—Senior Assistant Medical Officer. Salary £250 per annum. Also Assistant Medical Officer. Salary £150 per annum. Both with board, lodging, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROTHERHAM HOSPITAL.—Senior House Surgeon. Salary £110 per annum, with board, lodging, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Assistant Physician.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.—Tutor in Public Health.

ST. LUKE'S HOSPITAL FOR MENTAL DISEASES, Old-street, London, E.C.—Second Assistant Medical Officer, unmarried. Salary £130 per annum, with board, apartments, and washing.

ST. MARK'S HOSPITAL FOR CANCER, FISTULA, AND OTHER DISEASES OF THE RECTUM, City-road, London, E.C.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ST. THOMAS'S HOSPITAL.—Dental Surgeon.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Physician. Salary £100 per annum, with rooms, board, and washing.

SOUTH UIST.—Medical Officer. Salary £100, with house.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician for six months. Salary £40, with board, lodging, and laundry.

WANDSWORTH UNION INFIRMARY, St. John's-hill, near Clapham Junction.—Junior Assistant Medical Officer, unmarried. Salary at rate of £120 per annum, with board, lodging, and washing.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Assistant Physician. Also Honorary Medical Registrar.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Athlone, in the county of West Meath; at Whitstable, in the county of Kent; and at Brigg, in the county of Lincoln.

Births, Marriages, and Deaths.

BIRTHS.

BUZZARD.—On Dec. 1st, at Wimpole-street, W., the wife of E. Farquhar Buzzard, M.D. Oxon., F.R.C.P., of a daughter.

DRAKE.—On Nov. 29th, the wife of A. W. Courtney Drake, M.B., B.C., of a son.

GUTCH.—On Dec. 1st, at Fonnereau-road, Ipswich, the wife of John Gutch, M.D. Cantab., of a son.

SODEN.—On Nov. 28th, at Mapesbury-road, Brondesbury, the wife of Dr. Wilfred Soden, prematurely, of a son (stillborn).

MARRIAGES.

BUSHNELL—EWING.—On Nov. 26th, at St. George's, Hanover-square, Percy Charles Bushnell, M.R.C.S., L.R.C.P., to Mary Jessie Ramsay, daughter of the late William Ewing, of Ardmohr, Kirn, N.B.

DEATHS.

BOND.—On Nov. 30th, at Suffolk Lodge, Maida Vale, Joseph Henry Bond, L.R.C.P.I., aged 54 years.

DE JERSEY.—On Dec. 2nd, at Ascot, Walter Brock de Jersey, M.B. Camb., of Netherton, Guildford, aged 47 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

RATS.

RATS are rapidly becoming creatures of first importance in sociology, and it is interesting to refer to chronicles and see how our fathers and grandfathers viewed the rat in its relation to mankind and civilisation. An article was published in the *Quarterly Review* in 1857 by Dr. Andrew Wynter, who wrote many essays on interesting subjects outside medicine and was also a medical journalist and editor of the *British Medical Journal* from 1856 to 1860. After quoting Grainger's poetic invocation, "Now, Muse, let's sing of rats," the "whisker'd vermin race," Dr. Wynter discusses the origin of the land rats in England, the old English black rat, and the Norwegian, or brown rat. The genuine ship rat, he states, is a more delicate animal than the brown rat, and the water rat he finds to be an entirely different species from the ship rat. Dr. Wynter's story of the extinction of rats from the London sewers is gruesome. Not many years since, he says, they existed in millions in the drains and sewers of the metropolis, but the method of flushing the sewers which had been adopted about the time of writing this article proved, he considered, exceedingly fatal to them. "When the sluices are opened," he says, "go they must with the rush of waters, and they may be seen shot out by hundreds from the mouths of the culverts in the Thames." The fact that rats in that hyper-sporting time were worth 3*s.* a dozen for sporting purposes proved, he thought, another most certain means of their destruction, for it ensured their ceaseless pursuit by man. Talking of London, he writes that the underground city of sewers became one vast hunting-ground, in which men regularly gained a livelihood by capturing them. These vermin congregated thickest in the neighbourhood of slaughter-houses or, in other words, where food was most plentiful. A remarkable tale is related of a great killing of rats by the proprietor of one of the Montfaucon slaughter-houses, who, aided by his workmen, killed 16,050 rats in a month, and 2650 in a single night on his own premises by means of blows from sticks held in one hand and torches in the other. Dr. Wynter gets off on his audience some well-known though little authenticated anecdotes of the sagacity of rats. He describes them as leading their blind companions to food, as fishing for oil with their tails, and as transporting eggs by the process of one rat lying on his back clasping the egg while his comrade drags him away by the tail. He speaks of the proprietors of the bonded wheat warehouses on the banks of the Thames who are forced to take the utmost precautions against the entrance of myriads of rats from the sewers and waterside premises, and describes wheat stacks and ricks in the country which, although seeming fair on the outside, are being really "little better than a huge rat-pie." Terriers and ferrets in their relation to rats receive a few pages of attention, and a tale is told of the driver of a London omnibus who made a pet of a piebald rat who acted as guardian of the driver's dinner on the boot of the omnibus and at night went home in his master's pocket, and on cold nights crept in his master's bed for warmth and slumber. At the word of command, "Come along, Ikey," he would jump into the ample great-coat pocket. The following paragraph must conclude our extracts from Dr. Wynter's interesting article:—

> "The rat, as we have said, has many enemies; the weazel, the pole-cat, the otter, the dog, the cat, and the snake hunt him remorselessly all over the world. Man, however, is his most relentless and destructive enemy. In some places he is killed for food, as in China, where dried split rats are sold as a dainty. The *chiffonniers* of Paris feed on them without reluctance. Nor is rat-pie altogether obsolete in our own country. The gipsies continue to eat such as are caught in stacks and barns, and a distinguished surgeon of our time frequently had them served up at his table. They feed chiefly upon grain; and it is merely the repulsive idea which attaches to this animal under every form that causes it to be rejected by the same man who esteems the lobster, the crab, and the shrimp a delicacy, although he knows that they are the scavengers of the sea. They were not always so nice in the navy. An old captain in Her Majesty's service informs us that on one occasion, when returning from India, the vessel was infested with rats, which made great ravages among the biscuit. Jack, to compensate for his lost provisions, had all the spoilers he could killed, put into pies, and considered them an extraordinary delicacy."

COMPLETE TRAUMATIC AVULSION OF THE HEART.

THE following case is worth recording. A boy, aged 6, was brought in dead to St. Mary's Hospital on Oct. 23th, death having been produced by severe injuries inflicted by a motor omnibus. The external injuries were strikingly slight, consisting merely of bruises and abrasions of both groins, the perineum, anterior part of left iliac crest, left clavicle, front of left and back of right elbow; the prepuce was also lacerated; a little blood was present on the face from the nose. On opening the body the following injuries were discovered: A depressed fracture of the symphysis, pubis, and left innominate bone; lacerated wounds of the anterior part of the liver, spleen, and small intestine. All the ribs on the left side, except the eleventh and twelfth, were fractured, mostly in two places, before and behind; on the right side the second rib was broken. The right bronchus was severed and the pedicle of the lung nearly divided; the lungs themselves were uninjured. The right pleural cavity was occupied by blood. The heart was completely detached, lying quite free therein at the lower part of the cavity. The pericardium had been ruptured on the right side vertically, and through this aperture the heart had evidently escaped. There was a fracture of the spine at the level of the third dorsal vertebra, as though produced by over-extension; rupture of the upper end of the descending aorta and rupture also of the œsophagus. There was a longitudinal fissured fracture of the posterior fossa of the skull, and slight capillary extravasation over the brain. Amongst other things, two features of special interest about this case were the absence of marks of external violence over the region of the thorax externally, and the condition and position of the heart, which was completely isolated from all its attachments, lying quite free in a pool of blood at the base of the right pleural cavity.

"A SEQUEL TO SECRET REMEDIES."

WE have received from Mr. Frederick Phillips a pamphlet with this title, which has been written in reply to the statements and inferences of "Secret Remedies" published last year by the British Medical Association.

BONE-SETTING.

WE received from Mr. H. A. Barker a letter on Nov. 23rd in reply to our article in THE LANCET under this heading. Mr. Barker says:—

> "You throw out a hint of doubt as to the authenticity of the facts given in Mr. Stead's article, and suspect that he has exaggerated the situation. It is an easy matter to verify the facts. You find it impossible to believe that I can have treated over 30,000 cases in under 20 years practice—*conjecturing* that I must take an "hour over each case," and stating that I said 5 to 20 manipulations were necessary for each patient. As a matter of fact, I wrote, in explaining my modus operandi for talipes valgus, that from five to twenty manipulations were sufficient to bring about a normal condition of things in the majority of cases *of this kind*. I did not say that such a number of visits was necessary for every case. As a matter of fact hundreds of my patients are finished with in 1 or 2 visits. I have frequently dealt with 4 and even 5 patients in an hour as my books will show. I have often had 35 and 40 patients through my hands in a single day, and on rare occasions 40 and 45. Taking only 5 patients a day, you will arrive at about the figures I have given you—without sunday—on which day I sometimes see a dozen or more cases."

We are happy to insert Mr. Barker's statement. Our impression was derived from Mr. Stead's article.

REMEDIA "HOECHST."

THE attention of our readers may with advantage be drawn to an excellent compilation by Messrs. Meister, Lucius, and Brüning, Hoechst-on-Maine and 51, St. Mary Axe, London, of the new remedies which chemical, pharmacological, and biological researches have placed at the disposal of medical science during recent years. The work is in German and deals very comprehensively with pharmaceutical products and serotherapeutic and bacterial preparations. In addition to a description of each preparation, chemical reports by well-recognised authorities are appended. Remedia "Hoechst" is a book of 794 pages, and should be a valuable work of reference to the practitioner who can read German. We understand that copies are supplied to the profession free of charge.

F. S.—In the present state of the law we fear nothing can be done to stop the appalling harm done by the advertising quack.

ERRATUM.—In Mr. Robert Jones's paper on Fractures in the Neighbourhood of Joints, which was published in THE LANCET of Nov. 19th, it is stated more than once that fracture of the neck of the femur is treated by Mr. Jones "in an adducted position." This should be "in an *ab*ducted position."

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1910:—

„ 19th–22nd (Rome).—Twentieth Congress of Internal Medicine.

In 1911:—

Feb. 20th–25th (Cairo).—Fifth International Congress for the Blind.
March 2nd–6th (Berlin).—Thirty-second Balneological Congress.
„ 23rd (Paris).—First Congress of French Medical Journalists.
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
„ 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.

April 19th-22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
May-October (Dresden).—International Hygiene Exhibition.
May-October (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May-October (?) (London, Shepherd's Bush).—Coronation Exhibition.
June (Paris).—First Congress of the International Medical Association for the Prevention of War.
June 5th-8th (Kolberg, Prussia).—Fifth International Congress of Thalassotherapy.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Birmingham).—British Medical Association.
July 24th-29th (Belfast).—Congress of the Royal Sanitary Institute.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September (Brussels).—Exhibition of Fractures.
" (Turin).—International Congress of Pathology.
Sept. 11th-15th (Berlin).—National Congress for the Study and Prevention of Infantile Mortality (*Gouttes de Lait*).
" 11th-16th (The Hague).—Thirteenth International Congress on Alcoholism.
" 18th-23rd (Sydney).—Australasian Medical Congress.
" 24th-30th (Rome).—International Congress on Tuberculosis.
" 25th-29th (Rome) Seventh International Congress of Dermatology and Syphilology.
October (Cologne).—International Congress of Criminal Anthropology.
Oct. 1st-4th (Liége).—Second Congress of Alimentation.
Dec. 4th-9th (Havana, Cuba).—American Public Health Association.
(Date not fixed) (Genoa).—International Exhibition of Marine Hygiene.

In 1912:—
July (?) (Cologne).—International Congress of Nurses.
September (Prague).—International Congress of Radiology and Medical Electrology.
September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
" Visit of German Medical Men to America.
Nov. 22nd-29th (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

In 1913:—
(London).—Seventeenth International Congress of Medicine.
(Dresden (?)).—International Conference on Cancer.

In 1915:—
(London).—International Prison Congress.
(London).—Imperial Exhibition (?)

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

TUESDAY.

SURGICAL SECTION (Hon. Secretaries—Jonathan Hutchinson, L. A. Dunn): at 5.30 P.M.

Papers:
Mr. W. G. Spencer: Septicæmia Hæmorrhagica; Severe Capillary and Parenchymatous Hæmorrhage of Septic Origin.
Mr. J. Hutchinson: Gastric and Intestinal Hæmorrhages (probably of Septic Origin) following Abdominal Operations.
Mr. A. E. Johnson: Fractures of the Patella without Separation of the Fragments.

WEDNESDAY.

SECTION OF BALNEOLOGY AND CLIMATOLOGY (Hon. Secretary—F. A. de T. Mouillot): at 5.30 P.M.

Paper:
Dr. Neville Wood: English Health Resorts for Foreign Invalids.

THURSDAY.

DERMATOLOGICAL SECTION (Hon. Secretaries—H. G. Adamson, J. H. Sequeira), at 11, Chandos-street, W.: at 5 P.M.

Cases.

NEUROLOGICAL SECTION (Hon. Secretaries—E. Farquhar Buzzard, Wilfred Harris), at 11, Chandos-street, W.: at 8 P.M.

Clinical Meeting.

FRIDAY.

ELECTRO-THERAPEUTICAL SECTION (Hon. Secretaries—Reginald Morton, G. Harrison Orton): at 8.30 P.M.

Paper:
Dr. Horace Manders: The Use and Value of Electricity in the Treatment of some Abdominal Diseases.

Cases:
Dr. Lewis Jones: (1) Case of Gonorrhœal Arthritis of Wrist: (2) Case of Sprengel's Deformity; (3) Early Dupuytren's Contraction.

Unusual Cases, Skiagrams, &c., will also be shown by Dr. Ironside Bruce, Dr. Reginald Morton, Dr. A. D. Reid, and Mr. Gilbert Scott.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Dr. D. Ferrier: Acromegaly.—Prof. A. Keith: Acromegaly from an Anatomist's Point of View.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury-square, W.C.

TUESDAY.—8 P.M., Mr. C. A. Hill: Note on the Crystallisation of Sodium Salicylate Solution (with demonstration).—Mr. J. C. Umney: A Triangular Contest in Peppermint Oils. Additions to the Museum:—Mr. E. M. Holmes: (1) Note on the Sleeping Sickness Fly and Tsetse Fly (with lantern Illustrations); (2) Note on Truxillo Coca,

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Grosvenor-road, S.W.

WEDNESDAY.—5 P.M., Lieut.-Colonel M. W. Russell, R.A.M.C.: Divisional Collecting Stations for Wounded.—Major W. E. Miles, R.A.M.C.(T.): Pruritus Ani.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.

FRIDAY.—8.30 P.M., Adjourned Discussion on Sir Rubert Boyce's paper on Yellow Fever in West Africa. The following papers will also be brought up for Discussion:—Dr. S. T. Darling: Autochthonous Oriental Sore in Panama.—Dr. R. F. Jones: Tropical Diseases in British New Guinea.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. M. H. MacLeod: Clinique (Skin). 5.15 P.M., Lecture:—Dr. W. Ewart: The Therapeutics of Bleeding.
TUESDAY.—4 P.M., Dr. G. A. Sutherland: Clinique (Medical). 5.15 P.M., Lecture:—Dr. J. Collier: Some Forms of Peripheral Neuritis.
WEDNESDAY.—4 P.M., Mr. G. E. Waugh: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. W. S. A. Griffith: The Use of the Douche.
THURSDAY.—4 P.M., Mr. H. J. Paterson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. J. Blumfeld: Anæsthetics in Cases of Cardiac and Pulmonary Diseases.
FRIDAY.—4 P.M., Dr. StClair Thomson: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon: Pathological Demonstration:—Dr. Bernstein. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Armour: Intestinal Obstruction.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M.: Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Armour: Intestinal Obstruction.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 12.15 P.M., Lecture: Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Mr. Ll. Williams: The Etiology, Prophylactics, and Treatment of Dental Caries.
THURSDAY.—10 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.
FRIDAY.—10 A.M., Medical Registrar: Demonstration of Cases in Wards. Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Medical Registrar: Examination of the Abdomen.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 3.15 P.M., Special Lecture:—Sir Dyce Duckworth: Varieties of Albuminuria.
TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Dr. R. Wells: Differential Diagnosis of Early Forms of Insanity.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 3.15 P.M., Special Lecture:—Sir William Bennett: Surgical Aspects of Abdominal Flatulence.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. E. Gillespie), 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson).
TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations (Mr. Carson). Clinics:—Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient: (Dr. A. J. Whiting).
WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Dr. A. H. Pirie). 4.30 P.M., Lecture:—Mr. Brooks: Glaucoma.
THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Demonstration:—Dr. Whipham: Selected Cases of Children's Disease.

FRIDAY.—2.30 P.M., Operations (Mr. Howell Evans). Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie).

HOSPITAL FOR SICK CHILDREN (UNIVERSITY OF LONDON), Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Dr. Thompson: Tetany.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4 P.M., Lecture:—Dr. B. Shaw: Ultra Chronic Pulmonary Tuberculosis.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Mr. D. Armour: Surgery of the Nervous System.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Aphasia.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.

TUESDAY.—3.45 P.M., Lecture:—Mr. W. Stuart-Low: Accessory Sinuses.

FRIDAY.—3.45 P.M., Lecture:—Dr. A. Wylie: Larynx.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Bullous and Vesicular Eruptions (continued)—V., Herpes; VI., Zoster; VII., Dermatitis Herpetiformis.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. F. C. Moore: Uræmia. (Post-Graduate Clinic.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (14th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.20 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

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FRIDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

SATURDAY (17th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 7th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec. 1	29·79	S.E.	0·69	47	46	39	43	44	Raining
,, 2	29·95	S.E.	0·46	46	44	43	42	43	Raining
,, 3	29·90	S.E.	0·21	45	45	40	41	41	Overcast
,, 4	29·47	S.W.	0·24	67	53	41	45	47	Cloudy
,, 5	29·20	S.W.	0·23	71	54	47	49	52	Cloudy
,, 6	29·28	E.	...	56	52	47	47	48	Overcast
,, 7	29·60	S.	0·01	57	52	45	48	48	Cloudy

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A Lecture
ON
THE AFTERMATH OF EYE-STRAIN.

Being the Richard Middlemore Post-Graduate Lecture, delivered on Dec. 1st, 1910, at the Birmingham and Midland Eye Hospital,

BY SYDNEY STEPHENSON, M.B., C.M. EDIN., D.O. OXON., F.R.C.S. EDIN.,
OPHTHALMIC SURGEON TO THE QUEEN'S HOSPITAL FOR CHILDREN AND QUEEN CHARLOTTE'S HOSPITAL.

GENTLEMEN,—Among the minor ills of life few occupy a more important place than those which arise from eye-strain. Many a headache, many an attack of giddiness, many an instance of "brain-fag," and many a so-called "nervous breakdown" tells only too surely of an unsuspected error of refraction, or of subnormal accommodation, or of a muscular imperfection of the eyes, all of which may be relieved by suitable spectacles. These cases come in the first instance under the notice of the family medical adviser rather than of the ophthalmic surgeon. It is therefore a matter of no little consequence for him to be acquainted with the peculiarities of eye-strain, so that patients may be freed from their discomfort in the speediest possible way. What I have to say will not deal with those physical peculiarities of the eye which give rise to the several conditions known as hyperopia, myopia, or astigmia. They have been made the subject of a former Middlemore lecture by Mr. Henry Eales.[1] On the contrary, my remarks will deal with the several conditions known and believed to result from eye-strain, and in describing them I shall touch upon the evidence on which our knowledge is based.

GENERAL REMARKS.

1. *How to recognise symptomatic eye-strain.*—Whenever a headache, migraine, vertigo, or "tic" is induced or made worse by use of the eyes and relieved by rest we may safely assume it is due to eye-strain. That supposition is strengthened (paradoxical though it may seem) if the patient possesses sight which when estimated by the test-types is found to be normal or super-normal. It is a suspicious circumstance if headache is complained of after a visit to a theatre or a picture gallery, or a journey by train, tram, or car. There is more than the proverbial grain of truth in the epigram of an American physician who remarked that there was nothing particularly characteristic about the headache of eye-strain, except that the subject rarely suspected that his eyes were at fault. This point has been emphasised anew by Dr. James Hinshelwood, of Glasgow.[2] Then there is the fact that an ocular reflex can often be inhibited for the time being by putting a drop of atropine (or other cycloplegic) into the patient's eyes. Lastly, it can scarcely be repeated too often that no eye can be pronounced to be normal unless its refraction has been estimated by a competent surgeon under the influence of a cycloplegic.

2. *The kind of patient.*—Slight errors of refraction are most likely to cause distress in persons who have inherited or acquired an unstable nervous system, the "neuropathic" disposition, as Dr. George T. Stevens called it.[3] In my opinion, this factor dominates the entire question of eye-strain, especially in its severer manifestations. Women and children suffer more readily than men, among whom the highly strung are the more liable. The higher classes are more prone than the lower; the cultured than the uncultured. Clerks, teachers, stenographers, dressmakers, typewriters, students, and others compelled by occupation to use the eyes for hours at a time are particularly subject to the symptoms of eye-strain. The general health of the patient is by no means devoid of influence. It is clear that an error of refraction or of muscular balance is more likely to cause distress if the patient is in poor health, as from influenza, or debilitated, as from lactation or recent confinement. It is not uncommon for the trouble to disclose itself for the first time under such circumstances, even although the underlying ocular defect may have existed from childhood or even have been congenital.

3. *How eye-strain shows itself.*—By common consent, headache is the commonest reflex manifestation of eye-strain. It has been variously estimated that headaches of ocular origin form from 60 per cent. to 90 per cent. of all cases of headache. In an analysis of 106 instances of reflex neuroses probably due to the eyes, Dr. H. B. Ellis[4] found that headache was present in 87·7 per cent., digestive and assimilative disorders in 5·7 per cent., blind spells in 3·8 per cent., mental symptoms, loss of memory, &c., in 1·9 per cent., and insomnia in 0·9 per cent. The late Mr. Simeon Snell[5] found that of 800 consecutive refraction cases that came under his notice 162—that is, about 1 in every 5—sought advice in consequence of headache.

4. *The kind and magnitude of the error.*—Of all errors of refraction slight grades of hyperopia, and particularly of hyperopic astigmatism, are those most likely to cause distress. The tendency is greatly increased if the error be asymmetrical as regards the axis of the cylinder or be unequal in the two eyes. On the other hand, myopic defects usually produce poor sight rather than the common reflex manifestations of eye-strain, such as aching eyes or head.

The results of strain are more likely to occur when the underlying error of refraction is so small that it can be mastered for the time being by action of the ciliary muscle. To put the matter in another way, a large error of refraction, which cannot be overcome by those means, leads, as a rule, to defective sight and not to eye-strain. "The smaller the error," it has been aptly said,[6] "the more likely is eye-strain to be present, and also, unfortunately for the patient, the more likely is it to be overlooked."

Patients with eye-strain, then, seldom show any serious departure from normal when their relative visual acuity is estimated at Snellen's test-types, an important point for the physician to bear in mind.

5. *Method of estimating the error.*—The days are fairly outlived when it was seriously taught that an astigmatism of less than 1·00 D., provided it caused no interference with sight, might be safely disregarded. It is now recognised that under some conditions an amount of astigmatism of no more than 0·25 D. or even 0·12 D. may cause intense discomfort. For the detection of such small errors our means of examination can scarcely be too accurate. It goes without saying that the surgeon himself must be well versed in refractions. He must be equipped with suitable lenses, correctly designed trial-frames, and properly illuminated and drawn test-types, and he should be expert in the use of the retinoscope and of other instruments of precision, such as the keratometer. Everything hinges upon exactitude. "It is the little, the inconsiderable thing, in refraction work upon which the relief of the reflexes depends" (George M. Gould[7]).

Now the precise determination of ametropia, especially the low degrees of ametropia, is not possible, I believe, unless the eyes be under the influence of some agent, as homatropine, hyoscin, or atropine, which is capable of paralysing the ciliary muscle, a cycloplegic in fact. In no other way, to my thinking, can the full measure of the defect be disclosed. In young persons, indeed, the accommodation is so active that it may conceal a hyperopia of several diopters, to say nothing of a considerable degree of astigmia. To a certain extent the remark is true of older patients also. Not only must the cycloplegic be of the right kind, but it must be applied until accommodation is placed wholly in abeyance, a point that should always be ascertained by means of a suitable test. Speaking generally, the most trustworthy results are obtained when the selected drug is applied to the eyes by the surgeon himself.

SPECIAL REMARKS.

The ground having so far been cleared, we may now pass forward to consider in some detail those symptoms, general and local, which may result from eye-strain.

Although astigmatism was described more than a hundred years ago by Thomas Young,[8] yet our knowledge of its

[1] Henry Eales: Birmingham Medical Review, 1891, vol. xxix.
[2] James Hinshelwood: THE LANCET, July 14th, 1906, p. 78.
[3] George T. Stevens: Functional Nervous Diseases, New York, 1887.
[4] H. B. Ellis,: New York Medical Journal, April 30th, 1892.
[5] Simeon Snell: Eye-strain as a Cause of Headache and other Neuroses, London, 1904, p. 30.
[6] Ernest Clarke: Clinical Journal, March 2nd, 1910.
[7] George M. Gould: Biographic Clinics, vol. ii., p. 361, 1904.
[8] Thomas Young: Philosophical Transactions, 1793, p. 169.

pathological significance dates only from 1874, when Dr. S. Weir Mitchell,[9] of Philadelphia, published a remarkable article on the subject. Dr. Mitchell minimised the influence of rheumatism as a cause of headache and denied that of gout altogether. In particular, he directed attention to the headache of unsuspected eye-strain. He pointed out that "headaches come with many intraocular disorders, but neither in the books on the eye nor elsewhere is it made plain that headaches may be for years almost the sole symptom of grave disorders of accommodation, or of defect in the orderly action of the external eye muscles." In cases of chronic headache Dr. Weir Mitchell[10] insisted upon the necessity of "a careful study of the eye," and thereby laid future generations under a heavy debt of gratitude. In the following year Dr. Mitchell published his well-known "Notes on Headaches," in which he drew attention to the influence of illness, worry, anxiety, and so forth, in converting a latent defect of the eyes into one that produced active symptoms, as shown by headache and a sense of strain. About the same time as Dr. Mitchell's second paper was published an extraordinary case (which has since become almost classic) was brought before the Clinical Society of London by Mr. R. Brudenell Carter.[11] An undergraduate, whilst reading for honours, was suddenly attacked with diplopia, vertigo, headache, sickness, and palpitation of the heart, which were attributed to some obscure affection of the brain, a diagnosis confirmed by physicians both at the University and in London. The patient was sent on a voyage to Australia but came home no better. He was then told that he must give up all hope of succeeding to his father's business and abandon a marriage engagement to which he was committed. His prospects in life were blighted, and his despondency was commensurate with his misfortunes. Mr. Carter found this unfortunate young man to be short-sighted to the extent of 4·5 D., and after suitable spectacles were prescribed, all symptoms disappeared. It is satisfactory to add that when last heard of the patient was about to engage both in business and in matrimony.

A very suggestive case was reported by Dr. Weir Mitchell[12] in 1876. A girl, aged 16 years, suffered from headache, induced by use of the eyes, for several days after each of her periods, and at a later stage she developed an occasional unsteadiness of gait, together with a sudden sense of terror and vertigo. Her rest was broken and disturbed by dreams. By the aid of the ophthalmoscope a condition of "cerebral anæmia" was diagnosed. Under the use of glasses the vertigo at first grew worse, but soon it and the headache and insomnia passed away, so that in a month she was able to read, sew, and write for hours at a time.

In an oration delivered before the Medical Society of London in 1877 Dr. J. Hughlings Jackson[13] spoke of cases of abnormal refraction simulating brain disease, and he instanced the case of a medical student, 21 years of age, who had been obliged to give up his work because it brought on attacks of frontal headache and vomiting. To ordinary examination vision appeared to be good, but on remedying the hyperopic astigmia discovered on more complete examination the patient was enabled to return to his work and to graduate at the University of London. He had remained well up to the time Dr. Jackson wrote, a period of two years.

These communications drew the attention of the medical profession to the fact that headache was a common manifestation of overtaxed eyes, and that it might be accompanied by even more ominous symptoms. This enlightenment means a good deal, for, truth to say, many a member of the public goes direct to the ophthalmic surgeon when he finds that use of the eyes tends to make his head uncomfortable.

The functional headache of eye-strain is commoner than is generally thought. Pain may be present in almost any degree of severity, but is apt to be described by patients as a "dull aching" with paroxysms of more acute suffering from time to time. Although there is no characteristic position, yet the commonest site of ocular pain is over the brow and next to that in the temple. Occipital, vertical, and general headaches are by no means unknown as the direct consequence of strain upon the eyes. The cephalalgia is often associated with pain at the back of the eyes, which are apt to be tender. As a rule, both eyes suffer equally unless there be a marked difference in the refraction, when in common experience discomfort is usually worse on the side of the better eye. Apart from actual pain, the eyes may feel heavy, tired, or become red after use, or there may be complaints that they throb, burn, or water. A sign almost conclusive of eye-strain is the existence of slightly reddened eyelids, about the lashes of which are to be seen a number of fine branny scales. Whenever this condition (sometimes called "ametropic blepharitis") is seen we should at once think of asthenopia. An outbreak of small styes, too, is often a guide to the existence of eye-strain, and so is frequent blinking, with or without slight facial contortions, liable to be mistaken for chorea, of which something will be said later.

Apart from these considerations, the cardinal diagnostic point is that pain, whatever its exact site and nature, is brought on (or, at least, rendered worse) by using the eyes, it may be, for reading or, especially in the case of muscular errors, for distance. That those who suffer from ocular headache sometimes suffer also from disordered general health cannot be looked upon as extraordinary. Such complaints as insomnia, confusion of thought, inability to fix the attention, irritability of temper, and gastric disturbance are not rare, and those symptoms, like the headache, may often be relieved by suitable glasses.

Insomnia was cited a good many years ago as a symptom of astigmatism by Mr. H. B. Hewetson of Leeds.[14] He quoted a case where the eyes had given much trouble during the examinational period of an Oxford man's life. After astigmatism was corrected with glasses, with an equal amount of work, the insomnia disappeared, and the whole physical and nervous state of the patient improved greatly. Dr. Ambrose L. Ranney,[15] an American physician with leanings towards ophthalmology, has quoted illustrative cases, some of a striking nature. The late Mr. Simeon Snell[16] spoke of insomnia as a frequent manifestation of eye-strain, and commented upon the fact that natural sleep speedily returned when relief had been afforded to the over-taxed eyes by correcting glasses. Indeed, cases of this sort must be familiar to every ophthalmic surgeon, and I have myself notes of quite a number. A similar remark applies to irritability of temper, confusion of thought, and nausea after use of the eyes. It is sometimes astonishing to see the improvement in temper and general health that follows the correction of even low degrees of hyperopic astigmatism, especially in children. I may say that, in my opinion, a physician who attempts to treat a patient for chronic headache without first making a careful examination of the eyes fails in an elementary duty.

That migraine is often closely associated with ocular defects is no new observation, since the connexion was recognised by Piorry[17] 75 years ago, and since then has been commented on by many writers, including Airy, Liveing, Ranney, Hewetson, Lauder Brunton, Stevens, Gould, Clarke, and Snell. Indeed, in 1882 Dr. Savage[18] of Jackson, U.S.A., announced that he had discovered the "real cause" (*sic*) of sick headache to be hypermetropia and astigmatism, and consequently that its successful treatment lay in the use of proper glasses. A few years later our own countryman, Mr. H. B. Hewetson[19] laid stress upon the fact that correction of the eyes by cylindrical glasses relieved not only the headache but also the intermediate dyspepsia, insomnia, and irritability of temper liable to occur in some patients between the attacks of megrim. In the following year Dr. Ambrose L. Ranney[20] stated that "the symptoms of sick headache are reflex in character to a large extent, and due primarily in almost every case to some optical defect"; and, again, in 1892 he said that he had yet to encounter a typical sick headache not associated with eye-strain.

Nowadays, few would probably care to go so far in their

[9] S. Weir Mitchell: Medical and Surgical Reporter, July 25th and August 1st, 1874.

[10] Ibid., Feb. 6th, 1875.

[11] R. Brudenell Carter: Transactions of the Clinical Society of London, vol. viii., 1875, p. 12.

[12] Weir Mitchell: American Journal of the Medical Sciences, vol. lxxi., 1876, p. 363.

[13] J. Hughlings Jackson: THE LANCET, May 12th, 1877, p. 674.

[14] H. B. Hewetson: Brit. Med. Jour., Nov. 10th, 1888.

[15] Ambrose L. Ranney: New York Medical Journal, March 28th, 1891, and June 11th, 1892.

[16] Simeon Snell: Eye-strain as a Cause of Headache and other Neuroses. London, 1904.

[17] Piorry: quoted by E. Liveing On Megrim, Sick Headache, and Some Allied Disorders. London, 1873, p. 54.

[18] Savage: Medical and Surgical Reporter, July 29th, 1882.

[19] Hewetson, H. B.: Medical Times and Gazette, March 21st, 1885.

[20] Ambrose L. Ranney: New York Medical Journal, June 18th, 1892.

statements as Dr. Savage and Dr. Ranney,[21] although every experienced ophthalmic surgeon knows that many cases of migraine are closely connected with eye-strain. Speaking for myself, I could quote case after case of the relief or cure of migraine by the use of spectacles, but I shall content myself by placing on record my conviction that, as a matter of routine practice, the eyes should be examined in every case of sick-headache. In children it appears that migraine may be replaced by bouts of vomiting, as I have pointed out elsewhere,[22] and that some of these cases yield to the correction of associated ametropia. The following is a case in point: A boy, 8 years of age, had been subject for six years to fits of violent and prolonged vomiting, which came on every fortnight or so. The attacks generally supervened at 5 or 6 o'clock A.M., and lasted, as a rule, the entire day, but on occasion they had been known to persist for as long as three days. The emesis occurred independently of food, and the vomited matters consisted mainly of "frothy, white water." On close questioning the lad stated that now and then the vomiting was preceded by headache, although usually the former occurred alone. The patient's mother, maternal grandfather, and a maternal aunt all suffered from ordinary sick headache. The lad's sight was equal to one-half normal, and relief followed the constant use of correcting glasses. In some of these patients vomiting is replaced after the advent of puberty by migraine of a more or less typical description. What connexion, if any, such cases have with the curious condition known as "cyclic vomiting" in children, believed by some to be due to acetonæmia, would be an interesting subject for inquiry. There are certainly points of resemblance between the two.

Vertigo as a consequence of eye-strain is a symptom that is more likely to take a patient to a general physician than to an ophthalmic surgeon. That it occurs is undoubted. It appears to be more common in women than in men. I can recall some striking instances of its cure by the correction of astigmia and especially of vertical deviations of the eyeball, hyperphoria. Thus, a gentleman occupying an important judicial position was so tormented with giddiness that he entertained serious thoughts of resigning his office. The symptom was entirely relieved by correcting the hyperopic astigmia and anisometropia from which he suffered. Mr. C. E. Pronger[23] mentions a very similar case. The patient developed curious attacks of giddiness which came on when awakening from sleep and produced an unconscious condition that lasted for about 15 minutes and that was followed by a violent headache. Bromides, suggested by a London specialist, availed nothing. The result of glasses, however, was most satisfactory.

Most of the remaining effects of uncompensated eye-strain may be grouped as neuroses—that is to say, as nervous affections of a functional nature. One phase of the functional neurosis known as "habit-spasm" is commonly caused by ocular strain. It is liable to be confused with chorea, a point that doubtless accounts for some of the cases of so-called "chorea" stated to have been cured by glasses. Habit-spasm occurs chiefly in sparse and nervous children from 5 to 12 years, and usually shows itself by jerking movements of the eyelids, often accompanied by a drawing-up of the angle of the mouth. Less frequent symptoms are a trick of suddenly turning the eyes upwards or downwards, or of closing one eye. These signs often make up the sum-total of the ailment, but there may be convulsive movements of the tip of the nose, the forehead, shoulders, arms, hands, or legs, or a tendency to make uncouth noises. In many cases, more especially those in which blinking is the chief symptom, the correction of even a trifling error of refraction will check the "tic," as the condition is sometimes called. Atropine dropped into the eyes has sometimes the same effect. Elsewhere[24] I have reported a series of these cases, and in doing so I laid stress upon four points, which I venture to repeat in this place. They are as follows: (1) Such children seldom complain of eye-strain, an omission that is likely to mislead the practitioner; (2) their sight is usually good; (3) no dependence whatever should be attached to an estimation of refraction unless the eyes at the moment of examination are fully under the influence of atropine; and (4) the ametropia should be corrected almost fully by glasses to be worn for every purpose.

[21] Ibid., Feb. 27th, 1886.
[22] Sydney Stephenson: Medical Press and Circular, April 18th, 1906.
[23] Quoted by George M. Gould: Biographic Clinics, vol. iii., 1905, p. 191.
[24] Sydney Stephenson: Brit. Med. Jour., Sept. 18th, 1909, p. 751.

The following case appears to support the claim recently made by Mr. R. W. Doyne[25]—namely, that polyuria may be a manifestation of eye-strain. A thin and nervous man, aged 35 years, consulted me on account of painful eyes, which when bad were accompanied by nausea and followed by the passage of large amounts of pale urine. The condition had been present for five or six years. The full correction of compound myopic astigmatism (*minus* 1·0 D. sph. with *minus* 1·5 D. cyl. axis 80°) by spectacles for constant wear was speedily followed by loss of the headache and eventually of the polyuria. The patient himself was convinced that the glasses were responsible for his cure, although it is obviously impossible to exclude the influence of suggestion.

When we come to epilepsy and its relationship to eye-strain we enter upon debateable ground. That the characteristic convulsions may result from abnormal conditions of the eye has been warmly affirmed and hotly denied. Although I can make no personal contribution to the discussion, I can at least briefly describe the experiences of some other observers, and ask my hearers to draw their own conclusions as to the reality of the connexion. In 1887 Dr. Stevens and Dr. Ranney reported cases of epilepsy cured by glasses or by operations upon the external eye muscles. Somewhat later Dr. Wendell Reber[26] of Philadelphia described several instances of the same disease cured by glasses. Dr. George M. Gould[27] gave particulars of six such patients cured by glasses, and other American writers, as G. H. Thomas, Samuel Theobald, Myles Standish, Zimmerman, Gallaher, Semple, and Hubbell, have reported that in their experience epileptic attacks are either cured or reduced in number by the provision of proper glasses.

Opposing evidence was furnished by the commission appointed in 1887 by the New York Neurological Society to examine the claim made by Dr. George T. Stevens—namely, that ocular disturbances were "among the most prolific sources of nervous disturbances, and more frequently than other conditions, constitute a neuropathic tendency." After having investigated nine test cases, the commission reported that no single instance could be cited in which the cure of genuine epilepsy had followed correction of refractive or muscular errors of the eye. Of the cases three were improved, five remained without improvement, and, finally, in one the result was unknown. In view of these facts, the commission expressed the view that the method did not afford a sufficient degree of relief to patients to warrant its adoption or recommendation as a means of cure or as the sole therapeutic measure. Dr. Stevens[28] replied by alleging bad faith on the part of the commission, which, in addition to himself, included two members of his own nomination. He furthermore spoke of the report as "*ex parte* and objectionable in spirit and motive." Dr. Gould[29] dismisses the findings of the Stevens Commission with these contemptuous words: "One may summarise the results of this commission as being, perhaps, as worthless as the reports criticised."

Dr. William P. Spratling[30] has given an account of experiments carried out at the Craig Colony of Epileptics, Sonyea, New York—an institution of which he is the medical superintendent. Sixty-eight patients (mostly young or middle-aged adults) were selected for experiment—a number that included 35 men and 33 women. Attacks were tabulated for a period of three months previous to the use of correcting glasses, and again for periods of three, six, and 12 months after their employment. The ocular examinations (conducted under homatropine and cocaine) were carried out by Dr. George M. Gould, assisted by Dr. Arthur J. Bennett of Buffalo. The glasses were prescribed by Dr. Gould, and with few exceptions were worn from Sept. 1st, 1902, to Sept. 1st, 1903. The results obtained in 66 of the cases were as follows: (1) In one case there was an arrest of the attacks and cure seemed probable; (2) in 11 cases there was an apparent decrease in the attacks; (3) in 16 cases there was no change; and (4) in 33 cases the attacks increased.

The validity of the Craig Colony experiment has been

[25] R. W. Doyne: Brit. Med. Jour., August 13th, 1910.
[26] Wendell Reber: Pennsylvania State Journal, 1902.
[27] George M. Gould: American Medicine, July 15th, 1902; Journal of Mental and Nervous Diseases, November, 1889.
[28] Stevens: Journal of Mental and Nervous Diseases, 1889, p. 690.
[29] George M. Gould: Biographic Clinics, vol. iv., 1906, p. 355.
[30] William P. Spratling: American Medicine, April 9th, 1904. According to a later communication by Dr. Spratling (New York Medical Journal, Sept. 16th, 1905), the seizures in this patient recurred.

challenged by Dr. Gould, who speaks of "the confused and untrustworthy statistics of the official report," and criticises the absence of a resident oculist or optician to supervise the after-treatment of the cases. To quote his own curious words, Dr. Gould thinks he should have excluded from the list "the old hopeless patients, those on the verge of the grave, and hence incapable of convulsions after death." A bit of interesting evidence has been furnished by Dr. Hodskins and Dr. Moore,[31] who kept the eyes of 88 epileptics under the influence of atropine for a month. For the atropine months the seizures averaged 12·6 per patient, as compared with 13·2 for the average month. The authors firmly "believe that the rôle played by ocular defects in the causation of epilepsy is a very modest one." Finally, Dr. B. Sachs[32] does not know "of a single case in which epileptiform seizures have been altogether inhibited or even diminished in number by the wearing of glasses, by the cutting of muscles, or by any other ocular measures which have been adopted."

In our own country the ocular origin of some cases of epilepsy has been endorsed by several writers. To Mr. H. Work Dodd[33] we are indebted for a most important contribution dealing with the treatment by glasses of 100 consecutive cases of epilepsy at the West End Hospital for Nervous Diseases and Paralysis, London. All but three of the patients were examined with the eyes under the influence of a cycloplegic (atropine or homatropine). Into the carefully tabulated results we need not enter here. It is of more importance for our present purpose to note that 52 of the patients were ordered to wear glasses, and of that number 13 developed no fits during periods that varied from 4 to 12 months. In 36 other patients the condition was improved under glasses and three patients remained *in statu quo*. In reference to these somewhat striking figures, it is to be remarked that the usual medical treatment appears to have been continued in all the cases.

Mr. C. Ernest Pronger[34] makes the statement that in true epilepsy and in *petit mal* "some error of refraction is very commonly present and that the correction of it tends unmistakeably in my opinion to mitigate both the intensity and frequency of the attacks." This view amounts to little more than a pious expression of opinion and calls for no comment. But Mr. N. Bishop Harman[35] relates the case of a young lady subject to fits which "tallied well with the picture of epilepsy, save in one point—that consciousness was not lost," who experienced no further attacks after glasses had been prescribed for the hyperopic astigmia and anisometropia that were present in the case. It is unfortunate that in Mr. Harman's patient one essential of epilepsy—namely, loss of consciousness—was absent. Finally, Mr. Ernest Clarke[36] takes up the position that "the removal of eye-strain does not, in the strict sense of the word, cure epilepsy any more than it cures a headache, but by removing the eye-strain we remove one of the causes, and frequently the only cause, that determines an attack." Few will be found to join issue with this eminently reasonable proposition.

All things considered, I cannot help thinking that there is a case for further investigation into the relationship between eye-strain and epilepsy. In any such investigation it is to be hoped that three precautions will be adopted: (1) to make sure that the disease is true epilepsy and not a mere hysteroid convulsion; (2) to treat the patient by glasses alone; and (3) to observe the case not for weeks but for years.

In his famous "Biographic Clinics" Dr. George M. Gould, now of Ithaca, has shown with more or less likelihood that the "irritability," "nervousness," and general ill-health of some of our greatest writers and thinkers was the functional result of undetected eye-strain. Dr. Gould's list includes such names as those of de Quincey, Carlyle, Darwin, Huxley, Taine, Browning, Wagner, Balzac, Whittier, Flaubert, Spencer, Hearn, Chaikovsky, and Nietzsche. It cannot, indeed, be doubted that in some neuropathic individuals (the class from which great writers are mainly recruited) the eyes are accountable for a host of troubles, which range from "nervous breakdowns," mental apprehension, and agoraphobia, on the one hand, to the manifestations of neurasthenia or of actual mental disorder, on the other. At the same time such cases (which are far from common in my experience) occur only in nervous, highly-strung individuals. Dr. Samuel D. Risley[37] has recently pointed out that the ocular defects present in these psychoses are precisely those which are frequent in other patients, and he has laid particular stress on the fact that for the production of the symptoms another factor is essential—namely, an unstable nervous system, inherited or acquired. Again, there is always the influence of "suggestion" to be thought of. It is certain that an ophthalmic surgeon deeply imbued with a belief in the efficacy of glasses will do more with this particular class of patient than his equally competent brother whose enthusiasm is perchance tempered with a calmer judgment. Indeed, all things are possible to the eye of faith. But the hard fact remains that relief can be given to a certain number of these patients by careful attention to the eyes, a point that in my opinion merits more attention from the practising physicians than it has yet received, especially in this country and on the continent of Europe.

An example of a minor psychosis due to the eyes is well exemplified in a case related by Sir Lauder Brunton.[38] A patient consulted that distinguished physician complaining that he was losing his head. He had a large business, and whenever he sat down to his account books he could manage pretty well for five minutes, and then (he said) everything seemed to go round and he could not add two and two together. This patient's eyes were presbyopic, and his symptoms speedily yielded to a pair of spectacles. A case recently published by Dr. Wendell Reber[39] is even more striking. A girl, aged 25 years, suffered from dull occipital headache, and after reading and sewing, from vertigo and nausea, with a feeling "as though her head would burst." She became morose and depressed and began to fear she was losing her mental balance. She was distressingly thin, poorly nourished, and markedly neurasthenic. After correction of her hyperopic astigmatism by glasses she gained 18 pounds in six months and lost all her symptoms.

To the foregoing I may be permitted to add one or two illustrative cases that have come under my notice. The first is one of agoraphobia definitely cured by glasses. A woman, aged 30 years, who had always been subject to "blind headaches," complained that for the last 18 months she had become giddy on turning a corner or on passing into the light. During the last six months she had gradually developed a fear of open spaces. This symptom had become so marked that she was now unable to cross even an ordinary street, but if accompanied by a friend the feeling of fear was slight. In the right eye there was slight hyperopic astigmia, and in the left slight hyperopia. A prism of $\frac{1}{2}$ D. base out was required to produce fusion of distant objects. In the first four months, during which glasses were worn constantly, the giddiness and agoraphobia were entirely lost. Glasses were then used for reading alone, and there was a return of the symptoms, which again disappeared when they were worn constantly. In 1906 the lady suffered from pain behind the sternum ("inward neuralgia" was the diagnosis of her physician) for six months, during which period she had two slight attacks of agoraphobia, but no return of vertigo. With that exception the patient, who has been under observation since October, 1905, has remained free from any anxiety when crossing open spaces, no matter how wide.

The second case is one of periodic attacks of nausea, vertigo, and retching, lasting with intermissions for several hours, and sometimes followed by intense headache persisting for 24 hours. The attacks, which always began at night when the patient was in bed, had been present for about six years, and were getting worse when I saw the case in 1907. The patient, a man, aged 38 years, was in a highly nervous state, incapable of work, and apprehensive of all kinds of impending misfortune. Glasses prescribed in South Africa had done no good. A London physician had suggested that the underlying condition might be one of obscure intracranial mischief. Briefly, there was hyperopic astigmia against the rule, with a considerable difference between the

[31] Hodskin and Moore; Journal of Ophthalmology and Oto-laryngology, May, 1908.
[32] B. Sachs: Medical News, July 30th, 1904.
[33] H. Work Dodd: Brain, xvi., 1893, p. 534.
[34] C. Ernest Pronger: Slight Errors of Refraction and their Influence on the Nervous System, Harrogate, 1903.
[35] N. Bishop Harman: Medical Press and Circular, Nov. 18th, 1903.
[36] Ernest Clarke: Clinical Journal, March 2nd, 1910.
[37] Samuel D. Risley: Pennsylvania Medical Journal, February, 1910.
[38] Sir Lauder Brunton: On Disorders of Assimilation, Digestion, &c., London, 1904, p. 322.
[39] Wendell Reber: The Ophthalmoscope, December, 1910.

two eyes, and complete recovery of health followed the constant use of glasses which corrected the refractive error almost completely.

There would be little difficulty in multiplying such cases as the foregoing, but enough have been given to show the importance of examining the eyes in these curious psychoses. If this be done we shall sometimes succeed in ridding patients from distressing symptoms but little under the influence of ordinary remedies.

The manifestations that in my personal experience uncompensated asthenopia may produce have now been described, but in that of others the list is by no means exhausted. Many other conditions have been assigned to the same cause, although not always, I think, upon adequate evidence. Among these conditions may be mentioned dysmenorrhœa (A. Doran F. Hare), tachycardia (de Schweinitz), sleepiness (Doyne), enuresis (Gould, A. H. Fardon), sea-sickness (Pronger), night terrors (de Schweinitz), constipation (L. Williams), tinnitus (Theobald), Ménière's disease (F. P. Lewis), dermatitis (T. H. Butler), sinusitis (W. L. Phillips), appendicitis (R. T. Morris), and pre-tuberculosis (F. P. Lewis), to say nothing of head-tilting and spinal curvature, and, more startling still, of the drug habit, crime, insanity, and suicide. Some of these suggestions seem more than a little far-fetched.

THE SPECIFIC DIAGNOSIS OF PULMONARY TUBERCULOSIS.[1]

BY A. C. INMAN, M.A., M.B. OXON.,

SUPERINTENDENT OF THE LABORATORIES OF THE BROMPTON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.

THE diagnosis of early pulmonary tuberculosis is so important, both from the point of view of the physician who is asked to express an opinion and of the patient who asks for this opinion, that a review of the recent methods which may conduce to an accurate diagnosis of this disease is worthy of careful consideration. It must be understood that what we are striving to obtain is a method, or combination of methods, which will specify tuberculosis of the lungs which calls for treatment. The tubercle bacillus is ubiquitous and all-invading, but fortunately for the human race not all-conquering. The classical investigations of Nägeli have clearly shown that practically all individuals over 30 years of age have been brought into conflict with this bacterium. I am convinced that the ultimate results of all the scientific work which is being devoted to the study of pulmonary tuberculosis will go far to explain the methods of natural cure which takes place in many cases, and will expose the effects on the animal economy to which such an invasion inevitably leads.

A generation has hardly passed since Koch, whose death the scientific world still mourns, conclusively proved that the bacillus tuberculosis which he described is the sole cause of tuberculosis. The presence of this bacillus in any focus of disease or in the output of any such focus is recognised as irrefutable proof of the tuberculous nature of the disease.

The presence of tubercle bacilli in the sputum is absolutely diagnostic of pulmonary tuberculosis if primary disease of the upper air-passages, which is very rare, can be excluded. It follows that as regards the diagnosis of pulmonary tuberculosis the examination of the sputum for tubercle bacilli is of the first importance. Such an examination is now universally practised as a routine method, and yet there are considerations which, though not generally recognised, are worthy of attention in this connexion. It is important to examine carefully whenever possible the early morning expectoration—that is to say, the first sputum expectorated after the night's sleep. Careful search of such a specimen has often been rewarded by a positive result after numerous negative examinations of specimens collected at random during the day-time. For routine examinations the sputum supplied should be spread out on a piece of glass against a dark background and carefully searched for yellow purulent foci, from which films are made. These are dried by agitation in the air or by subjection to moderate heat and stained by the Ziehl-Neelsen method (warm carbol-fuchsin, which should not be heated to ebullition, decolourised with 25 per cent. sulphuric acid, and counter-stained with 1 per cent. aqueous methylene blue). A single negative examination is quite inconclusive, for which reason the routine adopted at this hospital has been to examine three specimens collected on separate days in all doubtful cases.

Carl Spengler (1) has advocated the use of picric acid as a mordant for the fuchsin in addition to the carbolic acid, and in this way claims to have demonstrated tubercle bacilli in sputa in which their presence was not revealed by the Ziehl-Neelsen method.

Method.—Stain films with carbol-fuchsin. Pour off the stain and add picric acid-alcohol for 2-3 minutes. Wash with 60 per cent. alcohol, add 3-4 drops of 15 per cent. nitric acid, wash with 60 per cent. alcohol, and counter-stain with picric acid-alcohol until the films are coloured yellow. Wash and dry.

Mr. R. C. Styles, F.I.C., has carefully investigated this method in the Brompton Hospital Laboratory, and was unable to demonstrate tubercle bacilli in any specimens of sputum in which no tubercle bacilli had been found by the routine method. He showed, however, that in nearly all cases more tubercle bacilli were demonstrable by this procedure than by the Ziehl-Neelsen method.

By the above methods only part of the sputum supplied is examined microscopically. In the event of three searches proving negative the whole quantity of sputum available should be examined by one of the methods of concentration. For this purpose the older manners of proceeding—such as homogenisation with caustic potash, or agitation in carbolic acid, subsequent spinning in the centrifuge, and examination of the deposit—have been superseded by the following improvements in technique.

1. The ligroin method of Lange and Nitsche (2).

Place 5 c.c. of sputum in a conical flask and add 50 c.c. of caustic potash (5 per cent.). Shake vigorously and allow the mixture to remain at room temperature until the sputum is thoroughly homogenised. Dilute with 50 c.c. of tap water and shake again. Then add 2 c.c. of ligroin and shake vigorously until a thick emulsion is produced. Warm the mixture to 60° C. until distinct separation of the hydrocarbon occurs as evidenced by effervescence and the formation of a superficial layer of small bubbles. A number of drops are then taken from immediately below this superficial layer with a platinum loop and placed on a warm slide. The dry film is then fixed with a saturated solution of perchloride of mercury and stained by the Ziehl-Neelsen method.

Ligroin is petroleum ether obtained by the fractional distillation of petroleum. Mr. Styles also investigated the utility of this method and was able to demonstrate tubercle bacilli in four cases from 50 samples of sputum which had yielded a negative result with the routine method.

2. The antiformin method of Uhlenhuth and Xylander (3).

The sputum is homogenised with 15 per cent. antiformin (a mixture of equal parts of sodium hypochlorite and sodium hydrate, obtainable from Oskar Kühn, Berlin). The mixture is sedimented in a high revolution centrifuge. After decanting the supernatant fluid the deposit is washed in physiological salt solution and again centrifuged. Films are then made from the resulting deposit, dried, fixed in perchloride of mercury, and stained by the Ziehl-Neelsen method.

This procedure is quick and very effective. It needs but a short acquaintance with it to be convinced of its superiority over other methods.

3. Loeffler (4) has recently suggested an ingenious modification of the antiformin method which is worthy of mention. Availing himself of the high specific gravity of chloroform (sp. gr. 1497) his modification is as follows:—

To 5–20 c.c. of sputum is added an equal quantity of 50 per cent. antiformin. The mixture is heated until a clear liquid results. To 10 c.c. of this mixture is added a 10 per cent. solution of chloroform in alcohol (5 c.c. generally suffice). After thorough shaking the fluid is centrifuged for 15 minutes. An opaque layer is then found to exist between the chloroform which occupies the bottom of the centrifuge and the supernatant fluid. The latter is pipetted off and the intermediate opaque layer removed wholly on to a slide. Films are made, dried, fixed, and stained.

The method yields excellent results, is rapid, and simple. When employing any of the above concentration methods it must be borne in mind that living virulent bacilli are being dealt with and precautionary methods of disinfection of the hands, test-tubes, and instruments used must be adopted.

Rosenberger (5) startled the medical world by announcing that he had found tubercle bacilli in the circulating blood of the majority of consumptive patients even in the earliest stages of the disease. The positive results of this observer have not, however, been confirmed by the majority of workers on this subject. Lippmann (6), taking 10 c.c. of blood from the patient and adding to it 30 c.c. of acetic acid (3 per cent.), made an emulsion of the deposit produced by centrifuging this mixture. To the emulsion he added 60 c.c. of antiformin (15 per cent.), incubated it for one hour at 37° C., and then sedimented the solid particles by centrifuging. In films from the deposit he found tubercle bacilli in the following percentage of cases with reference to the stage of disease:—Third stage, in 53 per cent. of cases;

[1] Founded on a lecture delivered at the Brompton Hospital on Nov. 9th, 1910.

second stage, in 33 per cent. of cases; and first stage, in 0 per cent. of cases (one case).

Schnitter (7), examining the blood of 34 cases of tuberculosis, found tubercle bacilli in 10 cases. He agrees with Liebermeister that the presence of tubercle bacilli in the blood implies a grave prognosis and suggests impending death. His cases were divided as follows:—

	No. of cases.	T.B. in blood.	
Third stage	17	8	47 per cent.
Second stage	9	2	22 ,,
First stage	8	0	0 ,,

Ravenal and Smith (8) were unable to find tubercle bacilli in the blood of 18 cases of tuberculosis examined.

Jessen and Lydia Rabinowitsch (9) found tubercle bacilli in the blood of 12 cases of third stage in 5 cases (Much's granules in 1 case); 12 cases of second stage in 0 cases (Much's granules in 2 cases); and 12 cases of first stage in 2 cases.

Hunt (10) examined the blood of 20 patients for tubercle bacilli. Of these, 13 had tubercle bacilli in the sputum, one had been diagnosed as tuberculous peritonitis, one as tuberculous laryngitis, and five were under suspicion of being tuberculous. Of smears made from the blood of 19 patients, 15 gave negative results as regards acid-fast bacilli. Of the remaining four bloods (two from cases with tubercle bacilli in the sputum, one case diagnosed as tuberculous peritonitis, the other suspected to be tuberculous), in one the films were only decolourised with 2½ per cent. sulphuric acid, in two the acid-fast bacilli were morphologically unlike tubercle bacilli; whilst in one case, in which a clump of bacilli resembling the tubercle bacillus was found, the inoculation into a guinea-pig of the remainder of the blood did not produce tuberculosis. Eleven guinea-pigs were inoculated with the blood from ten cases. At the necropsies performed on these animals after a natural or unnatural death, no evidence of tuberculosis was detected in any of them. Dr. MacNalty is at present investigating this subject at the Brompton Hospital, and I am permitted to say that so far his results cannot confirm those of Rosenberger.

Latterly, attention has been paid to the examination of the fæces for tubercle bacilli. The antiformin method is especially suited to such examinations.

Method.—A portion of fæces, about 1 cubic inch, is placed in 20 c.c. of antiformin (15 per cent.). By means of a glass rod the fæcal mass can be easily broken up and a coarse emulsion produced. Another 20 c.c. of antiformin is added to the emulsion, the vessel employed is closed, and the mixture is allowed to stand for two hours. At the end of this time a creamy sediment is seen to have collected at the bottom of the vessel. Some of this layer is removed with a pipette, films are prepared with it, dried, fixed with perchloride of mercury, and stained by the Ziehl-Neelsen method. Decolourisation may be practised with alcohol (60 per cent.) in addition to the sulphuric acid (25 per cent.).

Rosenberger and Willson (11) have stated that they found tubercle bacilli in the stools of 100 tuberculous patients and of 21·5 per cent. of clinically healthy persons.

Klose (12) claims to have found tubercle bacilli in the fæces of every case of pulmonary tuberculosis in which tubercle bacilli were present in the sputum.

Philip and Porter (13) examined 109 specimens of fæces. Of these, 99 were clinically cases of pulmonary tuberculosis, 34 had tubercle bacilli in the sputum, 42 had sputum in which no tubercle bacilli had been discovered, and 24 had no sputum at all. "Of the tuberculous patients, all those with bacilli in their expectoration, with one exception, presented tubercle bacilli in the fæces. In the 42 cases in which the bacillary examination of the sputum was negative 29 gave tubercle bacilli in the fæces. Of the 24 cases without sputum, 17 showed bacilli in the stools. Of nine specimens from presumably normal subjects none yielded tubercle bacilli."

Alexander (14), having determined the dose of human fæces tolerated on injection by guinea-pigs, tried in this way to infect guinea-pigs with the fæces of tuberculous patients. In all he injected into guinea-pigs the fæces of 24 tuberculous subjects. 23 guinea-pigs died as a result of the injection of samples of fæces all of which had shown the presence of acid-fast bacilli microscopically. The twenty-fourth sample of fæces showed no tubercle bacilli at the time of the experiment, but acid-fast bacilli were demonstrated in the stools of the patient from whom this sample had been obtained after a purgative had been administered. 129 samples of fæces examined by the same observer from subjects clinically non-tuberculous revealed no tubercle bacilli microscopically.

These results suggest the applicability of this method of recovering tubercle bacilli to the diagnosis of early pulmonary tuberculosis. In conjunction with Dr. Cecil Clarke I have commenced a systematic investigation into the presence of tubercle bacilli in the fæces of clinically tuberculous, doubtfully tuberculous, and non-tuberculous patients at the Brompton Hospital. The investigation is only in an initial stage, but has so far given the following results:—

Investigation as to the Presence of Tubercle Bacilli in the Fæces of 26 Adults.

No.	Sputum.	Fæces.	Disease.
1	T.B. +	T.B. +	C.P.T., active, advanced.
2	T.B. 0 (3*)	T.B. 0	C.P.T., quiescent, early.
3	T.B. 0 (2)	T.B. 0	? tuberculous glands of abdomen.
4	T.B. 0 (3)	T.B. 0	C.P.T., afebrile, quiescent.
5	T.B. 0 (3)	T.B. 0	? C.P.T., afebrile.
6	T.B. 0 (4†)	T.B. 0	C.P.T., 3 lobes, moderate fever.
7	T.B. 0 (3)	T.B. 0	? C.P.T., afebrile.
8	T.B. +	T.B. +	C.P.T., 3 lobes, tuberculous larynx.
9	T.B. +	T.B. +	C.P.T., 4 lobes, afebrile.
10	T.B. +	T.B. +	C.P.T., febrile, advanced.
11	T.B. +	T.B. +	C.P.T., no physical signs of disease, afebrile.
12	T.B. +	T.B. 0	C.P.T., 3 lobes, afebrile.
13	T.B. +	T.B. +	,, 2 ,, ,,
14	T.B. +	T.B. +	C.P.T., early.
15	T.B. +	T.B. +	C.P.T., 3 lobes, febrile.
16	T.B. 0 (3)	T.B. 0	,, 2 ,, afebrile.
17	T.B. +	T.B. +	,, 5 ,, ,,
18	T.B. +	T.B. +	,, 4 ,, ,,
19	T.B. +	T.B. +	,, 3 ,, ,,
20	T.B. +	T.B. +	,, 4 ,, febrile.
21	T.B. +	T.B. +	,, 4 ,, ,,
22	T.B. +	T.B. +	,, 3 ,, ,,
23	T.B. +	T.B. +	,, 2 ,, afebrile.
24	T.B. 0 (6†)	T.B. +	,, 2 ,, ,,
25	T.B. +	T.B. 0	,, 3 ,, ,,
26	T.B. +	T.B. +	,, 3 ,, ,,

* The figure in each instance indicates the number of examinations.
† The antiformin method was employed.

Thus of 26 adults 18 had tubercle bacilli in the sputum; and of these 16 had tubercle bacilli in the fæces; and in 2 cases the examinations of the fæces gave a negative result. 8 of the patients examined had no tubercle bacilli in the sputum, and of these 7 had none in the fæces, whilst in 1 case (C.P.T., 2 lobes, afebrile) tubercle bacilli were found in the fæces. These results suggest that the appearance of tubercle bacilli in the stools of early cases of pulmonary tuberculosis, and in the absence of intestinal tuberculosis, results from the swallowing of sputum secreted in an open tuberculous focus in the lungs.

Dr. M. S. Paterson, the superintendent of the Brompton Sanatorium at Frimley, informs me that many patients have told him that it is practically impossible, however good the intention may be, not to swallow some sputum during the course of the day if this exists in any quantity. The method suggests itself as particularly useful in the investigation of children, who commonly swallow their sputum. Our available material is very limited at the Brompton Hospital, where there are but few children's beds. We have so far examined the fæces of seven children with the following results:—

Investigation as to the Presence of Tubercle Bacilli in the Fæces of 7 Children.

No.	Age.	Sputum.	Fæces.	Provisional diagnosis.
1	9 years.	–	T.B. +	C.P.T., 2 lobes, febrile.
2	7½ ,,	–	T.B. 0	No physical signs of disease.
3	2½ ,,	–	T.B. 0	? C.P.T., afebrile.
4	6 ,,	T.B. +	T.B. 0	C.P.T., 2 lobes, febrile.
5	7 ,,	–	T.B. 0	C.P.T., 3 lobes, febrile.
6	4 ,,	–	T.B. 0	C.P.T., 2 lobes, febrile, v. Pirquet positive.
7	5 ,,	–	T.B. 0	Fibrosis—? C.P.T., v. Pirquet positive.

These results are too few to admit of any conclusion being drawn from them.

If tubercle bacilli are not demonstrable in the sputum, the blood, or the fæces, inferential diagnosis must be relied upon. A number of methods have been advocated for this purpose.

1. *Von Pirquet's cutaneous reaction.*—This consists in scarifying the arm and placing on the scarified spot two drops of the concentrated old tuberculin of Koch. A positive reaction, which consists of the formation of a red papule at the site of scarification, appears at the earliest within three hours, but may not do so before 24 hours have elapsed. In some cases the interval is still more prolonged. This reaction is of value and is eminently specific in the case of young children, but it can only show the presence of latent tuberculosis in adults, for 70 per cent. of the apparently healthy give a positive reaction. Von Pirquet gives the following figures. Of 747 children tested there were :—

Clinically tuberculous, 130, of which 113 (87 per cent.) reacted positively.
Clinically non-tuberculous, 512, of which 104 (20 per cent.) reacted positively.
Doubtfully tuberculous, 115, of which 56 (48·6 per cent.) reacted positively.

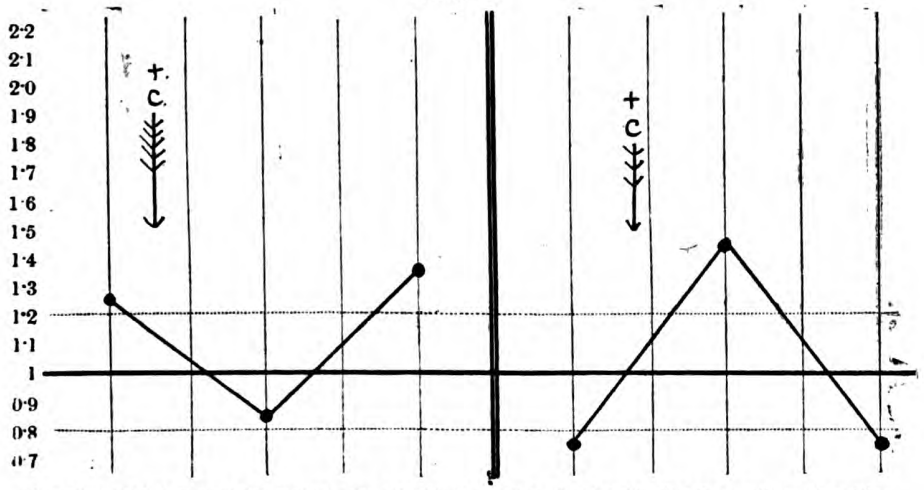
The tuberculous cases which gave a negative reaction were nearly all cachectic.

into the eye. J. Citron (16) gives the following instructive table with reference to the value of this reaction :—

—	Audéoud.	Petit.	Citron.	Eppenstein.	Schenck u. Seiffert.
Tuberculous ...	94·6	94·3	80·7	72·3	78·6
Doubtful ...	81·0	61·6	80·0	40·0	30·0
Normal	8·3	18·4	2·2	9·0	5·8
	Percentage of positive reactions using Calmette's preparation.		Percentage of positive reactions using 1 per cent. old tuberculin.		

Bandelier and Roepke (17) recommend the following as the best method of employing the ophthalmo-reaction for diagnosis: In adults place a drop of 1 per cent. old tuberculin on the conjunctiva of one eye. In the event of the reaction being negative repeat the test with the instillation of a drop of 4 per cent. old tuberculin into the other eye. These authors rightly state that if this method is used the following two facts must be borne in mind: (*a*) A positive reaction only points to the presence of a tuberculous focus in the body without giving information as to the active or inactive character of such a focus. (*b*) A negative reaction does not prove the absence of active tuberculosis.

CHART 1.



Opsonic index before and after applying the ophthalmo-reaction. C + denotes that the reaction was positive.

The older the child the less valuable becomes the reaction from a point of view of diagnosis. Von Pirquet tested apparently healthy children of all ages from one month to 15 years with the following result :—

Age.	Positive reactions.	Age.	Positive reactions.
1–6 months	0 per cent.	4– 6 years	17 per cent.
1–2 years	2 ,,	6–10 ,, ...	35 ,,
2–4 ,, ...	13 ,,	10–15 ,, ...	55 ,,

Yoshikawa (15) gives the following interesting table :—

Clinically Non-tuberculous Cases.

Age.	Number.	Positive reaction		Negative reaction.
		Marked.	Slight.	
Up to 5 years	9	1	—	8
6–10 ,, ...	8	—	—	8
11–15 ,, ...	11	1	3	7
16–20 ,, ...	17	6	5	6
21–30 ,, ...	16	6	8	2
31–40 ,, ...	21	12	8	1
Over 40 ,, ...	30	14	12	4

I have recently been asked to examine the blood for the tuberculo-opsonic index in the case of six medical men who, although apparently healthy, had given a positive cutaneous reaction, self-inflicted!

2. *The ophthalmo-reaction.*—This is best practised by the instillation of a drop of 1 per cent. old tuberculin of Koch

This reaction is absolutely contra-indicated if any eye disease is present, and even should this not be the case the degree of inflammation produced by a markedly positive reaction may be very unpleasant for the patient and not devoid of danger. Again, the reaction should not be employed if a course of tuberculin treatment has been decided on, as such a procedure is likely to light up an inflammation of the eye. Estimations of the opsonic index before and after applying this test show that even the small quantity of tuberculin employed is sufficient to cause a distinct variation in the index (Chart 1). The charts show that this variation is similar to that produced by exercise in the case of the patients at the Brompton Hospital Sanatorium at Frimley (18). Chart 2 refers to a case which came under the observation of the author. It is noticeable that the instillation of a drop of tuberculin in the eye caused a temporary rise of temperature, and that this was accompanied by a negative phase in the blood. The ophthalmo-reaction was markedly positive.

3. *The subcutaneous tuberculin test.*—The preparation used for this test is the old tuberculin of Koch, 1 c.c. of which contains 1000 mg. tuberculin. Probably the best site for inoculation is the skin of the back, close to the vertebral edge of the scapulæ. The test should only be employed on patients without fever and whose general condition is satisfactory. Obvious organic lesions of the vital

organs, recent hæmoptysis, cachexia, and fever are contra-indications. The usually adopted dosage is as follows: Initial dose, 0·0002 c.c. old tuberculin = 1/5th mg.; first increase, 0·001 c.c. old tuberculin = 1 mg.; second increase, 0·005 c.c. old tuberculin = 5 mg.; maximum dose, 0·01 c.c. old tuberculin = 10 mg.

A positive reaction is manifested by (1) a local reaction at the site of inoculation; (2) a febrile reaction; (3) a general reaction evidenced by more or less severe subjective symptoms; and (4) a focal reaction at the site of tuberculous infection (in pulmonary tuberculosis in the lung). No great importance is to be attached to the reaction at the site of inoculation. As regards the febrile reaction, one may now definitely affirm that it is not specific. The generally accepted opinion is that fever is no criterion to distinguish in any way between active and inactive tuberculosis, and merely shows that the inoculated individual is a bearer of tuberculosis.

There seems to be great divergence of opinion as to the interpretation of the febrile reaction following any given dose. Originally Koch stated that a febrile reaction produced by the injection of 10 mg. was specific, and that it was not until a dose of 25 mg. was reached that non-specific intoxication effects were produced. Since then a number of authors have cast doubt on those figures; thus, Stintzing considers 3 mg. the maximal specific dose, Beschorne places it at 5 mg., Roepke at 6 mg., Junker at 5 mg., Neumann at 5 mg., Roth-Schalz at 2·5 mg., Loewenstein and Kaufmann at 0·2 mg., von Balen at 1/100 mg., whilst others find nothing specific in the reaction at all. Latterly Gordon (19) reports on the effect of inoculating a chemically pure tuberculin (endotin), which produces no febrile reaction unless this is secondary to a focal reaction in the diseased tissues. For this reason he recommends giving up the febrile reaction as a diagnostic agent. The general reaction is to be given up for similar reasons. The focal reaction in the lungs is then the specific, and therefore valuable, sign of the tuberculin test. Sahli, Romberg, Penzoldt, Bandelier and Roepke, Meissen, Citron, among others, agree that the reaction of the subcutaneous test is a well-marked focal reaction. So that if this test is employed the lungs must be carefully examined for the appearance of crepitations, &c., and the sputum should be carefully searched for tubercle bacilli.

Consider the case of a patient on whom at some previous date the ophthalmo-reaction or the cutaneous reaction has been performed. A subsequent subcutaneous injection of tuberculin is able to light up the localised inflammation produced by the instillation of a drop of 1 per cent. tuberculin in the eye or a drop of tuberculin placed on a damaged skin, but that does not mean that the eye or the area of skin in question needs treatment. Similarly, even if a focal reaction in the lung is produced by the injection of tuberculin, it only localises the tuberculous process to the lungs. By itself it cannot indicate activity or inactivity in the focus.

It is very important that these limitations of the tuberculin diagnosis should be fully recognised. A positive ophthalmo-reaction, cutaneous tuberculin reaction, or subcutaneous tuberculin test, by itself, cannot distinguish between active and inactive tuberculosis, between tuberculosis which calls for treatment and that which does not. The only rational way of using such tests is to make them but one of the many factors which have to be taken into consideration when deciding on the important question as to the advisability or no of a course of treatment, which usually is lengthy and costly. Highly-trained clinical experience is as necessary to-day as ever it was.

Citron (20) quotes the interesting researches of Franz (21), which are worthy of consideration. This observer took 400 apparently healthy soldiers of a Bosnian regiment in 1901 and gave them all injections of Koch's old tuberculin, with a maximum dose of 0·003 c.c.; 61 per cent. of these men gave a positive reaction. Next year (1902) 100 of these soldiers were again inoculated, with the result that all those who had reacted the previous year reacted again, and in addition 14 others, making 76 per cent. altogether. 323 men were inoculated for the first time in 1902, and 68 per cent. reacted positively. This regiment is recruited from a district in which tuberculosis is rife, so Franz inoculated in a similar way a number of men of a Hungarian regiment which is recruited from a district poor in tuberculous cases, yet 38 per cent. gave a positive reaction. The same author followed out the subsequent history of the men inoculated and publishes the following interesting statistics:—

Regiment.	Date of inoculation.	Number of men inoculated.	Reaction.	During the three years service were discharged through death, ill-health, or excessive leave due to—		
				Tuberculosis.	Suspected tuberculosis.	Other diseases.
Bosnian Infantry Regiment No. 1.	1901	400	+ 245 (61%) − 155 (39%)	17 (8 deaths). 5 (4 „)	22 25	10 7 (1)
Ditto	1902	323	+ 222 (68·8%) − 101 (31·4%)	13 (6 „) 4	28 (1) 13	7 (2) 5
Infantry Regiment No. 60.	1902	279	+ 108 (38·7%) − 171 (61·3%)	4 3 (2 „)	4 5	8 12
Total ...	—	1002	+ 575 − 427	34 (14 deaths) 12 (6 „)	54 (1) 43	25 (2) 24 (1)

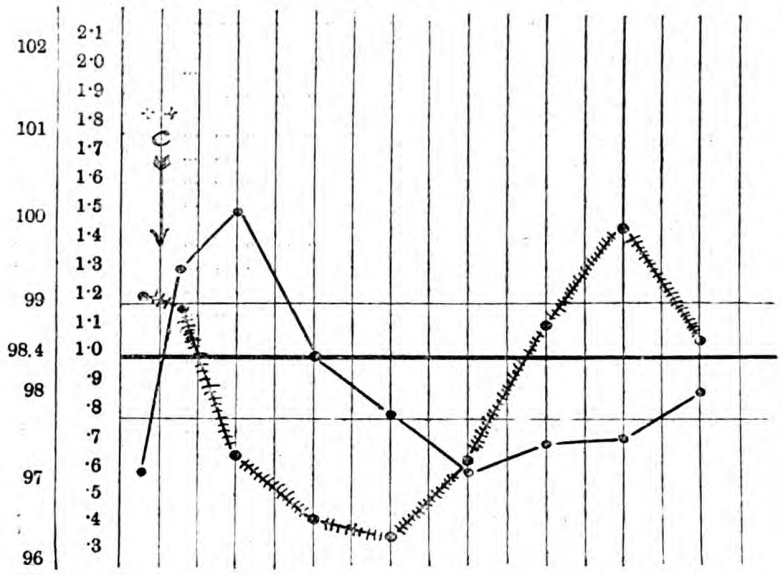
4. *Examinations of the blood serum.*—The other methods of inferential diagnosis consist in the detection of substances in the blood serum which have been elaborated by the infected organism in response to the infection. Just as specific agglutinins for the B. typhosus exist in the serum of patients suffering from typhoid fever, and for the M. melitensis in the serum of patients suffering from Malta fever, so in a certain percentage of cases are found specific agglutinins for the B. tuberculosis in the serum of patients suffering from tuberculosis. Unfortunately, the regularity with which those substances are produced and their quantity in the serum are not sufficiently great to allow of this test being applied to the early diagnosis of pulmonary tuberculosis. Again, the complement-fixing substances, which have assumed so important a rôle in the diagnosis of syphilis by means of Wassermann's test, do not appear sufficiently regularly in the serum of tuberculous patients to admit of their being applied to the diagnosis of this disease. The same applies to the precipitin test, which for a time was advocated by some of the Italian observers. Recently Izar and Ascoli (22) have attempted to apply the meiostagmin reaction to the diagnosis of pulmonary tuberculosis. The reaction consists in the reduction of surface tension which results when a serum containing antibodies and an antigen are mixed in certain proportions. The reduction of surface tension is measured by the stalagmometer of Traube. This test has not been sufficiently investigated in tuberculosis for an opinion to be expressed on its merits.

Under the heading of serum reactions comes the now familiar opsonic test devised by Sir Almroth Wright. The technique for the estimation of the opsonic index has been so often described that it need not be detailed here. It is, however, well to insist upon the advisability of conducting the whole experiment with blood the origin of which at the time in any particular case is unknown. All tests made in this hospital laboratory have been performed in this way so as to eliminate the factor of personal bias. The original work of Wright and his collaborators, and the searching experiments of Bulloch, showed that the indices of apparently healthy individuals remained constantly within certain limits. These limits have been fixed as lying between 1·20 and 0·80 on either side of unity. In the experiments in which I have been engaged for four years, the bloods of two apparently healthy individuals have been included as controls, and unless these have coincided well within the above-mentioned limits, the whole number of indices in that experiment have been discarded. The uniformity of the indices of the same control individuals, estimated almost daily over periods of months, bears testimony to the constancy of the normal limits. The technique is laborious in the extreme, but with due care can be made very accurate.

In the original experiments of Wright—which were amply confirmed by Bulloch—it was found that the characteristic opsonic index of a localised chronic tuberculous infection was low. The charts published in Sir Almroth Wright's

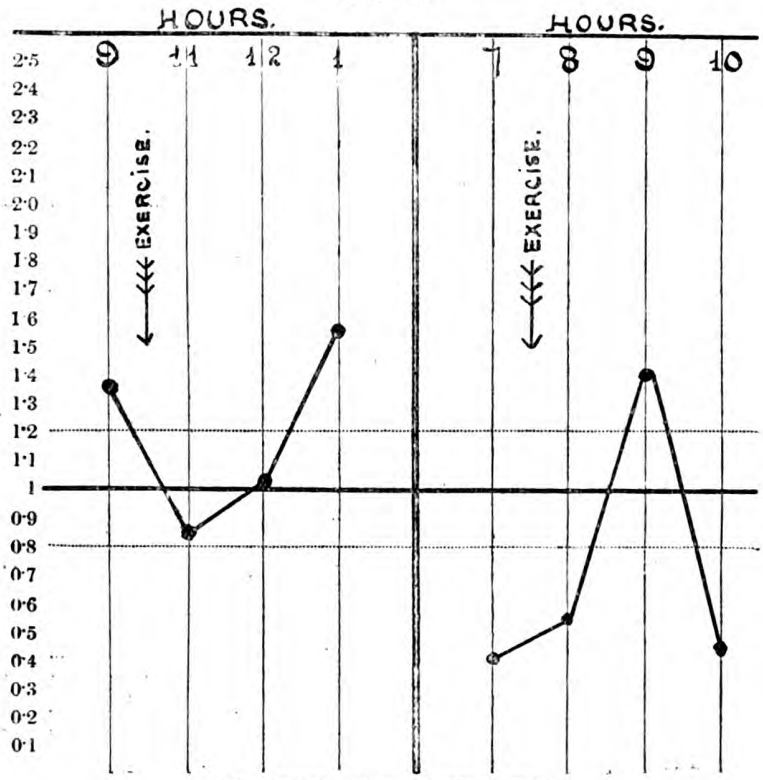
"Studies in Immunisation" (23) illustrating the effects of massage and passive congestion (Bier's hyperæmia) practised on localised tuberculous lesions, show that a rise of the opsonic index usually follows such a procedure. In dealing with a generalised infection such as active, advanced pulmonary tuberculosis, the conditions are different. The opsonic indices no longer remain low, but continuously show fluctuations above and below the normal line. If in cases of active, afebrile pulmonary tuberculosis the amount of movement indulged in by the patient is strictly supervised, it has been shown (24) that the opsonic index can be continuously maintained at a high level. If such variations from the normal occur in tuberculous, as opposed to healthy individuals, the opsonic index should prove of value in the

CHART 2.



Opsonic index (thick broken line) and temperature (thin continuous line) before and after employment of ophthalmo-reaction. C + + denotes that the reaction was marked.

CHART 3.



Opsonic index before and after exercise.

diagnosis of the disease. It would be convenient if one single examination of the opsonic index sufficed to make a diagnosis. Unfortunately this is far from being the case. An analysis of 200 single opsonic indices taken at random, estimated on patients all of them suffering from pulmonary tuberculosis, with tubercle bacilli in their sputum, shows that 99 were outside the limits of 1·20 and 0·80, whilst 101 were within the normal. Unless the opsonic index falls well outside the normal limits no deductions should be drawn from a single observation.

Wolff and Reiter (25) found in 64 cases of tuberculosis that the opsonic index both on single examination and several examinations was low in 62 per cent. and 57 per cent. respectively. The index was raised on single examination in 25 per cent., on numerous examinations in 12 per cent. The index was never within normal limits after numerous examinations. With single examinations it was within normal limits in 8 cases, 12 per cent. Kössler and Neumann (26) found that afebrile early cases of pulmonary tuberculosis had nearly always a low opsonic index, whilst the febrile ones had a raised index.

For purposes of diagnosis at this hospital the blood is examined before and after walking exercise, the latter being in no way controlled by myself. The amount of exercise performed may be insufficient to activate the serum, but in the event of a negative index being returned the physician alone must determine whether a second estimation after increased exercise is advisable. This essential reservation was evidenced by the research at the Frimley Sanatorium. For instance, a patient who showed no fluctuation when performing Grade 2 showed a marked variation when performing the labour of Grade 3.

Reviewing as a whole the positive results of examinations of the opsonic index made with a view to diagnosis, the following four types of variation can be defined: A. An index low before, but rising after exercise. B. An index low before and after exercise (? insufficient exercise). C. An index high before and falling after exercise. D. An index high before and after exercise.

Taking 250 consecutive cases of doubtful pulmonary tuberculosis in which the tuberculo-opsonic index was estimated before and after exercise for diagnostic purposes—

The index remained within normal limits in 91 cases.
The index started low and rose after exercise in 56 cases.
The index started low and remained low after exercise in 41 cases.
The index started high and fell after exercise in 54 cases.
The index started high and remained high after exercise in 8 cases.

So that we have this, to my mind, very striking result:—

Of 159 in which the index varied outside normal limits:

97 started low, and of these { 56 rose as the result of exercise. / 41 remained low after exercise.

62 started high, and of these { 54 fell after exercise. / 8 remained high.

By examining four specimens of blood—the first being taken at rest, the second immediately after exercise, and two more during subsequent rest—it was found that the positive curves conformed in the majority of cases to two types. Those whose index was high in the morning before exercise gave a curve with the apex downwards as the result of exercise, whilst those with an index starting low in the morning made a curve with the apex pointing upwards as the result of exercise. (Chart 3.)

I would suggest that the group A and B point to a localised chronic tuberculous infection, which, however, calls for treatment and must still be regarded as active. It must be remembered that the clinically arrested cases at the Frimley Sanatorium (*loc. cit.*) showed indices which remained within normal limits before and after the hardest labour. The high indices of Group C and D may be regarded as significant of greater activity of disease in that they imply an increase in the elaboration of protective substances in the serum.

It is a matter of extreme difficulty to prove whether or no the doubtful cases giving a positive index are suffering from active tuberculosis. In 100 cases with a positive index and no tubercle bacilli in the sputum special care was taken to find tubercle bacilli at a date subsequent to the blood examination. In 14 cases tubercle bacilli were found, confirming the diagnosis. The following table, which appears in the Medical Report of the Brompton Hospital, 1909, embodies the results of the opsonic index test in 58 cases.

Opsonic Index in 68 Cases.

Clinical diagnosis.	Male.			Females.		
	No. of cases.	Positive.	Negative.	No. of cases.	Positive.	Negative.
C.P.T., no physical signs*	9	6	3	8	7	1
Pleurisy with effusion ...	2	2	—	4	4	—
Fibrosis	—	—	—	2	—	2
Tuberculous bronchial glands	—	—	—	1	1	—
Thickened pleura	1	—	1	—	—	—
Addison's disease	1	—	1	—	—	—
Exophthalmic goitre† ...	—	—	—	1	1	—
Aortic aneurysm and C.P.T.	—	—	—	1	1	—
Lymphadenoma	1	1	—	—	—	—
Mitral stenosis	—	—	—	2	—	2
Mitral regurgitation	1	—	1	1	—	1
Bronchitis	8	—	8	2	—	2
Bronchitis and asthma ...	—	—	—	1	—	1
Bronchitis and emphysema	—	—	—	1	—	1
Bronchiectasis	—	—	—	1	—	1
Dyspepsia	—	—	—	1	—	1
Gastric ulcer	—	—	—	1	—	1
No pulmonary or other disease found	2	—	2	16	—	16
Totals	25	9	16	43	14	29

* This includes cases which gave a history of hæmoptysis, or which had pyrexia or other symptoms suggesting a tuberculous condition. Of the negative cases, one had tubercle bacilli in the sputum, one reacted to tuberculin, one gave a positive ophthalmic reaction, and the fourth von Pirquet's test.

† Physical signs of quiescent pulmonary tuberculosis present.

The following list comprises 100 cases, selected by the physicians, in which recourse to the tuberculo-opsonic index was considered necessary owing to ambiguity of the clinical evidence. It will serve as an illustration of the possible application of this test to some of the problems of pulmonary tuberculosis. The letters A, B, C, and D, after positive reactions, refer to the four types of variation in the opsonic index referred to above.

Physician's Note.	*Opsonic Index Test.*
1. No abnormal physical signs. No tubercle bacilli in sputum	Positive (C).
2. A doubtful tuberculous case. Slight impairment at right apex; no adventitious sounds; no sputum	,, (A).
3. Early physical signs at left apex. No tubercle bacilli in sputum	Negative.
4. No tubercle bacilli found. History of pleurisy ...	,,
5. ? Pulmonary tuberculosis; physical signs most indefinite	Positive (A)
6. Definite signs at left apex (early). No tubercle bacilli (three examinations). Opsonic indices normal	Negative.
7. Very slight signs. Calmette reaction +. No tubercle bacilli	,,
8. No tubercle bacilli (three times). Calmette reaction negative once	Positive (A).
9. Pleural thickening and induration of lung following pneumonia. Probably pulmonary tuberculosis. Tubercle bacilli present when out-patient long time ago	Negative.
10. No tubercle bacilli found. Physical signs indefinite. History of hæmoptysis	,,
11. No tubercle bacilli. Apical consolidation	,,
12. Family history of tuberculosis; history of hæmoptysis. No sputum	,,
13. No sputum. Indefinite signs; normal temperature. Sent in as early tubercle	,,
14. Doubtful physical signs	Positive (B).
15. Hæmoptysis five months ago. No physical signs of disease	Negative.
16. Physical signs, but no tubercle bacilli	Positive (D).
17. No adventitious sounds. No sputum; hæmoptysis	,, (C).
18. Doubtful signs of consolidation at left apex. No sputum	Negative.
19. No tubercle bacilli present. Chronic bronchitis with pigeon breast	,,
20. Bronchiectasis (apical cavity). No tubercle bacilli in sputum	,,
21. No sputum. Very slight impairment of resonance at right apex	,,

	Physician's Note.	*Opsonic Index Test.*
22.	Impaired resonance at left apex. No adventitious sounds	Positive (A).
23.	A contact case with doubtful physical signs	,, (1).
24.	Case of chronic pneumonia (apical). No tubercle bacilli	Negative.
25.	Quiescent disease, both apices. No sputum...	,,
26.	Quiescent disease, both apices. No sputum	,,
27.	No tubercle bacilli found on many examinations. History of hæmoptysis 16 years ago	,,
28.	No tubercle bacilli found, but clinically C.P.T.	Positive (A).
29.	Cutaneous (von Pirquet) reaction negative. Age 27	Negative.
30.	No tubercle bacilli. Signs indefinite	Positive (B).
31.	No tubercle bacilli found, but clinically C.P.T.	,, (A).
32.	Doubtful impairment of resonance over right clavicle; no adventitious sounds; no tubercle bacilli	Negative.
33.	Slight dulness at left apex; heart drawn up. No adventitious sounds. No sputum...	Positive (C).
34.	No physical signs. Doubtful case	Negative.
35.	Old pleurisy	Positive (A).
36.	No sputum available. Physical signs at left base	Negative.
37.	No sputum; many signs	Positive (C).
38.	Signs, but no tubercle bacilli	,, (1).
39.	Thickened pleura—? tuberculous. No sputum	,, (A).
40.	No tubercle bacilli found. History of hæmoptysis	,, (C).
41.	No sputum. No active physical signs	Negative.
42.	Sibilant signs, chiefly at apices	,,
43.	Early signs of consolidation, right upper lobe and middle lobe. No tubercle bacilli	Positive (A).
44.	Apparently tuberculosis of larynx, but no tubercle bacilli. No von Pirquet reaction; Calmette reaction doubtful	,, (C).
45.	Case of persistently low temperature with history of hæmoptysis 14 months ago	,, (B).
46.	Physical signs very doubtful, but probably pulmonary tuberculosis	,, (D).
47.	Case of morbus cordis with signs in lungs. No tubercle bacilli	,, (1).
48.	No tubercle bacilli. Negative Calmette reaction. No definite signs, but history of chronic cough and blood-stained expectoration	Negative.
49.	No sputum. Calmette reaction negative. Signs indefinite	,,
50.	No sputum. Negative Calmette reaction. No definite signs. Treated for "consumption" for five years	,,
51.	Physical signs present, but tubercle bacilli absent	Positive (C).
52.	No tubercle bacilli. Doubtful signs	Negative.
53.	Signs very slight. Has nursed mother for two years who died from pulmonary tuberculosis	Positive (B).
54.	No sputum. Slight impairment of resonance at right apex, with prolonged expiration	,, (B).
55.	Chest apparently healthy, but impairment at both apices and crepitations noted in out-patient department six months ago	Negative.
56.	No tubercle bacilli (three times). Very slight physical signs	,,
57.	Signs of apex consolidation; no adventitious sounds. No tubercle bacilli (three examinations)	Positive (A).
58.	Probably pulmonary tuberculosis. Slight signs. No tubercle bacilli (very little sputum)	,, (C).
59.	Asthma; very slightly impaired note at right apex. ? pulmonary tuberculosis. No sputum	Negative.
60.	Probably bronchiectasis, but ? pulmonary tuberculosis. No tubercle bacilli in sputum	,,
61.	No sputum. Calmette test negative (twice), but opsonic indices already done were positive	Positive (A). Negative.
62.	No physical signs	Positive (C).
63.	Case of mitral stenosis tested with Calmette reaction as control; distinct reaction second time of testing	,, (C).
64.	Probably tubercle. No tubercle bacilli found yet; Calmette test twice negative	,, (C).
65.	Fairly obvious signs at apices. No tubercle bacilli (three times)	,, (D).
66.	Sent in as tuberculous. No physical signs except sibilant râles, and expiration and vocal resonance a little exaggerated at right apex	Negative.
67.	? Basal phthisis ? Bronchiectasis	Positive (1).
68.	Acute pulmonary tuberculosis	,, (C).
69.	No tubercle bacilli. Slight physical signs	,, (D).
70.	Chronic bronchial catarrh, with ? pulmonary tuberculosis. No tubercle bacilli found, but history of slight hæmoptysis	,, (A).
71.	Physical signs, but no tubercle bacilli found	,, (B).
72.	History of hæmoptysis, but tubercle bacilli absent both this year and last. Normal temperature throughout	Negative.
73.	Basic crepitations (both bases). No tubercle bacilli	Positive (C).
74.	Doubtful physical signs of disease. No tubercle bacilli. Previous opsonic test positive	Negative.
75.	No tubercle bacilli found. No definite signs. Family history of tuberculosis	,,
76.	No tubercle bacilli found. Ophthalmo-reaction positive. Physical signs negative	Negative.
77.	No tubercle bacilli found. Symptoms of bronchial asthma, but coloured sputum. Family history of tuberculosis	,,
78.	Family history of tuberculosis. No definite signs. No sputum	Negative.
79.	Signs of old consolidation at both apices; no adventitious sounds	,,
80.	No tubercle bacilli. Physical signs present	Positive (A).
81.	? If any physical signs of disease (doubtful at right apex)	,, (C).
82.	Emphysema with old disease, probably both apices	,, (A).
83.	Slight hæmoptysis seven months ago. No adventitious sounds. No tubercle bacilli found	Negative.
84.	Quiescent pulmonary tuberculosis. No sputum...	Positive (A).
85.	Probably caries of the bodies of third to seventh dorsal vertebræ	,, (A).
86.	The opsonic test is negative, but we should expect positive	,, (1)
87.	Probably caseous pneumonia	,, (A).
88.	Tuberculous pleurisy	,, (*)
89.	Consolidation of right apex. No râles. No sputum. Pneumonia, right side, ten weeks ago, but right lung is contracted	,, (1)
90.	Slight physical signs of impairment of both apices and left base without adventitious sounds	Negative.
91.	Quiescent disease of both apices	,,
92.	? Arrested tubercle	Positive (B).
93.	? Arrest (how far?)	Negative.
94.	To decide whether patient's tubercle is arrested	Positive (C).
95.	How near arrest?	,, (C).
96.	? Arrest	Negative.
97.	Doubtful case. Hæmoptysis *v.* hæmatemesis	,,
98.	Old pulmonary tuberculosis. Quiescent. ? arrested	,,
99.	Broncho-pneumonia after measles. ? pulmonary tuberculosis. ? bronchiectasis	Positive (C).
100.	? active tubercle	,, (C).
		,, (D).

(*) Swinging index whilst in bed. (1) A single estimation.

Summary.

1. In the diagnosis of early pulmonary tuberculosis the recent methods of concentration (antiformin) should always be employed for the exposition of tubercle bacilli in the sputum and fæces.

2. The difficulty of interpreting the results of the various tuberculin tests seriously limits their value in the diagnosis of active pulmonary tuberculosis.

3. A positive opsonic index test is of undoubted value in the diagnosis of active pulmonary tuberculosis. A negative opsonic index test must be taken with reserve. The interpretation of the result rests with the clinician, who can take into consideration all the additional factors in the diagnosis of the case.

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Brompton Hospital for Consumption.

DURHAM UNIVERSITY MEDICAL GRADUATES' ASSOCIATION.

—The autumn dinner of the southern branch of the Durham University Medical Graduates' Association was held on Dec. 2nd at the Criterion Restaurant, when many members and guests were present. Dr. J. Inglis Parsons, vice-president of the association, occupied the chair. The toast of the "University and Association," proposed by Sir W. H. Allchin, was acknowledged by Dr. William Rawes, and that of the visitors by Mr. Charters J. Symonds. Dr. W. Davis made a delightful speech in proposing the vice-president's health. Excellent music was provided by Mr. John W. Ivimey.

NOTE ON TUBERCULOUS MENINGITIS,

WITH ESPECIAL REFERENCE TO THE INVASION SYMPTOMS WHEN THE DISEASE OCCURS IN ADULTS.

BY W. B. WARRINGTON, M.D. LOND., F.R.C.P. LOND.,

PHYSICIAN TO THE NORTHERN HOSPITAL AND TO THE EYE AND EAR INFIRMARY, LIVERPOOL; LECTURER IN CLINICAL MEDICINE IN THE UNIVERSITY.

TUBERCULAR meningitis in adults is met with chiefly as a terminal event in chronic pulmonary phthisis. Its frequency in this condition has been variously estimated. Dr. S. West[1] says it accounts for 8 per cent. of deaths, but the figures he gives from an analysis of his own fatal cases—viz., 1·5 per cent. when this lesion was present alone with the disease in the lungs, or 2·5 per cent. if cases of generalised tuberculosis are included—agree better with what appears to be the general experience. Thus, of 531 fatal cases at the Brompton Hospital, Fowler and Godlee[2] state that tubercular meningitis was the cause of death in 3·3 per cent.

Several writers mention that when tubercular meningitis occurs in adults the clinical picture may present unexpected features, misleading if the possibility of this condition is not remembered. Professor Oppenheim,[3] in describing the early delirium and mental confusion which soon occur, points out that grown-up patients may go about in this stage and appear as if afflicted mentally; sometimes they are in a dreamy state, sometimes excited and agitated, so much so as to closely resemble persons under the influence of alcohol.

Sir William Gowers[4] says that in this stage young women may show hysteroid symptoms, and in the "System of Medicine" of Professor Osler and Professor McCrae Dr. Lawrason Brown[5] writes: "In certain instances there has been great difficulty in making the diagnosis from hysteria, early mental disease, or delirium tremens." A further point to be noticed is that this complication has often occurred in those in whom the pulmonary disease appeared to be making satisfactory progress. This has been alluded to by Sir R. Douglas Powell[6] and Sherman G. Bonney.[7]

During the last few years I have met with several cases of this disease in adults in which anomalous symptoms of this kind were observed, and, followed as they were by somewhat sudden coma and death, formed a striking clinical picture. I related these cases at the meeting of the Association of British Physicians held in Liverpool this year, and the short discussion which followed leads me to hope they are sufficiently interesting to be placed on record.

CASE 1.—The patient, a man aged 33 years, was fairly well developed, and without any history of important antecedent illnesses. He kept a small grocer's shop in the north end of Liverpool, where the recent religious riots occurred; the disturbance appears to have greatly upset him, and it was to this that he attributed the vague pains in the head, general weakness, insomnia, and dyspeptic symptoms with some vomiting for which a month before his death he first consulted a medical man. He continued, however, to attend to his business for over a fortnight. To relieve the sleeplessness he was given on the night of Dec. 5th a largish dose of chloral and bromide. On awakening in the morning he drank a cup of tea, said a few words, and settled down to sleep. Consciousness was never recovered.

On Dec. 7th I first saw the patient. The temperature was slightly raised; pulse of 68, and respirations 24 a minute. There were no signs of paralysis; ophthalmoscopic examination was normal. The viscera appeared healthy. I found a slight degree of Kernig's sign, and some little rigidity of the neck. Examination of the cerebro-spinal fluid showed that this was under considerable pressure; it was quite clear, and contained a large number of lymphocytes. Death took place on the 11th, without the development of any further symptoms. The temperature ranged from 100° to 101° F., the pulse and respirations gradually increasing in frequency.

Permission for a post-mortem examination limited to the head was obtained. The typical appearances of tuberculous meningitis were found, the vessels of the base of the brain and along the Sylvian fissure being studded with innumerable tubercles.

CASE 2.—The patient, a man aged 38 years, was admitted to hospital on June 9th, 1905. He had been out of work for some months, had lost weight, and suffered from mental depression. The symptoms of his fatal illness began five weeks before admission with feeling of numbness in the right shoulder; this sensation spread down the arm and then invaded the lower limb. During the next month the sensations recurred with great frequency, and at last were accompanied by temporary loss of power. On admission to hospital the patient looked ill, but was quite rational and able to walk. The temperature was slightly raised to 100° or 101° F., the pulse was 94, and respirations 28. No disease was found in the thoracic or abdominal viscera, and ophthalmoscopic examination showed a healthy fundus. Headache and vomiting were absent, but percussion of the skull was somewhat painful. There were no paralyses or alterations in the reflexes. The patient remained in this condition for ten days, when quite suddenly he became mildly delirious and passed into a state of semi-coma. A right hemiplegia was now present with the extensor plantar response. By lumbar puncture a fluid was obtained containing an excess of albumin and a large number of cells both of the polynuclear form and lymphocytes. He never recovered consciousness, and at the end of a week the temperature rapidly ran up and death occurred.

Unfortunately here again the head only could be examined. The brain showed the characteristic appearance of tuberculous meningitis, and this was confirmed by microscopical examination.

CASE 3.—The patient, a woman, aged 45 years, had suffered from phthisis for ten years, but had been in fair general health, able to do her household and other work. There was no cough or other symptom of the disease. Examination of the lung showed the presence of a large dry cavity. About a month before her fatal illness throbbing sensations in the head and vague pains began to trouble her; these symptoms disappeared for a time, but afterwards returned in greater severity. At the end of a fortnight the patient was compelled to go to bed and became somewhat apathetic. The temperature was a little raised, varying from 99° to 101° F. As the drowsiness increased the pain disappeared. When seen by me the patient was very weak and drowsy, but could be roused to answer questions. There was slight optic neuritis, but no other signs of nervous disease. Kernig's sign and rigidity of the neck muscles were absent. The cerebro-spinal fluid was clear, highly albuminous, and contained a large excess of lymphocytes.

CASE 4.—The patient, a man, aged 33 years, was under the care of Dr. John Owen, who has kindly given me the notes. The man was a labourer, and previous to this illness appears to have been in good health; he said that he had never lost a day's work. About one month before his death his fellow-workmen are said to have noticed that he was quieter than usual, but only a fortnight before the end were there any definite symptoms—viz., headache and vomiting. He complained to his friends of weakness and was seen to tremble and stagger. It was, however, not until three days before his death that he was compelled to remain in bed and send for a medical man. He was then found to be in a stuporous condition. On the next day he was seen by Dr. Owen, who found no physical signs of disease, with the exception of an extensor plantar reflex on one side. There was no Kernig's sign, no head retraction, nuchal rigidity, or optic neuritis. By lumbar puncture a fluid was obtained which showed the usual characteristic, excess of lymphocytes, and also the tubercle bacilli.

CASE 5.—The patient, a woman, aged 26 years, had suffered from headache for about a year, but had continued her household duties and other work. On April 22nd, 1910, she was seen by Dr. E. I. Claxton, who found her excited and hysterical in manner. She had vomited several times and complained of pains in the back and head. The pulse and temperature were normal. Dr. Claxton carefully examined the nervous system, but found no objective signs of disease. The vomiting ceased, but the mental condition remained one of great excitement, the patient raving, moaning, and tossing about. On April 30th paralysis of the left abducens was first observed, and the diagnosis of organic disease, hitherto uncertain, being now obvious, she was sent by Dr. Claxton into hospital, where she was admitted in a condition of exhaustion and incoherent delirium. The patient was obviously very ill; the skin dry, the tongue furred, cracked, and dry, and the breath foul; the temperature was 100° F., and the pulse 76. Paralysis of the left external rectus muscle was present and a slight Kernig's sign, but no other physical signs. The diagnosis of meningitis was made, probably tuberculous, and this was confirmed by lumbar puncture, the fluid containing a large number of lymphocytes and tubercle bacilli. The patient lived nine days, the delirium being gradually replaced by drowsiness and coma.

The post-mortem examination showed obsolete tuberculosis of the apex of the left lung, caseating bronchial glands, a caseous solitary tubercle in the vermis cerebelli, and generalised tuberculous meningitis of the usual distribution.

Of these five cases all were engaged in their usual occupation before the fatal illness, and previous disease was known to exist in only one—viz., the woman with chronic phthisis. In all there was an incubation period of three to four weeks, characterised by slight physical and mental symptoms of depression, strangeness in manner, or hysteroid attacks; then a sudden change, a rapid onset of coma terminating within a week in death, the terminal stage also being, with the exception of Case 5, unaccompanied by obtrusive physical signs.

In a recent paper J. Jaquet,[8] writing on this subject, says that of 204 fatal cases of chronic phthisis 16 died from tuberculous meningitis as proved by necropsy, and of these cases seven were between the ages of 41 to 68. Clinically, several of these cases presented the same startling development of symptoms, and most had been about their usual work until the onset. Two patients were brought into the hospital unconscious, in which state they had been found in the streets; one was seen to stagger about as if drunk; another, who complained of headache, was morose and silent; and another, taken ill whilst in the hospital, showed as the first symptoms restlessness and attempts to get out of bed. This invasion stage lasted a week or more, followed by the terminal stage of coma, the average duration of which was ten days. There were

[1] Text-book on Diseases of the Lungs.
[2] Text-book on Diseases of the Lungs.
[3] Lehrbuch der Nervenkrankheiten, p. 890, vol. ii.
[4] Manual of Nervous Diseases, p. 343, vol. ii.
[5] P. 310, vol. iii.
[6] Diseases of the Lungs and Pleura, 1886.
[7] Pulmonary Tuberculosis, 1908.
[8] Deutsche Medizinische Wochenschrift, March 10th, 1910, p. 449.

throughout very few physical signs and no definite paralyses. Vomiting was absent in all, and headache only a prominent symptom in two instances.

Diagnosis.—When a patient known to have chronic phthisis begins to show anomalous mental symptoms, invasion of the meninges may be suspected, and this suspicion increases if headache and other symptoms, especially the appearance of the Babinski reflex or a difference in the knee-jerks, are present. When, however, previous disease is not known and evidence of disease elsewhere cannot be found the opening symptoms are very difficult to correctly interpret. This must have been so especially in my first two cases. If the symptoms are sufficiently serious it appears that the examination of the cerebro-spinal fluid will usually clear up the diagnosis.

My object has been to call attention to the manner in which tuberculous meningitis sometimes develops in adults. I should also like to take this opportunity of mentioning two other cases of this disease of some interest.

1. An instance of recovery. Dr. Alfred E. Martin[9] has fully reviewed what is known of the remissions and recovery in tuberculous meningitis.

CASE 6.—My case is that of a boy, aged 11 (seen a year ago under the care of Dr. Bennett Jones), who presented the usual characteristic manifestations and double optic neuritis. The cerebro-spinal fluid contained many cells, both polynuclear and lymphocytes; tubercle bacilli were found on a number of occasions. After a prolonged illness the patient gradually recovered. His general health is now excellent; he plays games and does the ordinary work of a school-boy. There is, however, a slight right monoplegia of the arm.

2. An instance of meningo-encephalitis tuberculosa circumscripta, the meningitis *en plaque* of the French writers:—

CASE 7.—The patient, a man aged 35 years, was admitted to hospital on March 10th, 1909. He was extremely ill and greatly emaciated, somewhat cyanosed, and suffering from dyspnœa. He appears to have been at his work until three weeks before this illness; ten days before admission he was seized with feverish symptoms and pains in the back and abdomen. On the next day the right hand was weak, and on the day following he was unable to speak. The loss was permanent; the only word he was known to say was "Sammy," the name of his child. A few days later several convulsions occurred. Almost up to the time of his admission, however, he appears to have been able to stand. On examination we found that the patient was conscious and responded to pantomimic suggestion. The whole of the right upper limb was completely paralysed, and there was considerable paresis of the right lower face. He was able to move both lower limbs. The knee-jerks were present and the plantar responses were of the flexor type. Examination of the lungs gave evidence of general bronchitic signs. The patient died in a few days. The diagnosis was considered to be acute general tuberculosis.

The post-mortem examination disclosed miliary tuberculosis of the lungs and old lesions at both apices. On the surface of the left hemisphere of the brain two plaques of disease were seen at the sites indicated in the figure. The one in the temporo-sphenoid convolution was hard and opaque white; the larger one in the angular gyrus was partly dull red, the colour evidently due to subjacent hæmorrhage, and

Meningo-encephalitis tuberculosa circumscripta.

partly covered with pus. There was no generalised meningitis or tubercle along with the course of the vessels.

Horizontal sections were cut through the brain at the level of the points *a*, *b*, *c*, *d*. Those through *a* and *b* showed that the discolouration was due to the presence immediately between the cortex of two plum-coloured masses of hæmorrhagic brain tissue, and that the tissue beneath these was necrotic. Softening without hæmorrhage was found in the sections at the levels *c* and *d*. The cerebro-spinal fluid was somewhat turbid.

[9] Brain, vol. xxxii., p. 209.

This condition is not very common. An excellent description, with references to the findings of other writers, is given by Oppenheim in his Lehrbuch,[10] and it is noteworthy that six cases recovered in which he diagnosed this condition.

The hæmorrhage is doubtless due to tuberculous vascular disease, and it is a point of some practical interest that the fluid obtained by lumbar puncture in tuberculous meningitis is sometimes coloured with blood. I have on the post-mortem table found in several instances considerable meningeal hæmorrhage.

Liverpool.

THE ETIOLOGY OF BERI-BERI.

BY HENRY FRASER, M.D. ABERD.,

DIRECTOR, INSTITUTE FOR MEDICAL RESEARCH, KUALA LUMPUR, FEDERATED MALAY STATES;

AND

A. T. STANTON, M.D. TOR.,

BACTERIOLOGIST, INSTITUTE FOR MEDICAL RESEARCH, KUALA LUMPUR.

IN a former paper published in THE LANCET[1] it was shown that the occurrence of beri-beri was intimately associated with the consumption of a diet of which white rice was the staple. This view of the origin of the disease, first stated in concise form in this country by Braddon,[2] had its beginnings in the work of the Dutch physicians of the last century, and has since been amplified and confirmed by the labours of Van Dieren, Dubruel, Fletcher, and others, and more especially by the valuable observations and researches of Braddon.

Further experimentation was undertaken by us to determine the mode of operation by which white rice was able to produce this result. Braddon believed that the cause of beri-beri was a poison developed in stale white rice by the action of some organism, while Dubruel held that a living germ was ingested with white rice, and that this germ, multiplying in the body, produced the disease. The observations made by us led to the conclusion that beri-beri is a disorder of metabolism, and that white (polished) rice, as milled by machinery on a large scale, commonly makes default in respect of some substance or substances essential for the maintenance of the normal metabolism of nerve tissues. It was further shown that in the original grain these substances are contained in the cells of the subpericarpal layers which are removed in the process of polishing. As measures for the prevention of the disease it was recommended that, for the ordinary white rice in the diet, there should be substituted a rice in which the polishing process had been omitted or carried out to a minimal extent. These conclusions, first published in December, 1909, received the endorsement of the Far Eastern Association of Tropical Medicine at its meeting in Manila in March, 1910,[3] and practical measures, based upon them, are now being taken by the Governments of those countries where beri-beri most abounds.

During the past year attention has been directed towards the determination of the nature of the substances present in the subpericarpal layers of the original grain which are removed in the milling process and which, it would appear, are of such high physiological importance in maintaining normal nutrition when a diet largely composed of white polished rice is consumed. This research has not yet been completed, but thus far it has confirmed the accuracy of the work already recorded, and by a process of exclusion the problem has become appreciably less complex.

Introductory.

For the purpose of testing the value of the various materials, fowls weighing 1200 grammes or thereabouts were employed. Each, as in previous experiments, was confined in a separate cage and, save in one instance, groups of 12 were used. The fowls received rice twice daily at 10 A.M. and 3 P.M., and when receiving polishings or materials prepared from polishings, the substance in question

[10] Vol. ii., p. 896.

[1] H. Fraser and A. T. Stanton: An Inquiry Concerning the Etiology of Beri-beri, THE LANCET, Feb. 13th, 1909, p. 451.

[2] W. L. Braddon: The Etiology of Beri-beri, Federated Malay States Medical Archives, 1901.

[3] Transactions of the Far Eastern Association of Tropical Medicine, Philippine Journal of Science, 1910, vol. v., No. 1.

was given as an emulsion, by means of a stomach-tube, half an hour after the rice had been given. Every fowl was weighed once a week at 12 noon.

As a result of a series of former observations it had been determined that fowls weighing from 1200–1400 grammes required about 60 grammes of unpolished rice daily, and, if fed on 60 grammes polished rice, they required in addition 5 grammes of sifted polishings for the maintenance of weight and health. In a previous experiment, where products derived from different lots of padi were employed, 3·5 grammes of the polishings were shown to be sufficient with the white rice then in use. In the present experiment all the products employed—unpolished rice, polished rice, polishings, &c.—were derived from the same lot of padi. For purposes of comparison the following results of analyses are given:—

—	Protein.	Fats.	Carbo-hydrates.	Ash.	Moisture.	P_2O_5
	%	%	%	%	%	%
Polishings (sifted)	13·7	14·16	52·77	7·54	11·83	4·1
Unpolished rice ...	9·0	1·65	75·52	1·08	12·75	0·56
Polished rice... ...	8·6	0·22	76·23	0·6	14·35	0·26

When the composition of these articles is calculated on dried materials the differences are rendered more striking and accurate, and when in a similar manner the composition of a diet made up of 60 grammes of polished rice and 5 grammes of polishings is calculated it will be seen how closely such a diet approximates to one of unpolished rice.

Calculated on Dried Materials.

—	Protein.	Fats.	Carbo-hydrates.	Ash.	P_2O_5
	%	%	%	%	%
Polishings (sifted)	15·5	16·0	59·8	8·5	4·65
Unpolished rice	10·3	1·89	86·5	1·23	0·64
Polished rice	10·0	0·25	89·0	0·7	0·3
Ration 60 grammes polished rice *plus* 5 grammes polishings contains per cent.	10·4	1·5	86·6	1·31	0·64

Sifted polishings were invariably employed because polishings as received from the millers contain a considerable mixture of husk and broken rice.

Polishings when fresh are neutral in reaction, but on keeping they become acid. This change does not impair their efficiency, however, and polishings which have been stored with ordinary care for months are quite as valuable as the fresh materials. The ordinary process of cooking does not impair the value of polishings. For these reasons it is considered that the essential substance or substances are not unstable.

1. *Fat.*—Fat in the rice-grain is mostly confined to the subpericarpal layers. Unpolished rice is therefore richer in fat than polished rice, and polishings are very rich in fat. To determine the value of this fat a quantity of sifted polishings was packed in a percolator and percolated with petroleum ether. In this way the amount of fat in the polishings was reduced from 14·16 to 0·6 per cent. The fat-free polishings were dried by exposure to the sun until free from petroleum ether.

Twelve fowls were fed on polished rice and received in addition daily 4·5 grammes of fat-free polishings, being the approximate equivalent of 5 grammes of sifted polishings. The fowls remained healthy and maintained their weight just as had been the case when fowls received polished rice and sifted polishings. The non-importance of fat was therefore decided and its exclusion from the number of possibilities was of the utmost value since the fat had hitherto complicated our experiments.

2. *Phytin.*—Estimations of the percentage of phosphorus pentoxide in rices had consistently shown their value as indicators of the liability or otherwise of a given rice to produce polyneuritis. Thus the higher the percentage of phosphorus pentoxide contained in a rice, the less liable was that rice to produce polyneuritis when fowls were fed on it.

The unpolished rice, which we employed, contained 0·56 per cent. phosphorus pentoxide and did not cause polyneuritis. The polished rice contained 0·26 per cent. phosphorus pentoxide and invariably caused polyneuritis, while washed polished rice containing 0·22 per cent. phosphorus pentoxide was more harmful than the unwashed polished rice. This suggested the probability that the essential substance was one containing phosphorus. It was first stated by Dr. Hans Aron,[4] Bureau of Science, Manila, that the substance in question is phytin, the calcium magnesium salt of an organic acid containing phosphorus. We estimated that the unpolished rice in use contained 1·07 per cent. of phytin, that the polished rice contained only a trace of that salt, and that the polished rice after washing and drying contained none. The sifted polishings contain 8·8 per cent. of phytin.

In testing the importance or otherwise of phytin we did not employ the commercial product because of our ignorance of its source and method of preparation, but prepared it ourselves in the following manner. Sifted polishings were mixed with 0·3 per cent. hydrochloric acid in the proportion of 300 grammes of the former to 2000 cubic centimetres of the latter, the mixture was stirred throughout the day, and on the following morning was filtered through a Buchner's filter. The clear yellowish filtrate was mixed with one and a half times its volume of 95 per cent. alcohol, which produced a white precipitate of phytin; the mixture was allowed to stand for a few days. The precipitate was collected, washed with strong alcohol to free it from acid, and dried in a vacuum desiccator. A friable cake of phytin was obtained readily reducible to a white powder, soluble in water, yielding an opalescent solution with an acid reaction and giving, on addition of sodium carbonate, a white flocculent precipitate. The powder contained 34 per cent. of phosphorus pentoxide.

A fowl consuming 60 grammes of unpolished rice daily would be receiving 0·66 gramme of phytin, and a fowl receiving the same amount of washed, polished, and therefore phytin-free, rice would require to have in addition that amount of phytin daily in order to bring the value of this diet, in respect of phytin, up to that of an unpolished rice diet.

Twelve fowls received washed, polished rice, and in addition phytin, which was given in the following manner: 9 grammes of phytin were dissolved in distilled water, the solution neutralised with sodium carbonate, and the volume made up to 360 cubic centimetres. Each fowl received 15 cubic centimetres of this suspension at 10.30 A.M. and 3.30 P.M. daily, an amount of phytin slightly in excess of the estimated quantity. All the fowls lost weight and cases of polyneuritis occurred just as if the fowls had received washed, polished rice only.

In the next experiment 12 fowls received the phytin-suspension intimately mixed with the washed, polished rice, but the results were the same, and the importance of phytin was by these experiments definitely disproved.

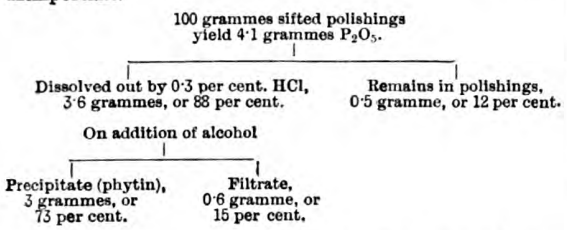
3. *Substances soluble in 0·3 per cent. hydrochloric acid.*—Experiments were next carried out to determine if, when polishings are macerated in 0·3 per cent. hydrochloric acid, the essential substance or substances pass into solution. This solvent was chosen as it had been employed for the extraction of phytin. Polishings in quantities of 180 grammes, being the amount required by 12 fowls in three days, were mixed with 1000 cubic centimetres of 0·3 per cent. hydrochloric acid, stirred during the day, and the following morning filtered through a Buchner's filter. 100 cubic centimetres of 0·3 per cent. hydrochloric acid were used to wash out the vessels. When fluid could no longer be extracted from the mass it was mixed with 600 cubic centimetres of 0·3 per cent. hydrochloric acid, stirred during two hours, and thereafter filtered as before. The extracted polishings were mixed with distilled water, nearly neutralised with sodium carbonate, and the volume was adjusted to 1080 cubic centimetres. 30 cubic centimetres of this emulsion contained 5 grammes of polishings, less the materials dissolved out by the acidulated water. The combined

[4] Hans Aron: Philippine Journal of Science, 1910, vol. i., p. 97.

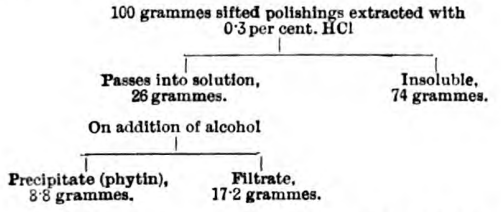
filtrates obtained from 180 grammes of polishings were nearly neutralised with sodium carbonate and concentrated at a low temperature to a volume of 1080 cubic centimetres. 30 cubic centimetres of this suspension contained the substances dissolved out by acidulated water from 5 grammes of polishings.

Twelve fowls were fed on washed, polished rice, each receiving daily 30 cubic centimetres of the emulsion of extracted polishings; cases of polyneuritis occurred.

Twelve fowls were fed on washed, polished rice, each receiving in addition 30 cubic centimetres of the suspension of dissolved substances; cases of polyneuritis did not occur. Therefore the essential material was removed and uninjured by the process of extraction and subsequent treatment. By this process of extraction 88 per cent. of the phosphorus pentoxide contained in polishings is dissolved out. Of this amount, 73 per cent. is represented by the phytin in the solution, so that, together with the 12 per cent. remaining in the polishings after extraction, 85 per cent. of the phosphorus pentoxide contained in polishings is shown to be unimportant.



4. *Alcohol (proof spirit) soluble fraction of the substances originally soluble in 0·3 per cent. hydrochloric acid.*—When 100 grammes of polishings are extracted in the manner described, 26 grammes pass into solution, and of that amount 8·8 grammes are precipitated on the addition of alcohol. Therefore, in the alcoholic filtrate which contains 17·2 grammes of the soluble substances obtained from polishings the essential material should be contained.



Experiments were next carried out to test the accuracy of this suggestion. Polishings in quantities of 180 grammes were treated as in the previous experiment, and the combined filtrates from each 180 grammes were mixed with one and a half times their volume of 95 per cent. alcohol. After standing for two days the precipitate was filtered off, dissolved in warm distilled water, nearly neutralised with sodium carbonate, and the volume adjusted to 1080 cubic centimetres. 30 cubic centimetres of this suspension contained the alcohol precipitable substances (phytin) from 5 grammes of polishings.

Six fowls were fed on washed polished rice and received daily 30 cubic centimetres of this suspension of phytin. Cases of polyneuritis occurred, thus confirming the accuracy of the previously recorded experiments which proved the unimportance of phytin.

The alcoholic filtrate was nearly neutralised with sodium carbonate and evaporated at a low temperature until free from alcohol. The residue was diluted with distilled water to a volume of 1080 cubic centimetres. 30 cubic centimetres of this suspension contained the almost phytin-free soluble substances from 5 grammes of polishings.

Six fowls were fed on washed polished rice, and each received daily 30 cubic centimetres of this suspension. All remained healthy.

These experiments prove that of 5 grammes of sifted polishings required daily for the maintenance of weight and health in a fowl on a white polished rice diet, no less than 4·2 grammes are unimportant, and of the 0·8 gramme remaining probably only a part is essential.

—	Effect on fowls; estimated by occurrence of polyneuritis.	Estimated percentage of fat in diet.	Estimated percentage of P_2O_5 in diet.
Unpolished rice	−	1·65	0·56
Polished rice *plus* polishings ...	−	1·3	0·55
Polished rice	+	0·22	0·26
Washed polished rice	+	0·22	0·21
Washed polished rice *plus* fat-free polishings	−	0·25	0·51
Washed polished rice *plus* polishings	−	1·3	0·51
Polishings Extracted with 0·3 per cent. HCl.			
Washed polished rice *plus* extracted polishings	+	1·3	0·23
Washed polished rice *plus* extract	−	0·22	0·47
Extract Mixed with 1½ times its Volume of 95 per cent. Alcohol.			
Washed polished rice *plus* precipitate (phytin)	+	0·22	0·41
Washed polished rice *plus* filtrate	−	0·22	0·24

Summary and Conclusions.

1. White polished rice when forming the staple of the diet in man has been shown to cause beri-beri.
2. Such white polished rice when fed to fowls produces in them a disease closely analogous to beri-beri in man. This reaction has been taken in this, and previous researches, as a test of the beri-beri producing power of a given rice when it forms the staple of a diet in man.
3. The addition of rice polishings to a diet of white rice is an effective preventive of the development of polyneuritis in fowls. Rice polishings comprise from 8 to 10 per cent. by weight of the original grain.
4. The substances contained in polishings which are effective in preventing polyneuritis are soluble in 0·3 per cent. hydrochloric acid, and are not precipitated from the solution on the addition of 95 per cent. alcohol in quantity sufficient to make the resulting mixture of proof-spirit strength. These substances comprise 16 per cent., or less, by weight of rice polishings, or 1·6 per cent., or less, by weight of the original unpolished rice grain.
5. The fats which are contained in rice polishings in comparative abundance have been proved of no importance in preventing polyneuritis.
6. Phosphorus compounds equal to 85 per cent. of the total phosphorus content have been proved to be unimportant in preventing polyneuritis.

Kuala Lumpur.

CASES OF PRIMARY CARCINOMA OF THE APPENDIX VERMIFORMIS.

BY ALEX. MILLS KENNEDY, M.B., CH.B. GLASG.,
ASSISTANT PATHOLOGIST TO THE GLASGOW ROYAL INFIRMARY; PATHOLOGIST TO THE GLASGOW MATERNITY AND WOMEN'S HOSPITAL.

(*From the Pathological Department of the Glasgow Royal Infirmary.*)

CASES of carcinoma of the appendix have always been considered of very great rarity, and, while admittedly they are rare, the number on record is steadily increasing with the custom of having all appendices removed at operation submitted to microscopical examination. From their situation they give rise to symptoms which direct attention to the appendix, and its early removal, preventing metastasis, goes a long way to explain the apparent non-malignancy of this tumour, which recently has been stated to be in the majority of cases a simple form of endothelioma.

In THE LANCET of Oct. 23rd, 1909, I reported a case of primary carcinoma of the appendix in a man, 49 years of age. This patient remained in good health without return of any symptoms, and ten months after his operation left for Canada, reporting himself by letter, a month later, quite

well. The specimen was found in the routine histological examination of appendices removed at operation. Since then I examined microscopically in the same way 40 appendices before I found the first of the two primary cases now reported. In this new case the appendix is constricted and the lumen occluded, the carcinoma arising at the site of the occlusion.

CASE 1.—The patient is a particularly healthy-looking young woman with a florid complexion. She is only 23 years of age. In November, 1908, she had her first attack of appendicitis; she was seized with sickness and vomiting which continued for about two days, and, shortly after the commencement of the sickness, severe pain in the right iliac region. The attack lasted three weeks. In November, 1909, she had a second attack similar in nature, but less severe than the first. Since her first attack she had always felt a little uneasiness or tenderness in her appendix region, more particularly when she had walked for some time. For three or four years previous to her first attack she had been subject to "bilious attacks," but, except for attacks of measles and scarlet fever, she had always enjoyed good health.

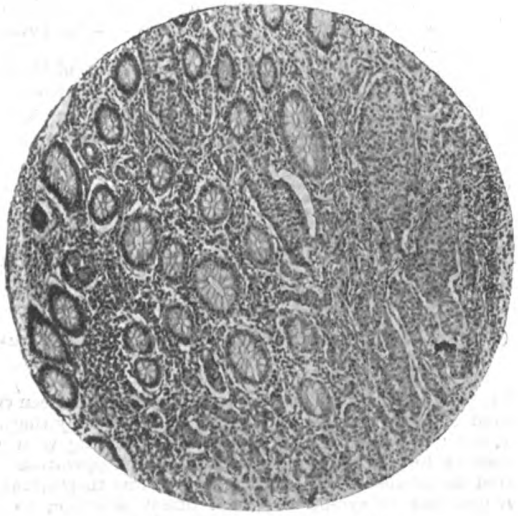
The patient was admitted to Mr. P. Paterson's wards at the Glasgow Royal Infirmary on May 6th, 1910, for operation in the quiescent period after her second attack. Examination revealed tenderness on pressure over the appendix region, but there was no distension of the abdomen nor rigidity of the recti muscles. On May 9th Mr. Paterson performed appendicectomy, and although the organ was readily removed it was found to be adherent to intestine in places.

Mr. Paterson states that at the operation there was nothing found which in any way suggested to him the presence of malignant disease in the appendix or its neighbourhood. The appendix measured 2¼ inches in length, and on external examination it was apparent that there was a constriction ⅞ inch from the distal end. The distal segment formed a spindle-shaped swelling; the proximal segment is narrower and cylindrical. The whole appendix was fixed in formalin 5 per cent., and, after washing, was divided longitudinally in the axis of the meso-appendix. On examining the cut surfaces it was at once seen that the external constricting marking corresponded to a definite stricture of the lumen, apparently a complete occlusion. This appeared to be produced by a thickening of the submucous layer and folding inwards of the mucous membrane, which was limited to the side of the appendix opposite its mesenteric attachment. The distal segment showed a uniform distension of its lumen with a creamy substance which proved to be pus. Nothing of note was apparent to the naked eye in the proximal segment.

Microscopical examination of appendix.—A portion about half an inch long was taken, and longitudinal sections were cut from it; this portion was taken from about the centre so as to include the occluded portion and part of the appendix on either side of it.

The lumen distal to the constriction is dilated and contains inspissated pus, and there is some flattening of the mucous membrane.

FIG. 1.



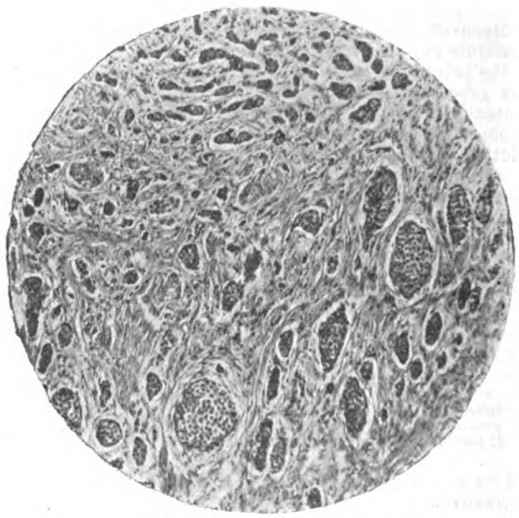
Carcinoma of appendix. × 90.

Proximally the lumen contains only a little mucus and blood, the latter probably the result of the operation. Throughout, for the greater part, there is a fairly uniform thickening of the submucous fibrous layer. At the site of the occlusion this layer is seen to thicken on the side opposite to the mesenteric attachment and then dip in and pass across the lumen, as a narrow band, to the opposite side. The mucous membrane on either side turns inwards and lines the constriction. The circular muscular layer also bends inwards for a short distance at this point.

In this constricted area, and limited to the half of the appendix opposite the mesentery, is an unmistakable carcinoma. In the mucous membrane adjacent to the distal side of the occlusion the carcinoma is seen extending from about midway across the lumen towards the peritoneum. In the mucous membrane carcinoma cells lie side by side with the normal glands, and apparently replace others. (Fig. 1.) The cells are fairly large, spheroidal, with relatively large nuclei, arranged in the alveoli of a scanty fibrous stroma, and forming solid masses of varying size. In short, the structure is that of a typical scirrhous carcinoma.

Passing from the mucous membrane outwards, the carcinoma is seen in the greatly thickened portion of the submucous coat as numerous smaller masses of epithelial cells in the alveoli of a much more abundant fibrous stroma. It passes through the circular muscular coat

FIG. 2.



Carcinoma of appendix. × 90.

as a few isolated masses between the muscle fibres. When it reaches the longitudinal layer of muscle it again forms a definite collection of similar solid masses of epithelial cells arranged as before, in the alveoli of a dense and fairly abundant fibrous stroma. (Fig. 2.) The tumour extends outwards to the peritoneal coat, which is thickened and covered with old adhesions.

Immediately beyond the constriction, adjacent to the carcinoma, there is a deep acute ulcer filled with pus, and extending almost right through the mucous membrane. The muscular coats beneath this ulcer are lost, their place being taken by the old adhesions already noted over the tumour. It appears very probable that this defect in the muscular coats and the formation of adhesions, together with the occlusion, are the result of a former ulceration of the appendix wall. Further, in this occluded area and, as yet, limited to it, there is now present an unmistakable scirrhous carcinoma. There is nothing further of note in the appendix beyond the fact that throughout the circular muscular layer there is considerable fatty degeneration.

The second new specimen was found post mortem, without the appendix having previously been suspected. In it also the appendix is constricted and occluded a short distance from its tip, which is bulbous and occupied by tumour.

CASE 2.—The patient was an extremely emaciated woman, aged 42 years, who was admitted to the medical wards of the Glasgow Royal Infirmary suffering from hepatic enlargement with ascites, and later was transferred to the surgical wards for abdominal drainage. She had been a heavy drinker for many years and had long suffered from indigestion after practically every meal. She had ascites for six months, and œdema of the legs for three months, before admission. On admission there was constant pain over the whole upper and left side of the abdomen, but she was unable to point to any one spot as being the site of greatest pain. The pain was sharp and stabbing and frequently very severe. She died suddenly a month after the operation.

Necropsy.—At the post-mortem examination the liver was found enormously enlarged (129 ounces), and showed an extreme degree of amyloid degeneration, with thickening of its capsule. The spleen and kidneys were also diffusely amyloid, and the capsule of the former was thickened. A firm fibrous mass of thickened adherent pleura, with a large cicatrix in the left lung under it, was found; it was evidently very old, and nothing was found anywhere else in the lung indicative of its nature. There had been a chronic peritonitis, evidenced by thickening and opacity of the peritoneum, with adhesions throughout the abdomen. The stomach and intestine throughout presented an œdematous condition but no other sign of disease.

The appendix was shorter than usual, turned back upon itself, and adherent to the adjacent loop of small intestine. On separation, it was seen that the tip of the appendix was occupied by a small hard nodule, the organ being club-shaped. Careful search was made, but no other tumour nor enlarged glands were found.

Microscopical examination of appendix.—The appendix was fixed in formalin, and longitudinal sections of the whole organ, in addition to transverse sections of the tumour, were prepared. The tip of the

appendix was demarcated from the remainder and bent inwards towards the meso-appendix, and in it there was present a carcinoma.

There were old adhesions round the appendix, and the muscular coats showed some fibrosis. There was considerable thickening of the submucous fibrous coat throughout, and the mucous membrane was also thickened and fibrosed. About ¾ inch from the tip the appendix is completely occluded. Here sections show the circular muscular layer extending right across the organ, bounded on either side by the thickened layer of submucous fibrous tissue. On the mesenteric side the longitudinal layer of muscle dips inwards for a short distance at the site of occlusion, but on the opposite side it passes right over and round the tip.

Beyond the occlusion there is no lumen; the mucous membrane is altogether lost, and its place and the cavity are occupied by a characteristic carcinoma. The tumour appears as two nodules. One, immediately adjacent to the occlusion above mentioned, is completely surrounded by a thickened layer of submucous tissue, and apparently replaces the mucous membrane. The other is situated distally, nearer the tip, which, as above noted, is turned round towards the mesenteric attachment, and is surrounded by muscular and fibrous tissue. Externally the longitudinal and circular muscular layers are distinct, and the tumour here also is situated within a layer of fibrous tissue corresponding to the submucous coat. Between these two nodules a layer of muscle corresponding to the circular layer is present; it is infiltrated with tumour, and the infiltration extends in the circular muscular layer on either side of the distal nodule, but does not involve the tip.

The cells are spheroidal, the protoplasm is abundant, and the nuclei are relatively large and dense; they form solid masses, surrounded by a dense though rather scanty fibrous stroma. The two nodules have practically the same characteristics, and are undoubtedly scirrhous carcinoma. Between the two nodules, and spreading laterally, masses of similar cells are seen between the fibres of the circular ayer of muscle.

During the past 11 months I have examined, as a matter of routine, the appendix in over 350 necropsies, yet this last case is the only primary tumour I have yet found in it. I have twice found secondary tumours in it, and in both cases they were carcinomata secondary to carcinomata of the stomach. They each showed the same structure as the primary growth in the stomach.

The three primary carcinomata of the appendix which I have now reported present features so similar as regards their site of origin that they are of considerable interest in view of the question of the etiology of tumours in general. In the first case the appendix was divided into two segments, no doubt the result of cicatrisation of previous ulceration, and in the sequestrated distal portion the carcinoma was situated. In the second case there is a complete occlusion of the lumen, in all probability due to the same cause, and in this constricted area, and as yet limited to it, the carcinoma is present. In the third case the appendix is also completely occluded in the same way near its tip, and beyond the occlusion, filling up the cavity and replacing the mucous membrane, is the carcinoma.

In the first two cases, and probably in the third also, the patient had had more than one attack of ordinary appendicitis; from the histological appearances we can conclude that it is highly probable that in each case a certain amount of localised ulceration of at least the mucous membrane occurred, followed by cicatrisation in the process of healing. No doubt this causes considerable disturbance and separation of the epithelial cells of the mucous membrane, and in each of these cases a carcinoma has arisen at the situation of the damage.

As previously pointed out, these cases are of considerable interest in view of Ribbert's theory of tumour formation—viz., that tumours arise from a partial or complete separation of cells, or groups of cells, from their organic continuity—that is to say, from mechanical isolation.

Glasgow.

THE SURGICAL AID SOCIETY.—Under the presidency of the Lord Mayor of London the Surgical Aid Society held its forty-eighth annual meeting at the Mansion House on Dec. 6th. Mr. Samuel Watson was reappointed honorary treasurer and Mr. F. R. Fisher, the senior surgeon to the society, was appointed honorary consulting surgeon. Sir James Crichton-Browne proposed, and the Rev. J. Scott Lidgett seconded, a vote of thanks to the medical officers who gave their services to the society. This was carried unanimously. Mr. E. Muirhead Little replied. In moving a vote of thanks to the Lord Mayor Archdeacon Sinclair referred to the satisfactory report which had been issued. He pointed out that the total net income for the past year was nearly £28 400, that the annual subscriptions showed an increase of £887, life subscriptions an increase of £359, and contributions from local branches an increase of £329. There had been increase in expenditure for relief of £1562, but the cost of management had been reduced by £316. In the course of the proceedings the secretary announced subscriptions amounting to £271.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF ENCHONDROMA OF A PHALANX FOLLOWING INJURY.

BY THOMAS H. KELLOCK, M.C. CANTAB., F.R.C.S. ENG.

IN view of the importance which nowadays attaches to injuries sustained by workmen in the course of their occupation, any uncommon or unexpected sequel of such is worthy of record when the question of disablement and compensation arises.

In the case now reported there seems to be no reason to doubt that the injury received was the direct cause of the condition that resulted. Those who first saw the case considered the disease of the phalanx to be of a tuberculous nature; it was treated as such for some time and a very doubtful prognosis given as to the ultimate usefulness of the finger, which, being the index of the right hand, was of considerable importance and value. The finding that the enlargement was due to enchondroma materially altered the line of treatment to be adopted and also the prognosis both from the patient's point of view and that of his employers.

The patient was a young man, 18 years of age, an engine fitter by trade. His father had died from "brain fever," otherwise there was no family history suggestive of tuberculosis, syphilis, or new growths. When 3 years of age the patient was said to have suffered from "consumption of the bowels," and when between 6 and 7 he had measles. With these exceptions he had had no previous illnesses. In the course of his occupation he had often received blows on his fingers, but had never been seriously injured. In December, 1908, whilst at his work, his right hand was resting, palm upwards, on an iron plate waiting to receive a bolt which a fellow workmen was knocking out. The bolt came through and rested on the first phalanx of the index finger. The other man, thinking it was not through, gave it another hard blow, the result being that the patient's finger received the full force of this between the bolt and the iron plate. The finger was considerably bruised and painful, but he continued at his work until March 31st, 1909, when, finding it swollen and some limitation of movement at the first interphalangeal joint he first sought advice about it. Scott's dressing was then applied and the finger kept on a splint for two months, and after that it was kept in a plaster-of-Paris casing for a further ten months, during which time he did no work. He suffered no pain or inconvenience except that the finger "throbbed" if he got hot by any exertion.

When seen in March, 1910, the proximal phalanx of the right index finger was found to be considerably enlarged, the enlargement being of a fusiform shape and extending the whole length of the bone. It felt densely hard, but was not tender; the skin was neither adherent nor discoloured over it, but was a little thin and shiny from disuse. Flexion at the first interphalangeal joint was limited in extent, but what there was was easy and free, the interference with movement being apparently more mechanical than pathological. No enlarged glands could be felt either at the elbow or in the axilla. A skiagram showed the bone to be larger than normal; the centre appeared to be comparatively clear, but the peripheral parts very dense, as if the bone were a mere hard shell with well-marked external and internal surfaces. The condition was thought to be probably due to an unabsorbed collection of blood in the interior of the bone—a so-called "blood cyst."

An incision was made down to the bone in the long axis of the finger between the lateral nerve and the extensor tendons. The periosteum was very easily pushed back, exposing a markedly sclerosed condition of the surface of the bone. This was then opened with a gouge, the bone being brittle and breaking easily, almost like a dry egg-shell. The cavity was found to be filled with an almost dry gelatinous material of a light brown colour. This was easily scraped out, leaving a well-defined cavity the contour of which was formed of hard, smooth bone; the cavity was filled with decalcified bone, the periosteum brought together over the opening made by the gouge, and the skin sutured. Primary union occurred. On examining the tissue that had been removed it

was found to contain a large number of cartilage cells with a more or less homogeneous matrix.

The patient resumed work about six weeks after the operation. When seen in September last the bone was found to have diminished slightly in size. He had had no pain or inconvenience in it, and the movement at the joint was easy and free to the extent of a right angle.

Queen Anne-street, W.

NOTE ON A CASE OF IMMEDIATE SERUM REACTION.

BY T. THOMSON RANKIN, M.D. GLASG.,
AND
A. M. PRYCE, M.B., CH.B. EDIN.,
ASSISTANT MEDICAL OFFICERS, CITY HOSPITALS, LEEDS.

THE following case is of interest in so far as it shows an immediate reaction to a single dose of anti-diphtheritic serum.

A female infant, aged 21 months, was admitted to the Leeds City Hospitals on July 5th, 1910, suffering from diphtheria. On admission she received 5000 units of concentrated diphtheria antitoxin (P. D. and Co.) by subcutaneous abdominal injection. Within 15 minutes a profuse and typical urticarial eruption appeared on the face, arms, back, chest, and legs. This rash lasted two days and disappeared gradually; the highest temperature noted during its presence was 101·4° F. On the eleventh day of the disease and the seventh after the injection another urticarial eruption developed and the temperature did not exceed 100°. The patient did well and was discharged on August 24th. Prior to her discharge 2 c.c. of sterile water were injected subcutaneously without any reaction being made manifest.

The occurrence of immediate and accelerated reactions following repeated injections of anti-diphtheritic serum has been noted and recorded, but the appearance of serum phenomena so soon after a single injection has not come under our notice. To avoid the possibility of error, we injected the sterile water and inquired into the history of the child and mother. The failure of the sterile water to produce any reaction is evidence of the fact that the phenomena were due to the serum. We were able on close inquiry to exclude the usual causes of urticaria, such as unsuitable diet, drugs, &c.

It has been suggested that a woman who has had diphtheria antitoxin may transmit to her child a tendency to be abnormally sensitive to serum, as occurs in the case of guinea-pigs. We are able to exclude this possibility, as the mother of the child never had diphtheria or diphtheria antitoxin.

We are indebted to Dr. A. E. Pearson for his kind permission to publish these notes.

Leeds.

NOTE ON A CASE OF MUCOUS COLITIS SUCCESSFULLY TREATED BY VACCINE-THERAPY.

BY G. C. STEELE-PERKINS, M.D. EDIN., M.R.C.S. ENG., L.R.C.P LOND.

A FEMALE, aged 23 years, came to me on Oct. 1st, 1909, with a history of mucous colitis on and off (diagnosed as such by her medical attendants) for the past eight years. The present attack commenced six months ago. Her symptoms were loose motions, the passing of mucus and shreds of membrane, straining at stool, constipation, and pain and tenderness in the region of the ascending, but especially in the region of the descending, colon. She was feeling quite unfit to do anything, became easily tired, and was generally out of health.

Until Feb. 28th, 1910, I tried a variety of treatment, including rest, dieting, decoction of cortex simarubæ, massage of the colon, &c., but the patient showed no improvement. On the above date I sent specimens of her blood, urine, and fæces to Dr. J. W. H. Eyre for bacteriological examination, who on March 3rd reported as follows: "Urine: sterile. Fæces show that the normal bacillus coli is practically absent, but its place has been taken by streptococcus pyogenes longus and a bacillus having characters intermediate between the bacillus lactis aerogenes and bacillus pneumoniæ of Friedländer. Blood: Opsonic index to the streptococcus 0·7, and to the bacillus 0·6." Vaccines were prepared from each of these micro-organisms. From March 7th to May 31st I injected the patient with the prepared vaccines of both the streptococcus and bacillus, in doses from 5 millions to 25 millions, at intervals of about eight days.

The details of these injections and of the opsonic indices are as follows:—On March 7th and 14th, 5 millions each of the streptococcus and bacillus. March 18th: Opsonic index to streptococcus 1·3, to bacillus 0·9. 21st: 10 millions of the bacillus. 29th: 10 millions each of the streptococcus and bacillus. April 6th: Opsonic index to streptococcus 1·01, to bacillus 0·8. 7th: 10 millions each of the streptococcus and bacillus. 15th: Opsonic index to streptococcus 1·1, to bacillus 0·5. 16th: Streptococcus 10 millions. 20th: Bacillus 10 millions. 27th: Opsonic index to streptococcus 1·09, to bacillus 1·1. 28th, May 6th and 14th: Streptococcus 10 millions and bacillus 25 millions. May 18th: Opsonic index to streptococcus 1·0, to bacillus 1·2. 23rd and 31st: Streptococcus 25 millions, and bacillus 25 millions. On May 31st the patient told me she had not suffered severe pain for over six weeks, that she was considerably better in health, and was passing a much less number of shreds; there was no tenderness of abdomen. Dr. Eyre reported: "No streptococci in shreds from bowel."

From June 8th to Sept. 13th I injected the patient with the bacillus vaccine in doses from 25 to 50 millions at intervals of about a fortnight, and on the latter date the patient informed me that she had been feeling very well for several weeks. The details of these injections and of the opsonic indices are as follows:—June 8th: Bacillus 25 millions. 14th: Opsonic index to streptococcus 1·1, to bacillus 0·96. 25th, July 9th and 23rd: Bacillus 50 millions. July 28th: Opsonic index to streptococcus 1·6, to bacillus 1·2. August 5th, 22nd, and Sept. 2nd: Bacillus 50 millions. Sept. 7th: Opsonic index to bacillus 1·04. 13th: Bacillus 50 millions.

On Oct. 11th Dr. Eyre reported: "The specimens of fæces show a practically normal bacteriological flora. The normal bacillus coli was present in what I should consider normal numbers. The bacillus from which the vaccine was prepared has entirely disappeared, and so also has the streptococcus longus. A few colonies of streptococcus brevis (a normal inhabitant of the intestinal tract) were noted."

During the vaccine treatment the patient continued having careful massage of the colon, was dieted, and non-irritating aperients were given when necessary. The doses of the vaccine were regulated partly by the clinical symptoms and partly by opsonic estimations of the blood.

Oct. 12th: The patient continues in good health, feels quite well, and passes no shreds of mucous membrane.

Wimpole-street, W.

BRITISH DENTAL ASSOCIATION.—The annual meeting of the metropolitan branch of the British Dental Association was held in the school buildings of St. Bartholomew's Hospital on the evening of Dec. 7th, Mr. W. B. Paterson, dental surgeon to the hospital and president of the branch, in the chair. After the transaction of formal business, Mr. Paterson delivered an address, in the course of which he described the origin and growth of the dental department of the hospital, the scope of its work as a charity, and its teaching in the medical school. The department was founded in 1837, when Mr. Arnold Rogers was appointed the first dental surgeon, with the duty of visiting the hospital one day in the week. Upon his retirement in 1849 he was succeeded by Mr. Tracy, who in turn was followed by Mr. Alfred Coleman. In 1879 the department was reconstituted and met twice weekly. The department was now in charge of four dental officers and met daily. The dental teaching of medical students was carried out on definite lines, and quarterly classes were held for those about to commence surgical dressing in the wards. The elements of dental surgery were taught, and extraction operations practised in the dissecting rooms. Attendance at the casualty dental department and dressership in the department were open and free to all students, and were specially recommended to those who intended joining the Naval and Army Medical Services. After the address the members visited the great hall of the hospital, the new pathological block, and museum. The proceedings terminated with a conversazione in the library.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION.

Septicæmia Hæmorrhagica.—Gastric and Intestinal Hæmorrhages.—Fractures of Patella.

A MEETING of this section was held on Dec. 13th, Mr. RICKMAN J. GODLEE, the President, being in the chair.

Mr. W. G. SPENCER read a paper entitled "Septicæmia Hæmorrhagica: Severe Capillary and Parenchymatous Hæmorrhage of Septic Origin." He said that there was a class of grave and fatal hæmorrhages which were not included under the subjects of primary or secondary hæmorrhages, nor could they be ascribed to any congenital lesion such as hæmophilia, nor to degenerative lesions such as occurred in Bright's disease or were induced by the toxic influence of alcohol. Indeed, those causes of hæmorrhage were excluded from consideration by the speaker, and none of the cases referred to were predisposed to hæmorrhage from those causes. The peculiarity of the hæmorrhage he proposed to discuss was that it might occur from a mucous or serous membrane without any naked-eye breach of surface; or it might happen from a raw surface without any special blood-vessel being opened; or if into an organ, there was parenchymatous hæmorrhage without any preliminary traumatism or degenerative process in that organ. Such hæmorrhages were well-known complications of the specific and tropical fevers, as well as of scurvy. One could not attribute such hæmorrhages to an excess of pulse-tension, for, indeed, the hæmorrhages, whether from the nose or gastro-intestinal canal, continued to recur when the patient had become very weak. In bringing forward cases which had come under his observation, he was well aware that he could deal only inadequately with the essential part of the subject—the bacteriology. For that was the clue to the treatment, whether by an antitoxin given immediately or by auto-vaccination as soon as possible. His attention was first drawn to the subject by Klein's experiments on a variety of streptococcus causing hæmorrhage. In 1897 Klein received from Dr. J. G. E. Colby of Malton fluid taken from vesicles on the skin of a man who two or three days before had been engaged in skinning sheep dead from puerperal septic œdema after lambing, the so-called "gargel." Klein cultivated a streptococcus from the material which, when injected subcutaneously into guinea-pigs, caused subcutaneous and intermuscular connective-tissue hæmorrhages around the site of inoculation, along with blood effusions into the pleural and peritoneal cavities. The same results followed the injection of cultures into rabbits and sheep. Returning to human pathology, there occurred cases of hæmorrhagic empyema and ascites. Oliver had described cases of thoracic empyema followed by fatal hæmorrhagic oozing from the wall of the cavity; the organisms found were the diplococci of Friedländer, not the pneumococcus. In those cases injury to an intercostal artery or pulmonary vessel was excluded. Hæmorrhagic ascites had proved very fatal, doubtless due to infection by organisms, but he was not aware of any definite report as to the organisms present. Under the term of purpura a collection of hæmorrhagic diseases were discussed in works on medicine. Some of those cases were traceable to streptococcal infection, especially when a complication of puerperal fever occurred. Melæna neonatorum formed another class of fatal hæmorrhagic disease. The acute hæmorrhages which complicated diphtheria of the fauces were very fatal. Acute hæmorrhages into the stomach, as shown by black vomit, constituted a grave complication. In medical practice they followed the specific and tropical fevers; in surgical practice they occurred late in such cases as intestinal obstruction, gall-bladder suppuration, and gangrenous appendicitis, and might follow operations when sepsis could not be prevented. He had seen that fatal termination in the various forms stated, but unfortunately he had no bacteriological information to give. Hæmorrhagic pancreatitis was a well-known form of parenchymatous hæmorrhage, in which the exact type of organism causing the affection could not yet be stated with certainty. There did not appear to be sufficient reason to ascribe the hæmorrhages to bacillus coli communis, which was the organism generally found in such abdominal complications. Dr. F. W. Andrewes had published the post-mortem examination of a case of muscular hæmorrhage following typhoid fever. Hæmorrhages of a similar character might be produced by poisons such as phosphorus and benzine both in human beings and, experimentally, in animals. It would seem likely that the actual influence on the blood-vessels was through the agency of toxins produced by such poisons, and therefore the actual production of the hæmorrhages might essentially not differ from those originated by organisms. He referred to cases of acute hæmorrhagic cellulitis in which on incision no distinguishable amount of pus escaped, but blood poured out most freely. Several grave cases of hæmorrhage from the kidney and bladder had come under his notice which could not be classed with common causes of hæmaturia. Hammersley had described a patient who had attacks of pain in the right kidney with severe hæmaturia which was relieved by removing an inflamed appendix, and he attributed the renal affection to infection spreading from the appendix. Eve recorded a case of fatal hæmaturia due to psorosperms. Posner in a man subject to attacks of hæmaturia found amœbæ. He had included in his paper cases which differed widely from one another. But they were all grave and obscure. Some cases of septicæmia hæmorrhagica had been certainly caused by streptococci. The occurrence of the hæmorrhage might be explained by supposing the organism to collect especially in contact with the walls of the blood-vessels. Under the effect of the toxins the walls of the vessels became weakened and gave way, so as to allow the escape of blood. That occurred without intravascular thrombosis, which in ordinary acute inflammation must be the chief factor in preventing hæmorrhage. Neither was there any massive collection of leucocytes at the inflammatory focus, so that very little pus formed. The identification of streptococci as the commonest organism suggested an immediate recourse to streptococcal antitoxin, whilst the identification of the particular organism was being made. The first case of success by the use of streptococcal antitoxin was reported by Ballance and Abbott. A finger was pricked at a necropsy on a case of suppurative peritonitis, and acute septicæmia set in, complicated by cutaneous hæmorrhages. Immediate relief followed the use of streptococcal antitoxin. When the infection was not due to streptococci, or was a mixed infection with staphylococci or bacillus pyocyaneus, the preparation and injection of an auto-vaccine should be carried out as quickly as possible. The extravasated blood clotted readily, and that explained the fact that the administration of calcium chloride had had no influence on the hæmorrhage.

Mr. JONATHAN HUTCHINSON read a paper on Gastro-intestinal Hæmorrhage, usually of septic origin, occurring after abdominal operations. He said that that form of hæmorrhage, shown as a rule both by hæmatemesis and melæna, was due in most cases to very small ulcers or erosions in the stomach wall (occasionally also in the duodenum, &c.). He narrated a case at length in which death occurred on the seventeenth day after cholecystectomy. The first operation was done for gall-stones and cholecystitis; at the same time an abscess above the liver was drained. After the onset of hæmorrhage on the ninth day the stomach was explored and one bleeding spot in its wall secured by ligature, another being cauterised. Twenty-three similar cases of gastric hæmorrhages after operation, occurring in the London Hospital in the course of three years, were analysed. It was found that the condition for which the operation was done was in 80 per cent. of a septic nature, suppurative appendicitis providing the majority—viz., 13 cases out of 24. In 3 out of the 24, acute ulcers of some size were found post mortem; in the rest small erosions only were present. One patient only recovered after repeated and severe hæmorrhage; all the others proved fatal. Sixteen cases of similar nature, in which no operation had been done, were also analysed. Those occurred in the medical wards of the London Hospital during the same period of three years. The disease for which those patients were admitted was of septic nature in the same proportion as those operated on—i.e., 80 per cent. It was certain that an alteration in the blood due to a poison usually of septic origin was the main factor in the

production of gastric erosions of this kind. If an operation had been performed it was a mere coincidence, except in the rare cases where it was responsible for abdominal sepsis. Hæmorrhage of that nature, whether occurring after an operation or as a complication of another disease, was of very grave prognosis. A few cases, however, proved that spontaneous recovery might ensue. Operative interference did not appear to hold out any material prospect of success in checking the bleeding, but further experience was required to decide that point. Out of the 40 cases analysed the only one in which it was tried was the one in which Mr. Hutchinson had operated.—The PRESIDENT suggested that in some of the cases the condition was not due to sepsis, but was to be attributed possibly to the influence of the anæsthetic.

The meeting concluded with the reading of a paper by Mr. A. E. JOHNSON on Fractures of the Patella without Separation of the Fragments.

CLINICAL SECTION.

Exhibition of Cases.

A MEETING of this section was held on Dec. 9th, Sir A. PEARCE GOULD being in the chair.

Dr. WILLIAM HUNTER showed a case of Addisonian Anæmia (Idiopathic Pernicious Anæmia). The patient, a male, came under observation in July, 1900, showing typical features of this disease—red-blood cells 25 per cent., hæmoglobin 35 per cent. The case was treated by strict oral antiseptic measures, combined with the administration of antistreptococcic serum. The recovery was immediate and striking; in three weeks the blood showed red cells 65 per cent., hæmoglobin 75 per cent., subsequently rising to 94 and 104 per cent. respectively, when the case was shown before the Clinical Society. The case was then described in a paper before the Royal Medical and Chirurgical Society in January, 1901. The patient had been under close observation ever since in order to thoroughly test the methods of treatment mentioned. A relapse occurred in the end of 1901, the red blood cells falling to 60 per cent., followed by rapid recovery—red blood cells 92 per cent. Another relapse at the end of 1902—red blood cells 50 per cent.; recovery in 1903—red blood cells 80 per cent. A severe relapse at the end of 1903, red blood cells falling to 30 per cent., followed by striking recovery in three months—red blood cells 90 per cent., hæmoglobin 120 per cent. The patient had remained without any relapse during the last seven years. The present condition of the blood is, red blood cells 105 per cent., hæmoglobin 115 per cent. The case showed, at the onset of the disease and during the first three years—1900–03—while he suffered from the relapses mentioned, the characteristic clinical features involving (1) glossitic gastro-intestinal disturbances; (2) hæmolytic changes with evidence in the blood and urine; (3) pyrexia; and (4) peripheral nervous disturbances. During the last seven years these features had been absent.—Dr. N. DALTON observed that the gastric cases of this affection were the best from the point of view of prognosis, apparently getting well with the administration of bismuth, excepting, of course, cases of pernicious anæmia following cancer.

Dr. JAMES GALLOWAY and Dr. W. J. FENTON showed a case of Stokes-Adams Symptoms in a lad aged 18 years. The patient was fairly well developed; there was no history of any serious illness till the month of May, 1910. He was then employed in an office in the City, and had passed through a hard winter's work. During the month of May he commenced to suffer from repeated partial fainting attacks, and for that reason medical advice was sought. When he came under observation the pulse frequency at the wrist varied from 32 to 40 per minute. Occasionally marked irregularity occurred, but the irregularity appeared to be always of the same type—two or three beats with long intervals, followed by a succession of beats with short intervals. The fainting attacks occurred with no warning—a slight exertion was often sufficient to bring them on. Occasionally he had lost consciousness for a very short time in these attacks, but usually they were transient and consciousness was not completely lost. On several occasions climbing to the top of an omnibus made him inclined to be faint. Rarely several fainting attacks had occurred in rapid succession. There was no evidence of valvular lesion nor of cardiac enlargement or hypertrophy. No other visceral disease was present. Since the commencement of his attack the patient had rested, but the conditions described persisted. Fainting attacks were less numerous. The sphygmographic and string galvanometer tracings kindly made by Dr. Thomas Lewis of the heart's action were shown, and gave evidence of very complete "heart-block."—Dr. F. J. POYNTON discussed the question whether the patient would get well or remain an invalid, and supposed that congenital affection of the bundle of His was against a good prognosis.—Dr. GALLOWAY said that he would do his best to bring the patient again before the section.

Dr. GALLOWAY showed a case of Multiple Telangiectases of recent origin. The patient, a man, aged 35 years, had been in the army, and had served in the West Coast of Africa, India, and Burma. He had probably had syphilis, but had no regular treatment. He was invalided out of the service from Burma on account of lung disease. There was now evidence of consolidation in patches throughout the right lung; there was a slight degree of fever, and a few tubercle bacilli were found in his expectoration. There was an enlargement of the liver. About 18 months ago he noticed the development of the red spots on the skin. These occurred mainly on the face, neck, and shoulders; several dozens might be counted. A few others existed on the body and on the lower extremities. They consisted of permanently dilated capillaries, radiating from a central point—large "spider-nævi." The centre of each system had a dark purple punctum which increased in size, forming in some cases an angioma of the size of a large pea. In some cases a considerable area of the skin was covered with the thread-like telangiectases, but without the elevated central point, as on the right side of the neck. They bled profusely when injured, and one situated on the edge of the left nostril had given much trouble for that reason. No telangiectases were visible on the mucous membranes; there was no hæmaturia nor melæna. Hæmoptysis had been very profuse. No history of a similar condition in his family was obtainable.

Dr. H. E. SYMES-THOMPSON showed a case of Infantilism. The patient was a female, aged 34 years, single; height, 3 feet 2½ inches; weight, 3 stones. Nothing abnormal was noticed until the patient was between 3 and 4 years old, when she ceased to grow. She went to school until she was 14, and learnt to write, sew, and knit, but not to read. Her memory was good, and she knew the numerals and alphabet. She was babyish in her ways, and was fond of dolls. The circumference of her head was 20½ inches. There was some kyphosis and scoliosis. The teeth were fair, the hair of the head was normal, but the mammæ were undeveloped, and there was no axillary or pubic hair. Skiagrams showed a backward condition of ossification, the epiphyses of the long bones not being joined to the shafts and the ossa innominata were incomplete. The family history presented nothing of note. The patient's general health was fair. The bowels were regular and the motions normal. The case did not appear to be secondary to rickets, syphilis, or any other disease, and it apparently fell into the classification of Hastings Gilford as an instance of primary infantilism, or ateleiosis.

Dr. F. PARKES WEBER gave details of a case of Ateleiosis in a man aged 42 years. In this patient physical development was said to have been arrested at about the age of 9 years. The case was exhibited to the Section for the Study of Disease in Children at the Royal Society of Medicine on May 27th, 1910.

Dr. W. ESSEX WYNTER showed two cases of Henoch's Purpura. Case 1 was a female, aged 11 years, admitted on Sept. 26th, 1910. She had had rheumatism when 4 years of age, but no other illness. There was pain in the abdomen for one week, independent of food; and for four days pain, swelling, and stiffness in the left wrist. Purpuric spots appeared on the leg at the commencement of the illness, and on admission extended to all the limbs. Systematic examination disclosed no abnormality of organs; splenic dulness extended to the costal margin, but the edge could not be felt. Pain was complained of in the epigastric and umbilical regions, and there was some general abdominal tenderness. The patient vomited on the day after admission, some blood being present in the vomited matter. On Oct. 1st there was considerable intestinal hæmorrhage, and that recurred on the 4th. On the 15th a fresh crop of purpuric spots appeared on the right foot. On the 24th, the symptoms having subsided, the patient was allowed to get up, but on the 28th fresh purpuric spots appeared on the legs, and there was some œdema of the left foot. On Nov. 7th, after getting up for

some days, fresh purpuric spots appeared on the inner side of the left ankle, and on the following day blood and albumin appeared in the urine. Microscopically blood corpuscles were seen, but no tube casts; no globulin was present and no œdema. The albumin had gradually diminished, but was still present and varied in amount. Weight, pulse-rate, temperature, respiration, and quantity and specific gravity of urine and blood showed no departure from normal. Throughout there was marked pallor of the face, the lips remaining red. Case 2 was a male, aged 13 years, admitted on Oct. 19th, 1910. A similar illness occurred two years before. Five days before admission pains were felt in the legs and purpuric spots appeared. The patient vomited the day before admission. When first seen there was abdominal pain and a purpuric eruption of the legs and feet; the ankles swelled. Systematic examination disclosed no abnormality of organs; splenic dulness extended to the costal margin, but the edge could not be felt. The symptoms subsided in three days and the patient was allowed to get up on Oct. 28th. On Nov. 7th there was a fresh purpuric eruption on the right leg and the left elbow. On the 8th there were blood and albumin in the urine; corpuscles and blood-casts were seen in deposit but no epithelial casts; no œdema. Several attacks of vomiting occurred. On the 24th there was intestinal hæmorrhage. Pulse- and respiration-rate, temperature, quantity of urine, and body-weight remained normal. The blood examination showed 19,000 leucocytes, red cells 4,800,000, and 65 per cent. hæmoglobin.

Dr. GALLOWAY described a case of a child who came to him with symptoms similar to the two cases shown. The symptoms in his case followed indulgence in nuts and blackberries. He asked if it was a wise thing to isolate such cases under a special name.—Dr. F. DE HAVILLAND HALL quoted a case in which there was a difficulty of diagnosis between Henoch's purpura and intussusception. He mentioned oil of turpentine as a useful remedy in purpuric cases.

Mr. LIONEL E. C. NORBURY showed a case of Perforated Tuberculous Ulcer of the Ileum. The patient, a male, aged 39 years, had a history of occasional attacks of epigastric pain; there was no history of constipation. He was admitted with eight hours' history of acute abdominal pain, chiefly in the lower half of the abdomen. The patient was doubled up; he vomited later. On examination the temperature was 100° F., the pulse 100 per minute, and respirations 20. There were tenderness and rigidity of the abdomen, chiefly of the lower half; liver dulness was normal. An operation was performed nine hours after the acute onset. Exploratory cœliotomy—no free gas; small amount of free fluid in abdominal cavity, and lymph; stomach and appendix normal; hard swelling found involving small intestine 2 feet from cæcum; lumen of bowel much narrowed; small perforation in wall of bowel at that situation; resection of 4 inches of ileum with ulcer; end-to-end anastomosis; dry sponging of pelvic cavity; suture of parietes, no drainage. There was an uninterrupted recovery. Microscopical examination proved ulcer to be "tuberculous." Examination at operation showed no other ulcers in the small intestine.

Mr. LAWRIE H. MCGAVIN showed a case of Varix of the Right Superficial Epigastric Vein. The patient was a male aged 52 years. He stated that in 1901, when jumping overboard to save a man, he strained himself. He suffered from severe pain in the stomach at the time, which "doubled him up." The veins on the abdomen became enlarged after that, and had been increasing in size since. The patient now showed well-marked varix of the superficial epigastric vein of the right side. The vein was extremely tortuous, and presented lateral dilatation and pouching of the wall, especially in the region just above the umbilicus. The condition might possibly have been brought about by rupture of the vessel wall, with consequent thrombosis.

Mr. MCGAVIN also showed a case of Trunk Lesion of the Fifth and Sixth Cervical Nerves; keloid development in scars. The patient was a male aged 6 years. He was admitted into hospital on May 13th, 1910, and, as a result of being run over by a cart, was suffering from a wound of the face and fractured left clavicle. The wounds were cleaned up and sutured and the clavicle put into position. It was noticed that there was paralysis of all the nerves of the arm, with the exception of the ulnar. It was thought at the time that that was due to pressure from effused blood, but as the condition did not clear up a flap was turned back from the shoulder and the clavicle exposed (June 9th). The outer end of the clavicle had become depressed and was producing pressure. That was lifted up and the fractured ends were wired. The patient was discharged on June 23rd. The wound had healed perfectly, and the paralysis was apparently clearing up. Returning to hospital a week ago—i.e., six months after—it was found that every scar had become keloid in character, both those produced at the time of the accident and those subsequently by operation.

Mr. L. VERNON CARGILL showed a case of Double Proptosis due to a growth invading each orbit. The patient was a male aged 20 years. He was a sailor and native of Barbados; now an in-patient at King's College Hospital. The family history was unimportant. His general health had been always good. He had a sore on the penis two years ago. Last June his attention was first drawn to a painless swelling under the nasal half of the upper lid of the right eye. He went to the "Dreadnought" Hospital in July, and there was then proptosis of both eyes but more marked on the right side. There was a bulging forward of both upper eyelids caused by a soft, non-pulsating swelling beneath, situated in the upper and inner part of each orbit. The ocular movements were slightly restricted in all directions, but more particularly upwards, but there was no ocular paralysis and no diplopia. The optic discs were normal, there was no lesion to be seen in either fundus, the pupils were normal, as were the visual acuity and the visual fields. There was no evidence of any of the cranial nerves being affected. At the end of July Dr. R. E. Bickerton removed a small portion of the growth beneath the right upper eyelid for examination. Photographs were taken on August 11th which showed the conditions then present. In them the right eyelid, which had been recently incised for the removal of a portion of the growth, was drooping. The bulging of the eyes and the orbital swellings had since then gradually increased and been accompanied by some occasional pain at night between the eyebrows, over the root of the nose, and in the temples. His proptosis was now so extreme, especially on the left side, that he was unable to close his eyelids properly, and epiphora had become troublesome and constant. The movements had become more limited, the tumours had increased and extended further round on the nasal sides of each orbit, and the eyes were displaced downwards and were further apart, so that the distance between the pupils was as much as 78 millimetres. The caruncle and plica semilunaris on each side were swollen, chemosed, and injected. A swelling had appeared in the forehead, chiefly over the region of the left frontal sinus, and extending to the upper margin of the left orbit, which was tender, felt hot, and pitted on pressure, the bone beneath feeling raised. That showed slightly in the full-face photograph. Some enlarged glands were to be felt on both sides of the neck and there was a soft glandular-like swelling under the tongue. Eyes and vision still remained normal. There was no loss of smell. Dr. StClair Thomson had kindly examined the nose and sinuses and reported as follows: "The nose and post-nasal space are quite free and healthy. There is no stenosis, pus, or new growth in any of these spaces. Transillumination shows both maxillary sinuses equally translucent. There is tenderness over both frontal sinuses, more over left, where there is slight œdema. The growth might be primary in the frontal sinuses." There was nothing further abnormal to be felt or detected in the chest, abdomen, or elsewhere. The blood examination gave "R.B.C., 4,430,000; W.B.C., 9000; hæmoglobin, 75 per cent.; polymorphs, 31 per cent.; eosinophiles, 9 per cent.; monomorphs, 55 per cent.; hyalin bodies, 5 per cent.; very numerous platelets." His colour precluded any note being added as to his complexion. A few days ago Mr. Cargill removed a portion of the growth from the left orbit, sections of which had been examined by Dr. Emery. They showed the structure to be that of a hæmangiolymphadenoma, consisting of young connective tissue with the formation of definite lymphatic follicles around the blood-vessels, the growth having started in the perivascular lymphatics. The sections of the first portion removed by Mr. Bickerton were first regarded as round-celled sarcoma but they showed the same structure in an earlier stage. A. Q. Silcock in 1888 showed a case[1] of a child, aged 9 years, with a tumour

[1] Transactions of the Ophthalmological Society, vol. viii., p. 53.

affecting both orbits. The microscopical examination was said to present the characters of round-celled sarcoma, but the same mistake might have been made in that case as in the early sections from the present one. Collins[2] described the case of a child, aged 1¾ years, which had separate tumours in the two orbits. Death ensued; and microscopical examination showed them to resemble lymphatic gland tissue, and there were deposits of a similar character which had not been discovered during life in most of the organs of the body. There was no enlargement of the external lymphatic glands, although those of the chest and abdomen were extensively involved. He referred to five similar cases in the literature, occurring at the ages respectively of 70, 57, 48, 33, and 4½ years, in addition to Silcock's case alluded to above.

Dr. G. A. SUTHERLAND and Mr. F. F. BURGHARD communicated a paper on two cases of Splenectomy for Splenic Anæmia, which will be published in THE LANCET.—Dr. F. DE HAVILLAND HALL described a case in which success had followed splenectomy.—Dr. H. D. ROLLESTON declared that his experience was that the operation had not been followed by success, and Sir A. PEARCE GOULD related the facts of a case of splenectomy with good recovery, the patient leaving hospital in excellent condition, but returned subsequently suffering from a plethoric condition, and died eventually from gastric and œsophageal hæmorrhage.

Dr. M. A. CASSIDY and Mr. C. M. PAGE demonstrated a method of determining the Absolute Pressure of the Cerebro-spinal Fluid.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

Operations for Cancer of the Uterus.—Exhibition of Specimens.

A MEETING of this section was held on Dec. 1st, Dr. H. MACNAUGHTON-JONES being in the chair.

Dr. ARCHIBALD LEITCH read a paper on the Pathological Bases of Operations for Cancer of the Uterus. He considered that it was impossible to determine from clinical or histological examination the exact extent of cancerous disease in any given case. Hence it was justifiable to conclude that the only way of obtaining a radical extirpation of the disease was to apply to every case of cancer of the uterus a technique which was designed for the most advanced. Statistics had shown that 55 per cent. of cases were free from visceral or glandular metastases at the time of death, but these figures only applied to dissemination outside the pelvic cavity. Three lymphatic tracts were described: (1) to the inter-iliac glands; (2) to glands along branches of the internal iliac artery; and (3) to para-rectal glands. The last set were very rarely affected, in spite of the supposed frequency of invasion of the utero-sacral ligaments. The inter-iliac glands were the most important, and were in communication with another set on the outside of the common iliac artery. Both sets should be removed when there was evidence of glandular infection. Along the course of the ureter, through the broad ligament, lymphatic infection of the cellular tissue occurred, and by fibrotic contraction, as well as by direct invasion of its walls, the ureter became constricted, and hydronephrosis ensued in no less than 75 per cent. of all cases. Invasion of the vagina by cancer of the cervix occurred in all but 2·5 per cent. of cases; this was explained by the rich anastomosis of lymphatics between the cervix and upper segment of the vagina. Thus the excision of a wide cuff of vagina in Wertheim's operation removed a highly dangerous tissue. The bladder was involved in two-thirds of post-mortem cases, and the rectum in one quarter of the cases; while vesical perforation occurred in 44 per cent., and rectal perforation in 16 per cent. of cases. Free and timely removal of the upper segment of the vagina prevented the occurrence of these distressing and hopeless sequelæ.

Mr. C. P. CHILDE read a paper on Wertheim's Operation for Cancer of the Uterus. He based his remarks on 23 operations which he had performed. He had rejected no patient on account of age, the oldest operated upon being 65 years. The delay of patients in seeking advice was referred to, the average time from the onset of symptoms till patients came to operation being in his cases 9·4 months, and amongst those who had passed the menopause and in whom mistakes were therefore less excusable 9·2 months. Even amongst those who had applied within six months the disease had nearly always made considerable progress. He had had only one early case. After emphasising the necessity of examination under general anæsthesia and a microscopic confirmation of the nature of the growth in every case prior to operation, he next drew attention to the fact that in many advanced cases, especially in elderly women, the general health remained good. Some details and complications of the operation were illustrated by a reference to his cases. There had been one instance of ureteral fistula, due to wound of the ureter, which had been cured by subsequent lumbar nephrectomy. After alluding to implication of the bladder and rectum, he came to the important question of the routine removal of lymphatic glands, and condemned it on the following grounds:—(1) It must greatly prolong the operation and increase the primary risk; (2) inasmuch as glandular infection as a rule is late, the risk may frequently be added without any necessity for it; (3) as it is impossible to remove all the glands it is probably useless; and (4) where glandular infection has occurred, recurrence almost invariably takes place and life is not saved. Five patients had severe post-operative shock, none had died from it. He was of opinion that if cases were suitably selected, and the surgeon had had sufficient experience to perform the operation in a reasonable time, there was little to fear from shock. Sepsis was the most serious complication. It frequently attacked the abdominal wound, and primary union had only occurred in about one-half of his cases. Sepsis attacking the pelvic wound had accounted for the only two deaths in his series. His immediate mortality for all cases was 8·6 per cent. Mr. Childe finally contrasted the operation with vaginal hysterectomy in regard to its primary mortality and ultimate results. He thought the idea of the high primary mortality was exaggerated, and showed by a reference to his own cases and those of other operators that for like stages of the disease it was no higher than that of vaginal hysterectomy. It was the advanced cases which furnished the high mortality (about 20 per cent.), and these could not be attacked by the vagina at all. It was Wertheim's operation or nothing as far as radical treatment was concerned. For ultimate results, continental returns must be present be consulted, as the operation had not been performed long enough in this country to furnish the requisite data. By a reference to the work of many well-known continental operators, it was shown that there had resulted a percentage of cures and a prolongation of life such as the records of vaginal hysterectomy had not approached. In conclusion, Mr. Childe considered Wertheim's operation superior to vaginal hysterectomy in every particular for the following reasons: (1) It was exploratory in the first instance, and enabled the surgeon, after opening the abdomen, to decide with accuracy whether the case was suitable for radical treatment or not. 2. In cases comparable with vaginal hysterectomy its primary mortality was just as low. 3. It was a more scientific operation than vaginal hysterectomy, which was a shot in the dark. 4. It was on all fours with the more extensive operations for cancer elsewhere, which had been performed of late years, and which had given infinitely better results than the old partial operations. 5. There was evidence to show that it did give better results than vaginal hysterectomy. 6. If infected glands were present in early cases (though this was exceptional), it permitted of their removal. 7. It increased the percentage operability, and enabled more advanced cases to be dealt with. This he considered the least of its advantages. It was in the early cases that the good results were to be expected.—A good discussion ensued, to which the readers of the papers replied.

The following specimens were exhibited:—

Mr. J. D. BARRIS: Fibromyoma of the Uterus, which had caused acute obstruction of the small intestine.

Mr. DOUGLAS DREW: (1) Sarcoma of the Uterus; and (2) case of supposed Hermaphroditism.

Miss A. L. MCILROY: Hæmatosalpinx with Torsion of its Pedicle.

SECTION OF ANÆSTHETICS.

Hypnotism in Surgical Anæsthesia.

A MEETING of this section was held on Dec. 5th, Dr. W. J. MCCARDIE, the President, being in the chair.

Dr. EDWIN L. ASH read a paper on Hypnotism in Relation to Surgical Anæsthesia. The work of Dr. Esdaile, who served the old East India Company, he said, formed a starting-point from which to consider scientific work in this connexion. It was well known that he performed hundreds

[2] Reports of the Royal London Ophthalmic Hospital, vol. xiii., p. 248.

of operations on patients in the state of hypnosis in India. No one else had ever been able to repeat Esdaile's results. When a deep stage of hypnosis was obtained it afforded the condition of an ideal anæsthesia with no disagreeable preliminaries and no possible serious after-effects. But the difficulty was that the requisite state could only be induced in comparatively few people—roughly about 1 in 10 or 12. It was possible that some rapid, certain, and painless method of inducing deep hypnosis might some day be found, and then it was probable that this method would supersede all others for anæsthetic purposes. The theory of this process was obscure. Probably it was largely owing to concentration of the attention to some particular object or idea in the hypnotic state that consciousness to painful stimuli was lost. In hypnotic anæsthesia two factors have to be considered: 1. There was an "analgesia" due to the deep state *per se*. This was shown by blunting of perception to moderate stimuli—e.g., pin-pricks. But it was not protection against strong stimuli—e g., faradic brush. Therefore it was useless from a surgical point of view. 2. Anæsthesia produced by suggestion in the hypnotic state. This was reliable and to some extent controllable in satisfactory subjects. It was possible also to produce anæsthesia in some people who responded well to hypnotism by giving suggestions that were to bring about the required effect at some future date—that is, by post-hypnotic influence. This, again, was too uncertain to be of practical value in surgery. Consequently, the uncertainties and waste of time certain to ensue from attempting to make use of hypnotism for anæsthetic purposes placed it for the time being out of the range of practical politics. However, in the case of patients for whom a general anæsthetic was undesirable there was no reason why their suitability as subjects for hypnotic suggestion should not be tested some days before the date fixed for an operation. In any case, for urgent operations the method was quite inapplicable in the present state of our knowledge. Again, although hypnotism was so untrustworthy as an anæsthetic agent, there was a great field for the use of simple suggestion as an aid to anæsthetics. An arrangement by which a nervous patient about to be operated on could receive the benefits of "suggestion" for some time before the operation would unquestionably result in the anæsthetic being taken very much more satisfactorily than might otherwise be the case, and the advantages to the surgeon both during the operation and in the light of after-results would probably also be great.

Dr. C. LLOYD TUCKEY considered that to attempt to anæsthetise a person in an excited condition would in most cases be useless. Surgical anæsthesia had occasionally been produced by post-hypnotic suggestion alone, and suggestion without hypnotism was often sufficient to inhibit pain. He instanced an anæsthetist at a dental hospital who became very successful in gauging the susceptibility of persons to suggestion from their appearance, and could often produce anæsthesia in favourable cases by using an empty gas bag. Dentists had told him also that "Christian Scientists" could often stand the extraction of teeth without apparently feeling any pain. He considered that a "burly policeman" represented a type favourable to hypnosis.

Dr. S. H. NATHAN had also practised hypnotism fairly considerably. He found that the people who came to him to be hypnotised fell largely into two groups: first, highly neurotic individuals for whom hypnotism was a last resource; and secondly, persons who looked on it more or less as a joke. Neither of these groups represented favourable subjects. On one occasion when giving a demonstration on hypnotism he had seven cases from an institute for retired soldiers on whom to demonstrate. All seven were readily hypnotised. He considered that it was difficult to gauge accurately the degree of anæsthesia in a hypnotised person. A patient who had not responded to a pin-prick might shout out at an incision.

Dr. H. E. WINGFIELD had used hypnotism as an anæsthetic both in dental and confinement cases; in the latter it had certainly been of service. There were many curious and interesting points about hypnotic anæsthesia; general anæsthesia might be obtained or, when desired, one limb only might be rendered anæsthetic, rigidity appearing first and being followed by anæsthesia. A patient might be at the same time anæsthetic and hyperæsthetic in the same part; for instance, any *downward* touch on a limb might be unfelt, but the slightest *upward* touch be felt acutely.

The PRESIDENT discussed the question how far hypnotic suggestion might be used as an aid to ordinary anæsthesia—i.e., in diminishing after-effects, fear before an operation, or possibly enabling anæsthesia to be maintained with less anæsthetic, as in using morphia. He asked what was the effect of hypnosis as regarded the corneal reflex, the relaxation of the muscles, and the blood pressure.

Mrs. F. M. DICKINSON BERRY asked whether Dr. Ash considered that success or the reverse in hypnotism depended solely on the subject, or whether the hypnotiser was not also a factor.

Dr. ASH, in reply, said he thought suggestion should be a great aid to the anæsthetist, and the more suggestion the less chloroform. As regards after-effects, where they were due to toxic absorption, as was probably usually the case, they would not be affected by suggestion. Confidence in the result to be obtained on the part of the hypnotiser was certainly a factor in success, but beyond that he thought the hypnotiser was unimportant. There were certainly racial differences with regard to susceptibility to suggestion, black races being as a rule much more susceptible than white.

MEDICAL SOCIETY OF LONDON.

Acromegaly.

A MEETING of this society was held on Dec. 12th, Mr. CHARTERS J. SYMONDS, the President, being in the chair.

Dr. DAVID FERRIER, in the course of a paper on the Pathology of Acromegaly, said that in spite of all that had been written the points of agreement with reference to the pathology of acromegaly were still comparatively few, and that the more he studied the subject the more obscure it seemed to become. Acromegaly occurred most commonly about the period of adolescence and affected both sexes about equally. It varied in duration from a few years to 30 or more. The onset was insidious and the disease might exist for many years before its true nature was recognised either by the victim himself or his friends. The patient complained at first of various subjective symptoms, such as headache, pains and paræsthesia of the limbs, and general malaise. Sooner or later the characteristic changes became manifest in the head, hands, and feet. The hands became enlarged, the increased dimensions being due mainly to the skin and cutaneous tissues. Sometimes there was an increase in length, but more commonly the increase was in width, and the hands assumed a spade-like or battledore appearance. They were firm in consistence, the cutaneous folds exaggerated, and the fingers straight, and as large at the tips as at the base, constituting the so-called sausage-fingers. The enlargement did not usually extend beyond the wrist, so that it was all the more striking by comparison with the normal forearm. The feet were similarly affected; they were thickened, flattened, and the ridges and furrows markedly accentuated. The head was enlarged, and all the normal tuberosities and muscular attachments exaggerated, coarse, and rough. The face was oval, the forehead low and apparently receding, the orbits were thickened, the frontal and maxillary sinuses enlarged, and the zygomatic arches prominent. The body of the lower jaw in particular was hypertrophied, and the alveolar border extended beyond that of the upper jaw, constituting decided prognathism. The features were coarse, the nose, lips, and ears thickened, and the tongue over-filled the mouth, and tended to protrude between the teeth. The mucous membranes of the nose, pharynx, and larynx were redundant, and the voice was husky or hoarse. The neck was thick, and there was generally kyphosis in the upper dorsal region, and a tendency to protrusion of the lower end of the sternum, so that a Punch-like figure was developed. Vision was frequently impaired, more especially in the form of bi-temporal hemianopsy. Exophthalmos was common, and there might be ptosis or some other form of oculo-motor paralysis. The appearance of strength was illusory. The muscles were feeble and often wasted. The heart was weak and might be irregular, and there was a tendency to pant on exertion. Polydipsia and polyuria were common, and glycosuria had been observed in a large number of cases. Often there was a great tendency to somnolence. Impotence in the male and amenorrhœa in the female were the rule. The changes in the soft parts were largely due to hyperplasia of the connective tissues, and in the osseous skeleton to an exaggeration of the normal bosses, tuberosities, and roughnesses

which formed the points of the musculo-tendinous attachments. The periosteum was thickened. Osteophytes were common, and the vascular canals were numerous and dilated. The forms of enlargement of the pituitary body that had been found had been variously described as hyperplasia, adenoma, colloid degeneration, sarcoma, glioma, carcinoma, teratoma, and many others; but there was reason to believe that there had been great laxity in the nomenclature employed by different observers. The pituitary body was a small reddish mass, about ½ gramme or 7–8 grains in weight, filling the sella turcica, and attached to the infundibulum through a small opening of the pouch of dura mater in which it was enclosed. It consisted of two lobes, the anterior, somewhat bean-shaped, and the posterior, which fitted into the concavity of the anterior. The anterior was developmentally a diverticulum (Rathke's pouch) of the buccal ectoderm. That in time became constricted from the oral cavity by the development of the base of the skull, and the canal usually became obliterated. In certain cases, however, it remained patent, and formed the cranio-pharyngeal canal. It had been stated by Levi[1] that that was frequently, if not constantly, present in acromegaly and giantism, indicating that the basis of those conditions was probably laid down at a very early period of development, before the cranio-pharyngeal canal had become closed. At the pharyngeal end of that canal Erdheim, Haberfelt, and others had demonstrated the presence throughout life of a glandular structure similar to the anterior lobe of the pituitary and probably performing the same functions, and liable to the same diseases as the anterior lobe of the pituitary body itself. The existence of that pharyngeal pituitary body might perhaps explain some of the difficulties which had arisen in regard to the pathological findings. The anterior lobe was composed of epithelial cells arranged in trabeculæ, and surrounded by a rich network of thin-walled capillaries and lymphatics. The cells were of two kinds—chromophile and chromophobe—the former staining either with eosin or the basic dyes, the latter not. Intermediate forms were also described, but it was probable that they were not really different, but only different physiological conditions of the same cells. The posterior lobe was developmentally an evagination of that part of the embryonic brain which ultimately became the third ventricle. The cavity became obliterated in man, though in some animals, such as the cat, it remained patent. The posterior lobe was composed of connective tissue and neuroglia, but contained no true nerve cells. Between the anterior and posterior lobes there was a cleft, the remains of the original buccal diverticulum. The part of the posterior lobe adjacent to that cleft was covered by a special epithelium; it was called the pars intermedia. The cells of that epithelial layer somewhat resembled those of the anterior lobe, but they were less distinctly granular and were arranged in islets or nests, many of which were hollowed out and filled with a colloid-looking material. That colloid material was supposed by some to be the secretion of the pituitary cells, though the views were somewhat divergent on that point. It was assumed that the secretion of the anterior lobe passed directly into the blood-vessels, while that of the pars intermedia found its way through the posterior lobe into the third ventricle. Extirpation experiments had been carried out by various experimenters and on different animals and with most discordant results. Those were, no doubt, largely explicable by the differences in method and extent of the lesions that had been established. The symptoms resulting from complete removal of the pituitary body had been described under the name of cachexia hypophyseopriva. The chief symptoms of that condition were a lowered temperature, fall of blood pressure, spasmodic twitchings, and a peculiar arching of the back; the animal became lethargic, and ultimately passed into a state of deep coma. It had, however, been shown by Cushing and his colleagues, and his observations had been confirmed by Biedl, that the removal of the posterior lobe of the pituitary body caused no obvious ill-results. Complete removal of the anterior lobe alone, however, produced the same effects as the removal of the whole gland. Partial destruction of the anterior lobe in young dogs led to results of great importance in reference to a certain symptom-complex (Frohlich's syndrome) not infrequently observed in man in connexion with pituitary tumours. There was an increase of fat, which in some cases amounted to adipositas universalis, hypoplasia of the generative glands, and loss or diminution of sexual power. With that there was a condition of infantilism and retardation of development. Occasionally, also, there were polyuria, polydipsia, glycosuria, and falling out of the hair.

Dr. A. KEITH gave a lantern demonstration of the Features and Modes of Development of the Skeletal Abnormalities which characterise Acromegaly.

A short discussion followed, in which Dr. A. MACPHAIL, Mr. J. E. S. FRAZER, Dr. ROBERT JONES, and Dr. R. H. SCANES SPICER took part.

[1] L'Encéphale, May 10th, 1910.

HARVEIAN SOCIETY OF LONDON.

Treatment of Syphilis.

A MEETING of this society was held on Dec. 8th, Dr. M. HANDFIELD-JONES, the President, being in the chair.

Mr. J. ERNEST LANE read a paper on the Treatment of Syphilis, restricting his remarks to the position occupied by the arsenical compounds, atoxyl, arsacetin, soamin, orsudan, and the more recently introduced "606." Whilst admitting their undoubted value, he recalled the fact that irremediable blindness had followed the use of some of them, which had led him to abandon them. Speaking of "606" he deprecated the advertisement it had received in the lay press. He referred to the excellent results obtained with it by Professor Wechselmann, from whose description in the journals it might be imagined we had arrived at a new epoch in medicine. But there was another side to the picture. He thought that enthusiasts had greatly minimised the pain produced by the injection. Ehrlich himself now admitted that there were many conditions in which the employment of "606" was inadvisable. Two cases of blindness had been recorded and two others hinted at. Twelve deaths following its use were incontestable. Early recurrences of symptoms were frequent, and the drug had not been long enough in use for anyone to speak positively on the question of late recurrences. He had submitted some of his own cases to injection by Sir Almroth Wright and Mr. J. E. R. McDonagh. The results were in the main favourable so far as he could judge in so short a time, but no better than he would have expected from mercurial treatment. One case of syphilitic ulceration improved temporarily, but soon relapsed; another injection was given, followed again by improvement and other relapse, the ulceration spreading to twice its former size. The condition was now improving on intramuscular injections of grey oil. This case had been somewhat prematurely recorded in THE LANCET as one of the successes of "606." Another case was malignant syphilis which had resisted mercury and receiving no benefit from "606" ultimately died some ten weeks after the injection. Other cases were mentioned in which improvement was not particularly satisfactory, although the Wassermann test became negative. He showed a chart in which the temperature went up to 104°F. after the injection, and hyperpyrexia was present every evening for ten days following. Of his 17 cases five certainly called for no enthusiasm. Syphilis was a mild disease, generally perfectly amenable to mercury; intolerance of that drug was rare, and would be the only justification for looking elsewhere for a remedy. In appropriate cases "606" was a valuable addition to our therapeutical stock. Laboratory research in syphilis, as in other diseases, was of great importance, but should not replace the results of clinical experience.

Dr. W. D'ESTE EMERY then gave a brief outline of some of the modern ideas on the Pathology of Syphilis, dealing especially with the nature of the spirochæta pallida, the processes which took place in the body during the disease, and the question of immunity thereto. He dealt especially with the Wassermann reaction, claiming for his own modification the advantages of rapidity and accuracy. He urged particularly the importance of testing all cases quantitatively, and recommended the method of using various dilutions of a standard antigen, so as to determine the weakest by which the complement is completely absorbed. He also vindicated the use of methods depending on the absorption of the natural complement pre-existing in the blood, basing his experience on a study of over 500 sera. He believed that when a quantitative method was used and interpreted in the

light of the clinical history the percentage of error was extremely small.

Sir ALMROTH WRIGHT dealt with the matter from the laboratory standpoint. He considered that "606" undoubtedly caused the disappearance of the spirochæte and therefore cured syphilis, clinical manifestations to the contrary notwithstanding; these he thought were probably due to a secondary streptococcal or staphylococcal infection. He suggested that surgeons had a convenient conscience which allowed them to perform operations with a well-ascertained and sometimes high mortality but which did not justify their employing this remedy with its infinitesimal risks.

Mr. ARTHUR SHILLITOE related some remarkably successful results from the use of "606" in his practice.

Mr. CAMPBELL WILLIAMS drew attention to three deaths following the injection of "606" additional to the 12 mentioned by Mr. Lane, gave cases within his experience in which relapses had occurred, and criticised the so-called chemical constitution of "606." In view of the risks attaching to its use, he suggested a form to be signed by the patient for the surgeon's protection. Many of the cases reported as having been cured by "606" were nervous affections generally regarded as para-syphilitic, and on which theoretically it should have no action. If it were ultimately found to have this specific action they would have to alter their views as to their pathology.

Mr. LANE, in his reply, argued that there was no analogy between an operation performed for the cure of a serious, and possibly fatal, disease and the treatment of the mild type of syphilis present in this country.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

Municipal Control of Pulmonary Tuberculosis.

A MEETING of this society was held on Dec. 9th, Dr. J. F. J. SYKES, Vice-President, being in the chair.

Dr. WILLIAM ROBERTSON, medical officer of health of Leith, introduced a discussion upon the Municipal Control of Pulmonary Tuberculosis. After stating that Leith had followed Brighton in adopting the principle of utilising disused wards at an isolation hospital for the treatment of phthisis, he expressed the opinion that every sanitary authority ought to adopt some scheme for dealing with the disease, and that neglect to employ some form of administrative machinery was evidence of a lack of appreciation of present-day hygiene. He then reviewed the advantages of compulsory as opposed to voluntary notification of phthisis. In Scotland sanitary authorities were empowered to make the disease notifiable, but they must first prove to the satisfaction of the Scottish Local Government Board that active steps would be taken to supplement notification. This implied the appointment of a special staff and the reservation of beds for the treatment of late or early cases. He considered that the best form of notification should be framed on the lines of the Sheffield sections with an additional provision requiring removal of cases which the medical officer of health considered were unsuitably housed or where precautions advised were not being adopted. In Leith, where compulsory notification is in force, those cases only were visited opposite whose names there were no stipulations made as to visitation, &c. There were now treated in an idle pavilion of the Leith isolation hospital about 20 patients. Advanced cases were not accepted, and every case notified for removal was examined by the medical officer of health or his assistant so that a standard of suitability had been established. Occasionally patients had been retained for nearly a year, but in the interval they had been taught to be useful members of the hospital staff. The average period of residence was three months, and this, especially with the very early cases, proved ample. In connexion with advanced cases which remained at home the contacts were sometimes received in the hospital for out-door treatment. The pale-faced children of consumptive parents were those selected for residence in the open-air ward. No patient was allowed to be idle. In Dr. Robertson's opinion, if phthisical patients are permitted to idle about they develop into perfect nuisances, and one grumbler will exert a most pernicious influence over his fellow patients. The men saw wood, do odds and ends at painting, assist the gardeners in digging and weeding. Each week one man is detailed to look after the meals. The women sew, weed the garden, keep the bungalow clean, and assist in the ward kitchen.

Some lantern slides were shown, among which was one depicting four disused tramway cars which were used as shelters in the grounds of the Leith hospital.

In the discussion which followed Dr. SIDNEY DAVIES said that notification of phthisis should be invited and not compelled. At Woolwich he had had double the number of cases notified since he had been able to offer sanatorium treatment. He emphasised the importance of providing work for patients after they had left the sanatorium.

Dr. J. E. SANDILANDS maintained that no municipal machinery for dealing with tuberculosis could be considered complete unless a tuberculosis dispensary were provided. The medical man who carried out the dispensary treatment should give his whole time to the work and should follow up the cases in the homes of the patients.

Dr. R. DUDFIELD considered that the real need for sanatorium treatment was not yet known and that dispensaries might make sanatoriums unnecessary.

Mr. E. H. T. NASH looked upon voluntary notification as a farce, and thought that from the point of view of the great cost involved sanatorium treatment was not justified. He advocated the establishment of dispensaries in which tuberculin treatment could be carried out.

Dr. WILLIAM BUTLER referred to the importance of increasing the resisting powers of the people by improved hygienic surroundings.

Dr. A. H. BYGOTT advocated greater coöperation between the Poor-law and public health services, and pointed out that boards of guardians never supervised the sanitary conditions of those to whom out-relief was given.

Dr. W. CAMAC WILKINSON considered that until tuberculin treatment was systematically used in dispensaries these institutions would not be so successful as they should be.

Dr. W. H. SYMONS urged the importance of securing the early treatment of patients.

Dr. A. MEARNS FRASER pointed out that as there seemed to be some doubt as to the power possessed by a municipality to spend money on a dispensary, any apparent illegality could be removed by putting a bed in the institution and calling it a hospital.

LIVERPOOL MEDICAL INSTITUTION.

Exhibition of Cases and Specimens.—Pathogeny of Eclampsia.

A PATHOLOGICAL meeting of this institution was held on Dec. 1st, Dr. T. R. BRADSHAW, the President, being in the chair.

Dr. EDGAR STEVENSON showed five cases of Melanotic Sarcoma of the Choroid which had occurred in his practice within 12 months. The eyes, beautifully mounted by Mr. Harcourt, demonstrated the various stages to the fourth stage, involving the orbital tissues.

Dr. K. A. GROSSMANN showed a Melanotic Sarcoma of the Ciliary Region; and Dr. C. LEE a similar tumour of the eye.

Mr. W. THELWALL THOMAS and Dr. R. S. TAYLOR showed: 1. The Right Lobe of the Thyroid Gland removed from a man, aged 37 years, with severe Graves's disease. The mass weighed 6 ounces and had the usual microscopical appearances. The symptoms greatly improved in three weeks. 2. An Adenoma of the Thyroid from a girl aged 17 years. Microscopically it was very cellular and resembled an immature or fœtal thyroid tissue.

Dr. A. STOOKES showed a Uterus with Adeno-carcinoma of the Body, Interstitial and Submucous Fibroid; also a Uterus with Adeno-carcinoma of the Body simulating a Fibroid.

Mr. ARTHUR EVANS and Dr. P. HICK showed an Epithelioma of the Arm, which had arisen after a slight injury in the substance of the triceps muscle apparently from an epithelial cell-rest or dermoid. Prickle cells were demonstrated in the growth. The arm was amputated; there were no growths elsewhere.

Dr. J. M. HUNT and Mr. R. E. KELLY showed a Tuberculous Larynx in an infant, aged 21 months, with tubercle in both lungs and cavities at both apices. The parents were healthy and the child was breast-fed.

Mr. KELLY showed a specimen illustrating the association of Appendicitis and Undescended Testis on the same side. It illustrated the difficulty in diagnosis between

torsion of the undescended testis and appendicitis. Microscopically the appendix somewhat resembled mucoid cancer.

Mr. R. CRAIG DUN and Dr. ERNEST GLYNN showed a Malignant Tumour of the Right Suprarenal Gland removed post mortem from a girl, aged 5 years. The child showed marked precocity of development, her appearance being that of a girl of 15 years. There was profuse growth of hair on the scalp, upper lip, and pubes.

Mr. K. W. MONSARRAT and Dr. GLYNN showed Metastases of Lympho-sarcoma in both Suprarenal Glands secondary to growth in the Mediastinum.

Dr. GLYNN showed lantern slides of two cases of Multiple Myeloma in which the growth was of the plasma-cell type.

Dr. N. P. MARSH, Dr. J. CUTHBERT MATTHEWS, and Dr. T. J. WILLIAMS showed Blood Films from two girls, aged 3 and 10 years respectively, who had died from acute lymphoid leukæmia of the small lymphoid-cell variety. There was general enlargement of the glands. They both died within eight weeks of the onset of symptoms.

Mr. G. P. NEWBOLT and Dr. D. MOORE ALEXANDER showed a Tumour of the Brain excised from the right Rolandic area with temporary improvement. Death took place from recurrence. Dr. Alexander thought the growth resembled a neurocytoma, as described by Homer Wright.—Dr. GLYNN regarded it as a glioma sarcomatosum.

Mr. NEWBOLT and Dr. ALEXANDER also showed sections of Acinar Carcinoma in a woman, aged 38 years, and of Fibro-cysto-adenoma of seven years' history; and a painting of Malignant Pustule successfully treated by excision, local injections of carbolic acid, and intravenous injections of Sclavo's serum.

The PRESIDENT showed a specimen of Cerebral Hæmorrhage associated with Granular Kidneys and Hypertrophied Heart in a girl, aged 20 years. She had suffered from headaches for a year. He also showed a specimen of Hæmorrhage into the left lateral lobe of the Cerebellum in which there were no paralysis, contracted pupils, and a temperature of 105° F. The pons was normal; there was no blood in the fourth ventricle. There had only been one case of cerebellar hæmorrhage in the records of 1800 necropsies at the Infirmary in 14 years.

Dr. H. LEITH MURRAY read a paper on Some Points in the Pathogeny of Eclampsia. As the result of microscopical examination he considered the toxin to be one containing hæmolytic (cytolytic), hæmagglutinative and endotheliolytic elements, and pointed out how a polymorphism of the lesion was produced by interaction of these. He admitted a difficulty in deciding to what extent the lesions in the central nervous system were due to direct intoxication (neurotoxin) or to vascular disturbances. Certain experimental and natural conditions were compared with eclampsia: (1) the lesions produced by the inoculation of certain immune sera; and (2) the lesions and effects on the circulation produced by snake poisoning. The extraordinary similarity in type of toxin between this latter and the eclamptic was detailed, and the variety of such toxin was emphasised. Evidence was adduced that this comparison was no mere artificial one in the results. Burgers had lately demonstrated the presence in maternal serum of a cobra-hæmolysin-inhibiting factor. Dr. Leith Murray had confirmed this in several cases, but had found it absent in a case of eclampsia. Further results were promised later. He suggested the experimental use of Calmette's antivenene in eclampsia, injecting it subcutaneously in the pre-eclamptic stage and intravenously in the eclamptic stage. The injections could do no harm—The PRESIDENT congratulated Dr. Leith Murray on his interesting and original paper. He thought that an appropriate serum might be found for puerperal eclampsia; but doubted whether antivenene was likely to be useful. The various venoms were much more closely related to each other than any of them were to the toxins causing eclampsia, and yet these antisera were practically useless against any but their own particular venom. The action of venom neurotoxin was always paralytic and that of eclampsia was for the most part convulsivant.—Dr. W. BLAIR BELL said that there was little doubt that whatever the primary cause of eclampsia was, the ultimate results in fatal cases were due to the establishment of a secondary vicious circle whereby the changes in the liver led to an intoxication of the patient by the products of its disintegration. He did not think it likely that antivenene would prove specific, but he was much impressed by Dr. Murray's interesting arguments in favour of the serum.—Dr. STOOKES, Dr. GEMMELL, and Dr. GLYNN also spoke.

Exhibition of Cases.—Liquid Air and Carbon Dioxide Snow in the Treatment of Skin Diseases.

A MEETING of this society was held on Dec. 8th, Dr. T. R. BRADSHAW, the President, being in the chair.

The PRESIDENT showed two patients the subjects of Congenital Heart Disease: 1. A woman, aged 38 years, married 15 years and with three healthy children. Cyanosis had been present since infancy. There were also clubbing of the fingers, polycythæmia, and a systolic murmur over the ventricles. The heart was not much enlarged and the patient enjoyed fairly good health. 2. A youth, aged 17 years. There was no cyanosis, but dyspnœa on exertion. The heart was much enlarged and a rough systolic murmur and thrill were heard over the pulmonary area.

Dr. NATHAN RAW showed: (1) A case of Graves's Disease much benefited by rodagen treatment; (2) a patient with Diabetes Mellitus, Tabes, and Double Perforating Ulcers; and (3) a patient with Traumatic Hemiplegia and Aphasia, with total destruction of the left motor area and Broca's convolution.

Dr. A. GORDON GULLAN showed a child, aged 3 years, suffering from Various Hæmorrhages from the Mucous Membranes and Kidneys. The child had been fed upon tea, bread and butter. Dr. Gullan considered the case to be one of scurvy rickets.

Dr. G. G. STOPFORD TAYLOR and Dr. R. W. MACKENNA, amongst other cases, showed a patient with Bronzed Diabetes, and a case of Primary Chancre with Secondary Eruptions. Within a week after one injection with "606" these signs had disappeared

Dr. STOPFORD TAYLOR and Dr. MACKENNA communicated a paper on Liquid Air and Carbon Dioxide Snow in the Treatment of Skin Diseases. They had used these agents with much advantage for over three years. Liquid air was approximately two and a-half times colder than carbon dioxide snow. It was easily applied on a piece of cotton wool twisted round a cane, and the application should be of a shorter duration than the snow. The drawbacks to its use were its cost and the fact that it evaporated very quickly. The snow, on the other hand, was easily procurable and cheap, and the pencils of the snow were easily prepared and applied. They had designed a series of moulds at a trifling cost. The application of either the air or the snow was not very painful except near some superficial nerve, or over a bone, carious teeth, or on the ears. The therapeutic use depended upon the reaction, which varied according to the nature of the tissue, the duration of the application, and the pressure applied. The reaction consisted in the copious outporing of serum with the formation of a bulla; there was marked diapedesis of leucocytes, the connective tissue becoming swollen and enlarged; many of the capillaries became thrombosed, but the epithelium sustained the chief damage in that in most cases it was completely destroyed. The after-treatment was simple. The bulla might be left unbroken for a few days and then clipped off and the resulting raw surface dressed with some simple dressing. Healing was somewhat slow but restitution was complete and sometimes surprising. Dr. Taylor and Dr. MacKenna gave their experience in the treatment of nævi, moles, X ray warts, lupus erythematosus, rosacea, and lupus vulgaris. Their best results in lupus vulgaris were obtained by linear scarification followed in a day or two by refrigeration with snow. Refrigeration should not be used in old people or in those suffering from broken-down constitutions or from arterio-sclerosis or nephritis. The paper was illustrated by lantern slides and the exhibition of patients and a practical demonstration of the methods of application.—Dr. W. C. Oram mentioned a case of Nævus of the Upper Lip in a child, aged 3 months, which had been much improved by the application of the snow; the child did not seem to suffer much discomfort.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Dec. 2nd, Dr. Phineas S. Abraham, the President, being in the chair.—Mr. J. E. R. McDonagh read a paper on Practical Experience with Ehrlich's New Specific for Syphilis. He commenced by

stating how Ehrlich came to discover "606," and then went on to say that as atoxyl and arsacetin produced amaurosis, it was feared that "606" might do the same, but since more than 20,000 injections had been given without this occurring, and since the drug seldom gave rise to toxic symptoms, its general employment had been considered absolutely safe. Although the intramuscular route was at first very largely employed, there was absolutely no doubt that the intravenous method was preferable. The patient suffered only a slight inconvenience in the form of a rigor or two and vomiting a few hours after the injection, compared with the severe pain which the intramuscular injection gave rise to. Of still greater importance was the fact that the organisms were killed at once, whilst with an intramuscular injection the absorption was slow and some of the arsenic might become completely encapsuled, thereby increasing the risk of a second injection, should it be necessary, owing to the fact that the encapsuled arsenic might at any time become liberated and with the arsenic given at the second injection amount to a toxic dose. The best method of procedure was to give an intravenous injection, and if the symptoms did not show marked improvement by the end of the third day an intramuscular injection should then be given. If the lesions improved, one should wait for about four weeks to be guided by a Wassermann's reaction as to whether a second injection (intramuscular) was necessary or not. Cases were described of sleeping sickness, tuberculous forms of leprosy and leukæmia, psoriasis, and lichen planus in which "606" had exerted some beneficial action. Other infections superadded on syphilis, such as tubercle, streptococci, and staphylococci, were often markedly improved by "606." A case was shown in which extensive phagedæna had been checked by one injection. Several cases were shown illustrating the cure produced in all the stages of syphilis. A case of lichen syphliticus, the most resistant form to mercury, was cured by one injection of "606" without any scars resulting. Malignant cases of syphilis associated with tuberculosis were improved beyond recognition. The most striking cases were those who had suffered nerve paralysis from syphilitic meningitis. Almost complete power in the muscles supplied by these nerves had been regained. One case of tabes was cited, in which both the Argyll Robertson pupil had disappeared and the knee-jerks returned, and also morning erections which the patient had not had for four years. Seventeen cases of tabes had been injected, but only three improved insomuch as the lighting pains had disappeared. Cases of general paralysis of the insane before degeneration had commenced improved considerably. Chronic superficial glossitis, which hardly ever responded to mercury, was greatly benefited by "606." In all, Mr. McDonagh had treated 130 cases, three of which had recurred, two of these being cured by a second injection, and five only did not respond to "606."—Dr. Abraham regarded this method as the most important advance in the treatment of syphilis. He called attention to the smallness of the scars as compared with those following the ordinary methods of treatment.—Mr. Arthur Shillitoe drew attention to the difficulty in diagnosing syphilis by the Wassermann reaction owing to varying results given when different techniques were employed.—Captain L. W. Harrison, R.A.M.C., said that "606" had been used at the Rochester Row Military Hospital for some months, and was given by intravenous injection, using an ordinary transfusion apparatus with a short pointed needle. A second injection was given when the clinical signs did not disappear sufficiently rapidly or when the Wassermann reaction remained positive after three or four weeks.—Mr. H. W. Bayly said the permanency of cure by "606" had yet to be established and the evidence of the Wassermann reaction was very conflicting.—Mr. R. B. Etherington-Smith said that Mr. McDonagh had given injections of "606" to several cases of his and the immediate results had been wonderful, notably so in one of gummatous meningitis of ten years' standing.—Mr. Aslett Baldwin and Dr. T. Grainger Stewart also discussed the treatment.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Dec. 1st, Dr. F. Hinds, the President, being in the chair.—The following resolution was carried unanimously:—

That this society earnestly requests the town councils of Brighton and Hove to pass and enforce a by-law against spitting on the pavement, and to take steps to lessen the great and insanitary nuisance caused by dogs on the public footpaths.

—Dr. E. Weatherhead showed a case of Ossifying Enchondroma growing from the second cervical vertebra in a woman aged 49 years. It was first noticed when the patient was 9 years old, and had reached its present size at about the age of 25 years, since when it had ceased to grow. There was a very large, painless tumour at the back of the neck which caused but little inconvenience beyond slightly restricting movement of the neck. An X ray photograph, taken by Dr. C. F. Bailey, showed well the structure of the growth.—Dr. H. Galt showed a photograph, taken a week before death, and a section of one of the glandular masses in the neck, from a case of Hodgkin's Disease in a boy aged 10 years. The section showed characteristic appearances—viz., almost complete destruction of the normal lymphoid tissue, and its replacement by an endothelial proliferation within a fine reticular stroma. Several large "lymphadenoma cells" were also seen. The capsule of the gland was intact. Dr. Galt in addition showed a small Ovarian Dermoid Cyst removed by Mr. H. Nethersole Fletcher from a woman aged 24 years. It contained five teeth, numerous hairs, and the usual buttery material. The surface was lined with squamous epithelium, and beneath this were numerous sebaceous glands and hair follicles, but no ovarian tissue.—Dr. E. R. Hunt read notes of a case of Recurrent Carcinoma of the Parotid Gland treated with Coley's fluid. The patient was a man, aged 54 years, who had a large malignant growth on the right side of the neck, apparently originating from the parotid gland. Twenty-five years ago he had been operated on for a growth in the neck, which had recurred 12 years later. It had slowly become larger and more painful, and was now quite inoperable. Injections of Coley's fluid were given, and as the result of these the greater portion of the growth had sloughed and the pain and pressure symptoms were relieved. The patient had a peaceful end.—Dr. A. W. Williams read notes of a case of Gonorrhœal Keratosic Cones of the Feet and Hands. He said it was a very rare condition and only occurred in cases in which there was other evidence of gonococcal septicæmia, such as arthritis or tendo-vaginitis. It showed itself in two forms, both of which were present in this case: (1) diffuse thickening of the horny layer of the foot, and (2) the development of transparent horny cones and domes, mostly on the hands and feet, but sometimes in other places. Most of the cases are recorded in continental literature, probably because foreign dermatologists often include gonorrhœa in their specialty. The history of the present case was as follows. He was an in-patient at the Sussex County Hospital under the care of Dr. E. Hobhouse, suffering from gonorrhœal arthritis. Whilst undergoing treatment he developed the peculiar condition of the skin referred to. No gonococci were found in cultures from the greyish putty-like material found under some of the horny masses.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 24th, Dr. Samson Mathews, Vice-President, being in the chair.—Dr. A. E. Naish, in a paper on the First Month of Infancy, pointed out that it was common knowledge that infants were weaned unnecessarily, but owing to a lack of an intimate knowledge of the causes which led to it the custom was still prevalent. Depressed and fissured nipples or chronic mastitis were not necessarily a contra-indication to breast-feeding. In the infant, crying, vomiting, and wasting were the usual reasons given for weaning. He showed that any of these symptoms might be fallacious, and that it was especially important in a wasting child to ascertain whether this condition was due to a defect of the milk or not. In the latter case the wasting was usually aggravated. He showed that the influence of the nurse was often against the continuance of breast-feeding and that many arguments she used were fallacious. In referring to cases of so-called congenital atelectasis, he brought forward examples where the infants were at first strong and healthy and in whom the onset of the symptoms dated from the fifth or sixth week. Such cases seemed to have a familial incidence. He thought that in these cases the collapsed lung was probably not present from birth and that possibly the disease might be a disorder of the normal respiratory reflex.—Mr. Graham S. Simpson showed specimens and read notes of three cases of Nephrectomy. 1. Suppurating Hydronephrosis from a woman aged 55 years. Pus could be seen coming from the right ureter. Skiagraphy showed two shadows in the right kidney region; a diagnosis of calculous pyonephrosis was made. No stones, however, were found on excision. 2. A small Fatty

Kidney, containing a calculus, from a boy aged 16 years. He was admitted to hospital for flexion of the left hip and spine, but no psoas abscess could be felt. After he had been in a fortnight a large psoas abscess developed which was opened and drained. Two months later, as the patient did not improve, he was persuaded to have another operation when this kidney was found and removed. 3. A Tuberculous Kidney removed from a man aged 22 years. He complained of great frequency in micturition and pain in the right loin. There was intermittent pyuria but no tubercle bacilli were found in the urine. Skiagraphy showed a shadow just below an enlarged right kidney. Chromo-cystoscopy was difficult as the bladder bled easily, but the right ureter was watched for two minutes and no urine was seen to come out. The kidney was excised as it felt like a bag of pus. It contained numerous tuberculous abscesses but also a fair amount of kidney substance. The patient's output of urea was very small for the first few days; it then increased till about the eighth day, after which it rapidly fell. He died from uræmia a fortnight after the operation.—Dr. Stanley Riseley showed: 1. A man with a Corneal Ulcer due to an injury by a chipping of brass. 2. A girl with Marginal Blepharitis of old standing. All the lashes were now lost and there were opacities on both corneæ. 3. A case of Subacute Glaucoma with a chronic conjunctival discharge making it dangerous to operate. 4. A case of Trichiasis for which Arlt's operation had been done on both eyes.

Reviews and Notices of Books.

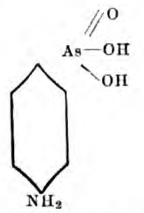
Die Experimentelle Chemotherapie der Spirillosen (Syphilis, Rückfallfieber, Hühnerspirillose, Frambösie). (Experiments in the Chemical Treatment of Spirillum Infections (Syphilis, Relapsing Fever, Fowl Spirillosis, Yaws)). By PAUL EHRLICH and S. HATA. Five plates. Berlin: Springer. 1910. Pp. viii.—164. Price 6 marks (6*s.*), paper; 7 marks (7*s.*), bound.

THIS little book, which is shortly to be published in English, gives a most instructive account of the researches which led to the announcement of "Ehrlich-Hata 606." In the first part Hata describes his investigations planned to determine the best therapeutic agent for destroying spirilla parasitic in the blood. They could only be attacked, as Ehrlich had shown, through their chemoceptors. Of these they have many, but in the present study only those receptors or chemoceptors came to be considered which manifested a great affinity for, a greater disposition to combine with, the radicals of the chemical substances (drugs) used than did the receptors of the tissues of the host. In other words, Hata was seeking for the treatment of these infections a drug which should attack the spirilla more energetically than it attacked the patient, should poison them rather than their victim. Accordingly, he endeavours for each animal, for each parasite, for each drug, to determine the ratio:—

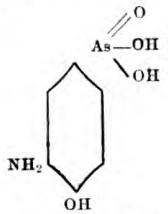
$$\frac{C}{T} = \frac{\text{curative dose}}{\text{tolerated dose}} = \frac{\text{dose sufficient to destroy all parasites.}}{\text{maximum dose which will not kill patient.}}$$

If a drug is to be of use in clinical medicine this ratio should be one-third or less, and this condition, it is claimed, has been thoroughly fulfilled by the dioxydiamidoarsenobenzol "606." Very oxidisable this is, Hata says, and therefore it is only sent out in exhausted glass tubes. Itself insoluble in water, its hydrochlorate does dissolve, giving a very acid solution, too acid to be injected. If to this normal caustic soda solution be added a precipitate will be thrown down, which may be separated by the centrifuge, and then, while still moist, it can be dissolved in a very little of the alkaline solution and is now fit to be injected.

In the second part of the book Ehrlich tells how he came to devise "606," why it has its power, and what he hopes it will achieve. Laveran had stated in 1903 that arsenious acid had an action upon trypanosomes, and in the same year Ehrlich and Shiga examined atoxyl, but set it aside as they found it had no action on trypanosomes *in vitro*. In 1905 Thomas and Breinl of the Liverpool School of Tropical Medicine reported that atoxyl had good therapeutic effect on trypanosome-infected animals. So Ehrlich took atoxyl up again, and with Bertheim found its chemical constitution had been misunderstood, and that it really was a paramidophenylarsenate:—



From this by oxidation, first with nitrous, then with nitric, acids, and by subsequent reduction, they obtained metamidoparaoxyphenylarsenate:—



As the arsenic here is five-valent the substance is not very poisonous. On the other hand, the large dose required to free mice from trypanosomes may suffice to cause destruction of the auditory and visual nuclei, so that the mice suffer from tremors and are named "dancing mice." Further reduction still, produces a molecule with trivalent arsenic uncombined with oxygen, more poisonous to spirilla, less hurtful to higher animals, and chemically more stable. This is the diamidodioxyarsenobenzol. The first of these arsenical preparations of Ehrlich to be used extensively was arsenophenylglycin in sleeping sickness. It is dangerous, but so is the disease. It should be given in one or two large doses, the highest the body can stand, so that it produces the maximum effect on the parasites before it has had time to damage the tissues of their host. A similar aim is before us in giving "606," which was introduced in June, 1909, as a remedy for relapsing fever; its effect on syphilis has only become known since. All arsenic preparations are toxic, but Ehrlich holds that in "606" this toxicity is held in check by the amido and hydroxyl groups in the molecule, and that this drug is as safe as mercury, and safer than grey oil. Its administration may cause severe pain (one man has died from shock), and it should not be given where a rise of blood pressure may do harm—e.g., in aneurysm and heart affections, nor in paralyses and optic atrophy; it clears up optic neuritis and renal affections of specific origin. It has been used in 10,000 cases without, it is said, any serious consequent complications, and the dose may go to 22 grains without danger. It produces, Ehrlich says, antibodies in the milk and serum of patients; it excites rapid absorption of syphilitic exudations and stimulates the growth of epithelium; and he recommends it for use specially in cases of malignant and ulcerating syphilis, in psoriasis palmaris, and in cases that cannot take mercury, or take it with little or no benefit. It produces its effect most rapidly when administered intravenously; this should be followed by a subcutaneous or intramuscular injection two days later. As it very rapidly heals mucous patches and ulcerations of the mouth, it will materially diminish in future the spread of the disease.

We do not give more space to this very original book, the English translation of which will be widely read, because our

columns have reported in full so many actual experiences of the treatment. The authors also report successful employment of "606" in relapsing fever in Cairo and yaws in New York.

Ehrlich has never asserted that the results of treatment by "606" were permanent, whatever may have been hoped, and since this book was published articles have appeared in Germany urging that ordinary cases of syphilis should be submitted to the usual mercurial routine with doses of "606" two or three times to accelerate the effects of treatment. From neither one nor the other, nor from both, can we at present promise a permanent cure. Yet Ehrlich and Hata deserve our gratitude, they have so enormously increased our power of dealing with this intractable disease.

Aspects of Death and their Effects on the Living, as Illustrated by Minor Works of Art, especially Medals, Engraved Gems, Jewels, &c. By F. PARKES WEBER, M.A., M.D. Cantab. London: T. Fisher Unwin. 1910. Pp. 160.

THE contemplation of death as a condition, state, or event, which will indubitably happen to everyone, has from the earliest times been a factor in human life. Not merely the fact, but the knowledge that death must come, has affected conduct, literature, and art more widely, perhaps, than anything else. Both those who believed in a future life and those who considered death as the end of all things have ruled their own lives, and those of their opponents when they were in a position to do so, from a consideration of death, for the appalling cruelties committed in the name of religion, when reduced to their common denominator, practically depend upon the fact that it was necessary to behave in a particular manner during this life, than which there was no other, or so to live here with a view to the conditions after death. The literature about or in connexion with death is endless. We need only here refer to two instances where both writers were medical men—namely, Henry Vaughan, in his poem "Friends Departed"; and Sir Thomas Browne, in his magnificent prose poem, entitled "Hydriotaphia." Another medical man, Dr. F. Parkes Weber, has now taken up the subject from a different point of view—namely, the consideration of death as exhibited in minor works of art.

Dr. Weber is known as an accomplished numismatist, and within quite a short space of time as the donor of a fine collection of medals to the British Museum; he is therefore able to treat his subject with the knowledge of an expert. The first part of the work is a general introduction to the whole matter; the second is an analysis of the various aspects of death, with the mental attitudes towards death, in order to show the headings under which the illustrative works of art may be grouped; the third part is devoted to the consideration of the medals and coins; and the fourth to gems and jewels. Dr. Weber has collected a wonderful amount of information, and the value of his book is much increased by the illustrations which he gives of coins, medals, gems, and pictures dealing with the matter in hand. On p. 14 he refers to the story of the "trois morts et les trois vifs." We might add to his examples the picture by Rossetti, entitled "How they Met Themselves," which has obviously the same meaning, although "themselves" are not represented as dead. On p. 41 he gives the inscription, "Mors sceptra ligonibus æquat," and its well known English equivalent by Shirley. Dr. Weber remarks that the quotation is ascribed to Lucan. We have been unable to trace it in the Pharsalia, the only poem of Lucan which has come down to us, but as the sentence occurred in a fourteenth-century wall painting it may have been quoted from Lucan's other poem on the burning of Rome, which is now lost. Claudian, however, in his "De Raptu Proserpinae," Book II., line 302, says, "Omnia mors aequat," which expresses a similar feeling, and we may also refer to the inscription on the tomb of Fair Rosamund:—

> "Hic jacet in tumulo Rosa mundi non Rosa munda:
> Non redolet sed olet quae redolere solet."

Sepulchral monuments designed to show the contrast between the dead and the living were common in the Middle Ages, and Dr. Weber gives an illustration of the well-known monument of Archbishop Chichele in Canterbury Cathedral. It is interesting to remember that something of the same idea is expressed in the only monument from old St. Paul's which survived the fire—we mean that of Dr. Donne, who is represented in his shroud. It is placed in the south choir aisle.

We are grateful to Dr. Weber for a painstaking and interesting piece of work, both from the literary and artistic point of view.

The Nutrition of the Infant. By RALPH VINCENT, M.D. Durh., M.R.C.P. Lond., Senior Physician to the Infants' Hospital, Westminster. Third edition. London: Baillière, Tindall, and Cox. 1910. Pp. 342. Price 10*s.* 6*d.* net.

OF all the numerous substitutes for the natural breast-feeding of infants, percentage or laboratory feeding is the one which is capable of the most careful and scientific adaptation to the needs of the infant. Its elaboration in America by Dr. T. M. Rotch was undoubtedly a notable contribution to the important subject of infant feeding. In this country, in spite of the ardent championship of Dr. Ralph Vincent, it has only been employed to a comparatively limited extent. In this book, which has now reached its third edition, Dr. Vincent gives a very interesting and lucid account of this method and of the principles upon which it is based.

He first discusses at considerable length the composition of human milk, giving the results of numerous analyses by different authorities, thus affording an approximate standard for comparisons. The management of the lactating woman is then considered, and general rules are given in regard to diet, exercise, and other conditions influencing the function of lactation. Cases are described illustrating the care and management of conditions of disordered lactation. The chemical composition of cow's milk is then studied and the differences between human and cow's milk are considered. The function of the extractives present in milk and the influence they exert upon nutrition are discussed.

In regard to substitutes for breast feeding, Dr. Vincen uses the term "substitute feeding" for wet-nursing and for modified cow's milk, restricting the term "artificial feeding" to those methods where food mixtures are made with products artificially prepared by manufacturers. He describes the methods of preparing percentage milks adapted to different ages and to different conditions. This method of feeding he describes as "combining clinical elasticity with scientific precision." While admitting its value, we must confess that the objections of its complexity and cost, which Dr. Vincent does not attempt to deny, seriously militate against its general adoption at present. The general question of the milk-supply is considered in a separate chapter, and an earnest plea is registered for milk commissions to ensure a pure milk-supply on the lines of those already in action in some American towns. A chapter is also devoted to the heating of milk and the changes induced by it. Boiling and sterilisation are strongly condemned, and Dr. Vincent states that he now uses unheated milk mixtures, simply warming to blood heat immediately before administration. He therefore emphasises the importance of securing good pure fresh milk. Other matters discussed are the chemistry of infantile digestion, the diet of the infant in relation to growth, and the effects of variations in the individual constituents of the diet. A

general consideration of the normal development of the infant, including its weight, muscular and nervous functions, the special senses, and dentition, is also given.

The remainder of the book is devoted to a study of the effects of errors of diet upon the digestion and nutrition of the infant. The various gastric and intestinal disorders are described and the appropriate treatment is set forth. Zymotic enteritis or infantile diarrhœa is dealt with at some length. Dr. Vincent maintains that an essential factor in the development of the disease is that the characteristic properties of the milk should have been destroyed by heat, by preservatives, or by some other means. Descriptions of infantile atrophy, of rickets, and of scurvy are given, and the prevention and treatment of these conditions are discussed.

Dr. Vincent's book is a thoughtful and practical work on the subject with which it deals. It abounds in useful information, and is obviously the outcome of special experience. Although some of his views will not find general acceptance, they demand consideration, since they are based upon a practical study of the principles involved. The book is written in an easy and readable manner.

LIBRARY TABLE.

Transactions of the American Dermatological Association at its Thirty-third Annual Meeting held in Philadelphia, June, 1909. Official report of the Proceedings, by GROVER W. WENDE, M.D, secretary. Pp. 289.—Much valuable work has been accomplished by American dermatologists, and some of the most interesting discoveries are usually reserved for the annual meeting of the Dermatological Association. This report of the proceedings of last year's meeting, which has just come to hand, contains so much that is new and important that it is difficult to pick out what is the most valuable content of this interesting volume. Three papers connected with psoriasis deserve mention. Dr. S. Pollitser has written on the etiology of the disease, Dr. J. F. Schamberg on the parasitism of psoriasis, and Dr. W. F. Breakey on some unusual cases of psoriasis. We agree with Dr. Pollitser's conclusions that psoriasis is most probably due to an external microbial infective agent. Dr. J. A. Fordyce's study on the lichen group of skin diseases will well repay perusal, and the admirable photoprints accompanying it can but enhance its value. Dr. H. H. Whitehouse has applied the Wassermann test in some cases of scleroderma, and he is inclined to suggest, from the fact that in the six cases in which the test was applied three gave a positive action, that syphilis may be found to be an etiological factor in the production of scleroderma. A very interesting paper is that written by Dr. Douglas W. Montgomery and Dr. Howard Morrow on the increase of certain contagions following the great fire in San Francisco. The chief contagious skin lesions were impetiginous in nature.

War, Police, and Watch Dogs. By Major E. H. RICHARDSON, late 45th Regiment (Sherwood Foresters), Fellow of the Zoological Society. Edinburgh and London: William Blackwood and Sons. 1910. Pp. 132. Price 5*s.* 3*d.* post free.—This book is an endeavour to bring before the public the value of certain services which the dog is fitted to perform for man. These include the tracking and arrest of criminals, a service in which dogs are now regularly used in Germany, the searching out of wounded soldiers on the field of battle, the carrying of messages and despatches, and the use of dogs as sentries and scouts. A chapter is devoted to the watch-dog in the house, and some useful information is given concerning the best methods of utilising a dog for this purpose. The foot of the staircase in the hall, as being probably the centre of the house, is recommended as the best position for the dog at night, where he should be chained up beside a comfortable bed placed there for him. The use of dogs in war for searching out the wounded seems justified by the results which followed the use of some of Major Richardson's dogs in the Russo-Japanese war. On this point Captain Persidsky writes as follows: "In finding the missing and wounded, with which the millet-fields are strewn, nothing has succeeded like our pack of seven dogs. The English ones are especially intelligent. In our last engagement 23 men were found in unsuspected places." Major Richardson recommends the collie and retriever as the breeds of dogs best suited to ambulance work in temperate climates. He is making a trial of bloodhounds for hot countries. Directions are given as to the training and equipment of dogs for ambulance work. The book concludes with a chapter on scent, in which is contained an account of some experiments performed by the author and others in an attempt to elucidate the nature of this faculty. Certain general conclusions are reached in regard to the best condition of soil and atmosphere for the preservation of scent, but it has not been possible to draw any particular conclusions or to dogmatise, and the subject remains much in the condition in which it was. The book contains much useful information of the practical sort.

The Building and Care of the Body. By COLUMBUS N. MILLARD. New York: The Macmillan Company. 1910. Pp. 235. Price 2*s.* 6*d.*—This is a fair example of the innumerable little works upon hygiene, both personal and general, which have of late years been conspicuous features of the semi-medical press. It is apparently written for both teachers and children, and not, we gather, for those of even a modest degree of education, for many words are given phonetically, as well as spelt in the ordinary way—thus, contraction (kŏn-trăk'shŭn). The book commences with simple lessons in physiology, and then goes on to treat of food, air, and the effects of pure and foul air on the health. Then follows a section on personal hygiene, common accidents, and contagious diseases. There is a glossary at the end. We cannot conscientiously say that the book is of much value.

JOURNALS AND MAGAZINES.

Journal of Pathology and Bacteriology. (Official Organ of the Pathological Society of Great Britain and Ireland.) Vol. XV., No. 1, containing 19 plates, one of them coloured. Published from the Department of Pathology, Cambridge University. Pp. 136. Price 7*s.* 6*d.* net.—In the current number of this journal M. A. Ruffer and A. R. Ferguson (Cairo), in a Note on an Eruption resembling that of Variola in the Skin of a Mummy of the Twentieth Dynasty (1200–1100 B.C.), describe and illustrate the results of a histological examination of an Egyptian mummy which showed a bullous eruption within the epidermis, as in small-pox, with many bacteria in the dermis. It is very interesting to note the extraordinary "keeping" powers of these bacteria, and even the tissues in which they are embedded. In Observations on the Changes produced in the Blood and Bone-marrow by Hæmorrhage and Blood Destruction, C. Price Jones (London) gives a description and classification of the marrow cells of the rabbit, tracing both the erythroblastic and leucoblastic series to a primitive lymphoid cell which, along with Buchanan, he derives by budding from the giant cells. By emulsifying the fresh marrow in 10 per cent. neutral glycerine films may be made; these are stained by Jenner's stain, and show many details which cannot be seen by section methods. The proportions of the different kinds of cells may be determined by counting these films. The marrow of rabbits, bled and killed after various intervals and examined, shows that this method brings

out well the erythroblastic reaction, and that when the nucleated red cells in the marrow are increased there is also an increase in the lymphoid cells from which they are derived. J. S. Dunn (Glasgow), in a paper on the Oxydase Reaction in Myeloid Tissues, demonstrates that the synthesis of indophenol from alpha-naphthol and dimethyl-paraphenylendiamin is produced by neutrophile and eosinophile leucocytes, and less rapidly by large hyaline leucocytes and by myelocytes in marrow and leukæmic blood. Mast-cells produce this less readily, as do some myeloblasts (non-granular myelocytes). The reaction is not given by lymphocytes or red blood cells, nor by normal tissue elements except the epithelium of the parotid and lacrymal glands. The oxydase in myeloid cells is not destroyed by the paraffin process; sections are best preserved in water-glass. It is soon destroyed by hydrochloric and oxalic acids, sublimate, picric acid, and phenol, but not by formalin, hydrocyanic acid, osmic acid, or resorcin. The reaction is of great assistance in determining the distribution of myeloid tissue. W. M. Scott (Edinburgh) gives an admirable summary of the present knowledge of a difficult subject in his paper, Anaphylaxis in the Rabbit; the Mechanism of the Symptoms. Rabbits may be sensitised to foreign serum or blood corpuscles, milk, bacteria, or vegetable proteins. The dose required is much larger than where guinea-pigs are used; the sensitive state develops after ten days, lasts another ten days, and then rapidly declines. If the animal survives an anaphylactic shock it is refractory for about four days and fully sensitive again on the seventh day. Passive transference of the sensitive condition is best effected if the serum from a sensitised animal and the foreign protein are injected into a fresh animal simultaneously. There is a great variation in the degree to which individual rabbits can be sensitised; this varies with the amount of precipitin developed in their serum. The prostration and muscular paresis of the anaphylactic shock are due to a great fall of blood pressure; the portal area is intensely congested; and there is paralysis of the capillaries as well as the arterioles. The arrest of respiration is due to commencing œdema of the lungs. In the blood there are delayed coagulation and imperfect fibrin formation, a marked leucopenia; precipitin disappears completely from the serum and complement is much diminished; bacteriolytic and opsonic powers are decreased. There is some evidence of injury to the endothelium of the blood-vessels. The author attributes the anaphylactic illness to the interaction of precipitin and antigen; there is no precipitin for several days after recovery, and when it reappears the animal again becomes sensitive. The rectal temperature falls during the illness, and the gaseous exchange is diminished by about 25 per cent. Under the title Syphilis of the Lungs, with the Report of a Case, A. R. Robertson (Harvard) describes a case showing multiple gummata in the middle and lower lobes of both lungs with syphilitic aortitis and an aneurysm of the aorta. No spirochætæ could be found in either aorta or lung. J. Lorrain Smith (Manchester) continues to report observations on the Staining of Fat by Nile-blue Sulphate. Criticising Pappenheim and others who have supposed that the red colour in which Nile-blue stains neutral fat is due to metachromatism, he points out that this is incorrect. Watery solutions of Nile-blue sulphate stain fat or fatty acids red because they contain the oxazone which has arisen by oxidation of the oxazine base; they stain fatty acids blue because the colour base (oxazine) unites with the fatty acid to form a blue soap-like compound. He thinks that confusion has arisen because the oxazone and the oxazine base are both red substances and that both stain fat red because they are more soluble in fat than in the dye solution. C. McNeil (Edinburgh), in an interesting paper, discusses the Resistance of Human Red Blood Corpuscles in Health and Disease to Hæmolysis by Saponin; with a Comparison of Saponin and Hypotonic Salt Solution Hæmolysis. He investigated the hæmolytic effect of saponin on washed red cells suspended in 0·85 per cent. salt solution at 37° C.; the degree of hæmolysis was measured by using a uniform dose of red cells (50,000,000) and counting the number left undissolved at the end of the experiment. He finds that the resistance is diminished in jaundice, anæmia, and high fever; in diabetes it is increased. The resistance to hypotonic salt solution is increased in jaundice and diminished in anæmia. Experiments *in vitro* show that red cells kept for some time in a slightly hypertonic salt solution develop a much increased resistance to hæmolysis by hypotonic solutions (0·42 per cent. NaCl), their resistance to saponin remaining unchanged. The high resistance to hypotonic hæmolysis in jaundice is due to the plasma being somewhat hypertonic; the low resistance to saponin hæmolysis to the bile salts having combined with some of the lipoids of the red cell envelope. W. B. M. Martin (Glasgow) contributes an article on the Gonococcus and its Differentiation from Allied Organisms. He contends that the reaction of the medium is most important when the gonococcus has to be cultivated. To a beef broth are added 0·5 per cent. disodium phosphate ($NaHPO$), 1 per cent. peptone, and 2 per cent. agar; the reaction is adjusted to 0·6 per cent. acid to phenolphthalein (titrated hot). On to the surface of a sloped tube are run three or four drops of sterile human serum which has been heated to 57° C. for one and a half hours. On this medium gonococci grow readily. They are easily killed by cold, and it is therefore of great importance to make the cultures direct from the living bodies and to transfer to the incubator as soon as possible. Descriptions are given of the cultural appearances of gonococcus, meningococcus, and M. catarrhalis. The author finds that the ferment actions on dextrose, lævulose, maltose, and cane sugar afford important and useful differential tests. Complement deviation and bactericidal action with immune animal sera are also of service in diagnosis. The three organisms are undoubtedly distinct, though doubtful strains are sometimes met with. Abstracts of an interesting series of papers contributed as the Proceedings of the Pathological Society of Great Britain and Ireland complete a valuable number.

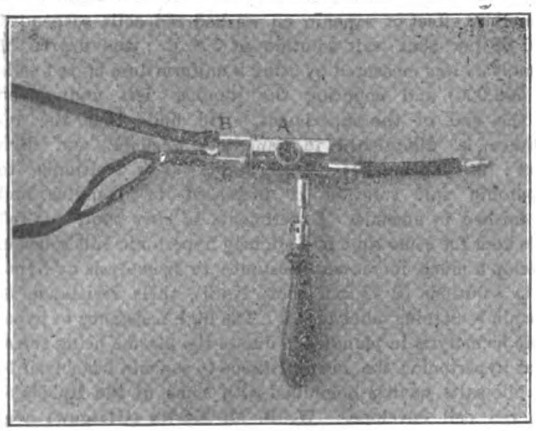
New Inventions.

NEW MEDICATED VAPOUR APPARATUS.

A NEW hot-air and hot medicated vapour apparatus has been made for me by the Sanitas Electrical Company, Limited, of New Cavendish-street, London, W., which I have found extremely useful in the treatment of chronic suppuration in the middle ear, in the antrum of Highmore, and in the frontal sinus. As will be seen from the accompanying illustration, it consists of a small cylinder A, 1¾ inches long and 1 inch diameter, fixed on a handle. On one side of this is a small mica window, through which the amount of heat produced in the coils of wire contained in the cylinder can be determined by watching the glow produced, from dull to bright red. At B is the inlet tube through which either air or medicated vapour is passed, and at C is the outlet tube. At D are the terminals connected with the wire coils, which can be attached either to a Multostat or to any accumulator working a cautery.

The following are the advantages possessed by this little instrument: It is extremely light—4 ounces with cords attached. It can be used either for hot air or for hot

medicated vapours—e.g., formalin, creasote, carbolic acid, &c. The heat is under perfect control, as is also the amount of air or vapour given. The hot air or medicated vapour can be given equally well through the external auditory meatus,



the Eustachian catheter, the frontal sinus catheter, or through a Lichtwitz's cannula into the antrum of Highmore. The price of the instrument is £2 10*s*.

J. GAY FRENCH, M.S. Lond., F.R.C.S. Eng.

Harley-street, W.

THE LONDON COUNTY COUNCIL AND MEDICAL AFFAIRS.

AT the meeting of the Education Committee of the London County Council on Dec. 14th the receipt of two letters from the Board of Education was reported—one with reference to the Council's reply to the Board's criticisms of the arrangements for medical inspection in the metropolis,[1] and the other on the proposals for making a first experiment in dental treatment at the Deptford Children's Centre and the Poplar Hospital for Accidents.

The Reorganised Scheme of Medical Inspection.

With regard to the Council's reorganised scheme of medical inspection, the Board remarked that the question whether the arrangements were adequate and satisfactory was one which could not be considered merely in relation to the number of officers employed and the number of inspections which each officer might be able to carry out, and the Board was not yet in a position to express any considered opinion on the question. The Board reminded the Council that its investigations had disclosed a great lack of that organisation, direction, and control of the medical staff which was essential in dealing with the enormous area and numbers involved in the case of London schools, and particularly when the work was attempted by means of part-time school medical officers. The Board could not find in the Council's reply to its previous criticisms any clear indication of the means by which the Council was remedying, or was proposing to remedy, these defects The effectiveness of the increased staff described must depend upon the instructions under which the scheme was worked henceforward and the manner in which those instructions were observed in practice. The Board presumed, though this was not stated, that detailed instructions had been given already by the principal school medical officer to secure that the work of inspection was being regularly and continuously carried out on a definite system designed to cover the ground effectively, and that such a system was in actual operation all over London. The Board could only express the hope that when the working of the new arrangements came to be examined it would be found that the urgent needs of the metropolis in respect of medical inspection had been adequately provided for at last.

[1] THE LANCET, Nov. 5th, 1910, p. 1364.

The Experiments in Dental Treatment.

With regard to the proposals for dental treatment, the Board wrote that, while it recognised it was essential to proceed tentatively in attacking the problems with which the Council was confronted in the sphere of medical treatment, there existed an obvious and relatively pressing need that some early action should be taken to deal with those defects which seriously threatened the physical welfare of the children. The Board had been willing, therefore, to sanction certain experiments in the matter of medical treatment. It was necessary, however, that the Council should understand that the Board now felt it imperative to adopt a more critical attitude in regard to the Council's proposals, and, in particular, that the time was approaching when it would be unable to sanction the adoption of further schemes, even on an experimental basis, unless each particular scheme of treatment proposed had been (*a*) carefully thought out as regards all important details; (*b*) was so framed as to furnish full and definite information on the particular matters with which the experiment was concerned; and (*c*) had been devised so as not to hamper or embarrass the local authority in adopting any comprehensive system of treatment which might commend itself to it in the future. The Board could not too strongly impress on the Council that any satisfactory system of treatment, of necessity, must rest and be contingent upon adequate arrangements, in real working order, for regular medical inspection. As regards the proposals now in question the Board had considerable doubt whether the three conditions just laid down were satisfied even approximately. For instance, it was doubtful whether the Council, in deciding to apply the dental treatment scheme to children of 8 to 9, had selected the most appropriate age-group for conservative dental treatment. The Board noted, of course, that one of the Council's reasons for selecting this group was that arrangements were contemplated for the general medical inspection of children at this period, and that it was expected that the school doctors would be able then to select children for dental treatment. For two reasons, however, the Board doubted the wisdom of basing dental treatment upon the general medical inspection of a third age-group. In the first place, it might prove impossible for the authority to inspect this group in addition to entrants and leavers. The latter was compulsory, but the optional inspection might have to be postponed or only partially carried out. In the second place, experience showed that the findings of school doctors engaged in general inspection could not be adopted in any considerable degree as the basis for arrangements for conservative dental treatment. Reliance on this source of information involved risk of embarrassment and early confusion in the working of the scheme, and a probable failure to discover many cases which needed, and would repay, conservative treatment.

In view of these and other considerations the Board had hesitated to sanction the two proposals now before it, and the Council must not expect that the Board would be prepared to sanction for general or permanent adoption a scheme of dental treatment framed on the lines of these proposals. As they were limited in scope, of local application only, and admittedly put forward as tentative and experimental, the Board had decided to sanction the proposals, since at this juncture it was reluctant to interpose obstacles to any scheme which, however imperfect, offered a prospect of furnishing data for the Council's future guidance. This sanction would be for 12 months and was subject to facilities of inspection being afforded to the Board's medical officers and to a report by the Council upon the general working of the schemes.

The Recommendations of the Royal Commission on the Feeble-minded in Relation to Lunacy Administration in London.

Debate on this matter was postponed last week in order that opportunity might be afforded for discussion when members absent on election business could be present. But the London County Council on Dec. 13th passed the whole of the recommendations of the General Purposes Committee[1] without further consideration.

[1] THE LANCET, Dec. 10th, p. 1717.

THE LANCET.

LONDON: SATURDAY, DECEMBER 17, 1910.

"Mania Contionabunda."

MEDICO-PSYCHOLOGY, responsive to what one of its continental votaries calls "the hyperæsthesia of an over-wrought civilisation," is enlarging its terminology coincidently with its subject matter, and now we have the "mania contionabunda" (the "haranguing disease") added to the "mania errabunda" (the "running-to-and-fro disease"), both of them epidemic throughout the British Isles. From Land's End to John o' Groat's, from East Lynn to Galway, the whole country is either on the tramp or on the stump, locomotion personal or vicarious lending itself to oratory shrill or subdued, diffuse or concise. Nor is there any lack of auditors, of ἀκροαταί, whether ξυνειδότες or not, till the mania in question will only cease by wearing itself out, in sheer exhaustion alike of haranguer and hearer. Meanwhile the thoughtful spectator is inclined to ask himself:—Who or what is the gainer from this babel of tongues?

If no one attempted to speak in a public way unless he had something useful and opportune to impart, the tumult and the din would subside to something like the "morne silence" of the French poet, to our manifest advantage. When the prince of orators could say of himself, as he saw his sagacious, sententious antagonist rise to reply, "See the dissector of my arguments gets up"; and when that same antagonist, on the populace applauding him, would turn round to a friend and ask, "Have I said anything particularly irrational?" we may well imagine what a DEMOSTHENES or a PHOCION would think of many a platform declaimer in the day now passing! For, with the fewest possible exceptions, we have only in his declamation what the Scotch professor remarked in a loquacious student, "a determination of words to the mouth," a "relaxation of the mental sphincter," a paralysis of that inhibition which sane and circumspect thinking imposes on the tendency to utterance. One of the many proofs of DICKENS'S power of psychological delineation is his character of FLORA in "Little Dorrit," the amiable, expansive lady whose talk is a palmary specimen of the inhibitory paresis referred to, talk which runs on as continuous as it is inane, sentence suggesting sentence by the faintest links of association, often merely verbal in their affinity. The diction, too, of the platform declaimer is typical of the thought it conveys—diction drawn from what Mr. GEORGE WYNDHAM, in his contrast between NORTH'S "Plutarch" and the version of the brothers LANGHORNE, has called the "charnel-house of decayed metaphor"—diction deliciously quizzed by D'ISRAELI in "Tancred" when, weary of "leaving no stone unturned" before "embarking on the next feature on which this question hinges," he remarks that John Bull is sorely in want of a new set of similes. That greatest parliamentarian of the Victorian era, WILLIAM EWART GLADSTONE, though himself often enough incurring D'ISRAELI'S satire, conveyed a rebuke to much of the "eloquence" of his day, when in his "Homer" he defined the requisites of the public speaker. He must never be over the heads of his hearers; he must have the power of making them feel and think with him; he must have the "obstetric art" (the τέχνη μαιευτική) of SOCRATES, evoking from them sentiments, sympathies, conclusions latent in their minds, but only awaiting the magic touch of his "delivery" to start into life; or in GLADSTONE'S own felicitous words, "What the orator receives from his audience in mist, he gives back to it in rain." Such was the oratory of a PERICLES in the palmy days of Athens; of a CHATHAM in the British Senate; and of a LINCOLN in the great Republic of the West; not the incontinent cerebration which passes for oratory on the modern platform, where, but for the reporter amending him, the orator would turn out as ungrammatical, not to say incoherent in phrase, as but for the same press he would often be poor in ideas.

In a memorable passage published 60 years ago CARLYLE sounds a characteristic note of warning: "Be not a Public Orator, thou brave young British man, thou that art now growing to be something; not a Stump Orator, if thou canst help it. Appeal not to the vulgar, with its long ears and its seats in the Cabinet; hate the profane vulgar and bid it begone! Appeal by silent work, by silent suffering, if there be no work, to the gods who have nobler than seats in the Cabinet for thee!" A warning this as relevant in the day now passing as it was in 1850—a warning intensified by the deterioration of parliamentarianism abroad with its free fights in the Chamber, its scuffles in the lobbies, and its duels in the open—a warning not without significance nearer home, where, particularly north of the Tweed, the pulpit itself is degraded by becoming "a coign of vantage" for partisan pleading, till protests against the practice are to be read *passim* in the public prints—nay, are to be heard from scandalised worshippers in the house of prayer itself! The haranguing disease is on us.

Diet in Disease.

IT is related of GRAVES, in a well-known anecdote, that he said, "If you are at a loss for an epitaph to be placed on my tomb, here is one for you, 'He fed fevers.'" This was some 60 years ago. The two generations of physicians that have practised since his day have, with few exceptions, followed his example. With the very large amount of experimental work that has been done in recent years, more particularly in Germany and America, in the study of the chemical processes of nutrition, we are now much better able than our predecessors were to supply the needs of the patient, without unduly straining his powers of digestion and assimilation. The two perfect foods with which Nature has herself provided us still form, as no doubt will always be the case,

the staple invalid dietary; but inasmuch as milk and eggs are adapted for the needs of the healthy organism, it is not flouting Nature to modify their composition when using them for the sick. Thus the dilution of milk with water, the addition to it of an alkali, its modification so as to form whey, are obvious modes of adapting it to the impaired digestive powers of the fever patient. Such a patient is unable to deal with solid food of any description; and much ingenuity has been shown in the endeavour to extract from the meat that forms a part of the ordinary diet in health so much of the nutritive protein material as may be obtained in a fluid and assimilable form. Beef-tea has, however, long been considered to be little more than an agreeable stimulant, and, however carefully prepared, to have small direct nutritive value, though it may be a means of assisting the assimilation of nutrient materials. We know, at any rate, that it does stimulate, it is readily absorbed, and the contained salines (potassium chloride and sulphate) are of some use. Gelatin, in the old-fashioned form of calves'-foot jelly, at one time considered highly nutritive, has since been relegated to an inferior position as a mere placebo, but it has now been shown to be, though not actually a tissue-former, a protein-sparer of considerable value; it is a means of saving the albuminous waste from the tissues, and "from this point of view cannot be too strongly recommended." We quote here from Dr. CHALMERS WATSON, who, in a work just published,[1] has brought together in compendious form the results of recent research and clinical observation.

Under the conditions that obtain in a normal state of health the relative worth of the various food substances may be readily ascertained by a computation of their calorie values, as to which there is now a general agreement amongst analysts and physiologists; and in this way standard dietaries have been framed for the occupants of public institutions, and for large bodies of persons, such as soldiers and sailors, inmates of workhouses, prisons, and so on. But for the sick the diet has to be adjusted in each instance from a knowledge of the digestive and assimilative powers of the individual patient; little clinical importance can be attached to the calorie value of the food; it is the personal factor that has to be considered in each case. Moreover, in practice it is not unusual to find *a priori* physiological considerations to some extent falsified. Dr. WATSON mentions the group of meat infusions, juices, and extracts as being largely administered, and their usefulness universally admitted. We are aware that many authorities deny that these substances have any physiological value at all worth mentioning; and judging from their chemical composition alone this would appear to be the case, but they continue to be employed, both in hospitals and in private practice; and we believe that the medical profession generally have a high opinion of their value in cases of fever, exhaustion, and acute illness generally. The impressions derived from clinical experience have not, at any rate as yet, given way before the hard facts of laboratory experiment.

[1] Food and Feeding in Health and Disease, a Manual of Practical Dietetics. By Chalmers Watson, M.D., F.R.C.P. Edin. London and Edinburgh: Oliver and Boyd. Pp. 638. Price 10s. 6d. net.

On the other hand, in recent years immense benefit in treatment has resulted from the increase in knowledge regarding the bio-chemical processes that are carried on in the alimentary tract. Bacterial activity in the intestine may be greatly modified by alterations in the diet: a restriction in the protein ingested diminishes putrefactive decomposition, and a reduction in the carbohydrates lessens the development of injurious acids and gases due to fermentation. The contents of the intestine cannot be made aseptic, but dietetic regulation can materially reduce the formation of toxic products. Much attention is nowadays paid to oral sepsis, often due to accumulation of decomposing particles of food between the teeth which eventually leads to a septic condition of the gums and mouth generally. Whether occurring in the mouth or in the intestine sepsis may lead to impairment of health; it arises largely from causes connected with the diet, and by means of dietetic regulation may in most cases be overcome. One particular affection, arterio-sclerosis, though not at first sight connected with conditions of alimentation, being frequently dependent on prolonged high blood pressure, is considered in some cases to result from a poison formed in the intestinal tract; this may arise either from abnormal digestion of proteins (especially of animal origin in constipated subjects); from abnormal fermentation of carbohydrates, or from an excess of nutrient material beyond what can be dealt with by the organism—that is, over-eating. Restriction in animal protein food is indicated, and also careful regulation of the bowels. In functional heart derangements, so often due to indigestion, dietetic treatment is obviously of great importance; but in chronic organic disease of the heart also—for which HAYLE WALSHE, a paramount authority in his time, stated that no constantly applicable rules could be laid down, except that moderation is important, especially in fluids—Dr. WATSON now suggests fairly precise directions, carbohydrate food being especially restricted. It is enough merely to mention gout, diabetes, and asthma as instances of pathological conditions largely dependent on variations from the normal working of the alimentary system, and capable, therefore, of being influenced by dietetic regulation. We have heard much of the advantages of a purin-free dietary: they are undoubted. Dr. WATSON ascribes them rather to the simplicity of the system, which enables it to be carried out more rigidly, and therefore more successfully, than other dietaries framed on conventional lines, than to any specific action associated with the absence of these substances. But in this as in most other advances in dietetic treatment the main feature in the practice of the present day is the application to therapeutics of the large additions that have been made in recent years to our knowledge of the bio-chemical processes carried out in the small and large intestines. Much has been learned, but with increase of knowledge comes fuller appreciation of the complexity of the metabolism at work. What formerly appeared simple, on further investigation is found to be quite the reverse. But, step by step, progress is being made, and, as we have tried to indicate, the therapeutist is keeping in close touch with the physiologist.

Reform at the University of Oxford in Relation to Medicine.

ON April 28th, 1909, the Oxford University Press issued a Memorandum drawn up by Lord CURZON OF KEDLESTON, Chancellor of the University, in which he discussed various proposals and suggestions for reforms dealing mainly with the constitution of the University of Oxford and with certain financial questions. The Hebdomadal Council thereupon held a series of meetings, and eventually passed a number of resolutions pledging itself to a definite scheme of policy upon almost every debated issue of University reform. Committees were appointed to take evidence and to consult authorities with a view of framing plans for the carrying out of the aforesaid resolutions. The reports of these committees were debated line by line in full Council, and the result of this deliberation was the comprehensive report of the Hebdomadal Council which was issued some months ago. No doubt statutes based upon this report, the debate on some of which has already begun, will continue to be submitted during the next few terms to Congregation and Convocation.

On the appearance of Lord CURZON'S Memorandum we commented upon features of it which appeared to us to have a special bearing upon the interests of the medical profession.[1] We pointed out that if, in accordance with the views of the more ardent reformers, all members of Convocation other than those in residence were for certain purposes to be struck off the roll of voters, such disfranchisement would have a most disastrous effect upon the future of the Oxford Medical School, because the majority of Oxford men who seek a medical degree study their medicine outside of Oxford. If such disfranchisement, then, were carried into effect, all the 190 or so medical members of Convocation who are non-resident, and who are either engaged in teaching or have the interests of medical education at heart, might be deprived of any voice in the management of the medical school. We further pointed out that Lord CURZON'S eminently judicial presentment of the various plans for reform did not even take into consideration any reform of this kind, and we merely mentioned it as being the view of one school of reformers. We are glad to see, then, that by the report of the Hebdomadal Council it is proposed to leave the constitution of Convocation practically untouched, so that it will be still the supreme legislative authority of the University. It is suggested, however, that its action should be restricted in certain cases, so that where Congregation has voted unanimously on any statute in its final form, such shall become law without being referred to Convocation, and also that any statute which shall have been passed in its final stage by a two-thirds majority of Congregation shall take effect, unless Convocation rejects it by a two-thirds majority of those voting. The voting power of the medical members of Convocation outside of Oxford would therefore remain practically unaltered. We understand that even this alteration of the powers of Convocation would require an Act of Parliament, and therefore assume that this part of the scheme will not be proceeded with. That portion of the report which is of most direct interest to the medical profession is embodied in a statute, where it appears as Sectio VIII., "Of the Faculty of Medicine and of the Board of that Faculty." By this section it is proposed that the Faculty of Medicine should receive special treatment, and, unlike any other faculty, should possess a General Medical Electorate consisting of all Oxford graduates in medicine who are members of Convocation. The Board of the Faculty is to include *ex officio* members—namely, the various professors and readers in the faculty and the representative of the University on the General Medical Council; nominated members, three in number, who are to be chosen by the Board of the Faculty of Natural Science as representing physics and chemistry, zoology and botany, and organic chemistry in relation to physiology and medicine; elected members, six in number—i.e., three being members of, and elected by, the faculty, and three being members of, and elected by, the General Electorate aforesaid. At least two of the latter shall be engaged in teaching one or more of clinical subjects of the faculty. There may be in addition not more than four co-opted members, of whom at least half shall be engaged in teaching clinical subjects. The three members of the Board elected by the General Electorate shall be elected annually, and nominations must be made by not less than six members of that Electorate. Among other powers, the Board of the faculty is to have power to institute a University Medical Students Register. This scheme, to which the deliberations of committees of the Hebdomadal Council and of the Council itself have given rise, may, of course, undergo alterations at the hands of Congregation and Convocation, but as it stands we welcome it as an honest and painstaking attempt to bring the teaching of medicine at, and the Medical School of, the University into touch with those medical graduates whose lot in life it is to teach and to practise medicine without the walls of their University.

The provision of the General Medical Electorate is, in our opinion, a valuable one, and we earnestly hope that this part of the scheme may pass without serious amendment. It is a scheme which possesses, or should possess, the rare excellence of reconciling the two diverse parties—viz., the ardent reformers and those who wish to maintain the mediæval methods of government and constitution of the University. The former should welcome it, inasmuch as it provides that those engaged in the teaching and practice of the subject of a faculty should be those who have the right to vote upon, and to take part in, matters affecting that faculty. To the latter it should be no less welcome in that it is a return to the mediæval idea that all the members of the "universitas," or guild of teachers, should be consulted before a new candidate was admitted to their number. In the beginning the University of Oxford was simply a guild of Masters of Arts and the votes of all the Masters had to be taken before a new Master was admitted. And when other faculties came into existence the consent of the Masters was still necessary, and in theory is still asked at Congregation by that curious, but—if rightly understood—dignified, survival the Proctors' walk. The calling into the counsels of the Faculty of Medicine all the graduates in that Faculty is therefore not so much an innovation as an expansion of one

[1] THE LANCET, May 29th, 1909.

of the oldest of University customs, for although the Medical Electorate as such will not be consulted as to admission of candidates to a degree, yet its members will have a voice in their teaching and training for a degree in medicine.

Annotations.

"Ne quid nimis."

THE GENERAL ELECTION AND PUBLIC HEALTH.

THE occurrence of general elections in relatively rapid sequence is not in the interests of public health. At no time, indeed, can it be said that a general election is conducive to physical well-being, since it is a time of some tension—it involves certain work generally carried out under trying circumstances which are not calculated to influence the health favourably. The general election is a time, for example, when great meetings are held; vast concourses of people are brought together in a confined space in which, in most instances, the call for an unlimited supply of pure air is not met; diseases chiefly of the respiratory order are consequently easily communicated and spread. "I caught a cold and sore-throat at the political meeting last week," is an observation commonly overheard just now. Again, there is the street meeting, which, although the air may be fresh, is held sometimes under conditions of a most exacting kind on the health. Crowds of eager voters will be found huddled together listening to political arguments in pouring rain or in the blast of a biting wind, and is it matter for wonder that a good percentage of the audience gathered together under such circumstances contracts respiratory trouble, neuralgia, and rheumatism? Then either the exuberance or depression of the spirits dependent upon the success or failure of the party to which they belong leads many individuals to alcohol, the political clubs and the village public-houses are crowded, drinks are indulged in to console on the one hand or on the other to celebrate success, and the cause of health is badly served. The rowdyism of the modern election is of a very mild type compared with that of the days of George II., vividly illustrated by Hogarth in his "Election Series," though discreditable events have been freely reported during the past ten days; but physical violence appears to have given way to a policy of wilfully misrepresenting facts. It has not been uncommon to see two newspaper bills side by side with diametrically opposed statements set out in big type upon them. We believe veritably that rowdyism was preferable to this crude mendacity. A broken head may be a more definite medical lesion than an affronted intelligence, but the irritation that has been caused by partisan journalism during the last fortnight has told on the nerves of the nation much as an epidemic might have done.

THE MEDICAL DIRECTORY, 1911.

THE annual Medical Directory[1] for 1911 has been issued by Messrs. J. and A. Churchill and fully sustains the reputation that the previous 66 issues have achieved for it. Reference to the table summarising the geographical distribution of the profession shows that the total increase of registered practitioners for the past year is 173. London shows a decrease of 12 and the services of two, an increase in the other sections being shown as follows: Provinces, 153; Wales, 22; Scotland, 11; Ireland, 1; while those resident abroad number exactly the same as in the previous year. The total number of registered practitioners is 40,642, distributed as follows: London, 6415; Provinces, 17,721; Wales, 1336; Scotland, 3958; Ireland, 2724; abroad, 5188; and the services, 3300. To the customary useful information concerning sanatoriums, institutions, laws affecting the profession, climatic resorts, &c., there have been added a new list of coroners, which occupies over four pages; a summary of the law as to cremations "in view of the steady increase of the number of cremations"; and information concerning the motor-car and petrol rebates allowed by the Finance Act to medical practitioners, details of which have already appeared in THE LANCET. The list of British health resorts, compiled by Mr. Norman Hay Forbes, F.R.C.S. Edin., which formed a new feature in last year's Directory, has been thoroughly revised, and its scope has been enlarged so as to include the principal continental spas and climatic health resorts, the information concerning which, so far as we have been able to test it, appears to be accurate and sufficiently complete. The increase in size of the volume to 2168 pages has not affected the price, which remains at 14*s*.

[1] The Medical Directory, 1911. London: J. and A. Churchill. Pp. xxxviii.+2130. Price 14*s*. net.

THE CARBOLIC COEFFICIENT OF ESSENTIAL OILS.

SINCE the value of essential oils in their application, at all events, to medicine, depends probably upon their antiseptic power, the determination of this power is important. Following THE LANCET method which was set out in the report of THE LANCET Commission on Disinfectants, with slight modifications, Mr. W. Harrison Martindale has recently published an interesting series of figures which purport to give the phenol coefficient of the chief essential oils, in an article published in the November number of the *Perfumery and Essential Oil Record*. The results are summarised in the following table, the carbolic acid coefficients there recorded being the mean of the two results obtained with 2 minutes' and 30 minutes' contact respectively:—

Essential oil dilution.	Carbolic acid coefficient.
Origanum oil (aqueous)	25·76
Thymol (saponaceous solution)	25·29
Carvacrol	21·32
Thymol (in aqueous solution)	19·41
Thyme oil (in soap)	14·85
Thyme oil (aqueous)	13·38
Geraniol (in soap)	12·29
Cinnamon leaf oil (in soap)	9·66
Oil of cinnamon cortex (in soap) (52 per cent. aldehyde)	8·91
Oil of cloves (in soap)	8·88
Cinnamic aldehyde (in soap)	8·02
Citronellol (in soap)	8·11
Oil of cinnamon (82 per cent. aldehyde) (in soap)	7·92
Rosemary oil	5·94
Otto of rose (in soap)	5·94
Cassia oil (in soap)	5·94
Wintergreen oil (in soap)	4·64
Eucalypt. amygd. (in soap)	4·35
Lavender oil (English) (in soap)	4·94
Lemon oil (in soap)	3·94
Almond oil (in soap)	3·76
Eucalyptol (in soap)	3·76
Eucalypt. glob. oil	3·55
Light oil of tar (rectified)	2·17
Santal oil	1·67
Birch tar oil	1·67

It will be noted that in the majority of instances the oils were tested in saponaceous solution—that is to say, a limpid solution which throws out on dilution the oil globules in a fine state of subdivision. There is no information given as to the relative physical condition of the emulsions tested,

and it is apparently assumed that the state of subdivision in all cases was the same. If that was not the case, the relative values of the oils in regard to carbolic coefficiency may not necessarily be dependent upon the essential constituent, for undoubtedly a greater inhibitory action on organisms is shown by a perfectly uniform emulsion, in which the separated particles are exceedingly fine, than by an emulsion which exhibits irregularities or suspended particles varying in dimensions. It is interesting to note, however, that origanum oil, which heads the list, was found to give much the same germicidal effect whether used in aqueous or saponaceous solution. Generally speaking, however, the saponaceous solutions showed to advantage when compared with aqueous solutions—e.g., thymol in the above table. The results are extremely interesting and go to show that we are not necessarily dependent upon disagreeably smelling phenol compounds as the basis of strong germicidal preparations.

A COLD NOVEMBER.

NOVEMBER was in many respects an unusual month. It was in no wise remarkable for its fog, although London and some other localities were not quite exempt. In the matter of fogs, however, November has obtained an evil name somewhat undeservedly, for it is a fact fully proved by statistics that it is not so foggy, as a general rule, as either December or January. The first taste of London winter fogs generally occurs some time during November, and perhaps the first visitation makes more impression on the public memory than the later ones, however more unpleasant they may be. The chief feature of last month was its low temperature: it was not that there was a continued frost such as that which made skating possible during November a few years ago, but the persistent manner in which the thermometer remained several degrees below the average during the daytime, and the frequency of frosts —often of relatively slight intensity—at night. During a considerable portion of the month the temperature ranged between 5° and 7° below that ordinarily experienced at the time of year, and was generally at least 4° below it. In London the mean afternoon warmth was about 4° less than usual, and that of the nights 5½° less, while in some other parts of the country the divergence from the normal was greater. The coldest nights showed minimum temperatures of 25° (on the 18th, 22nd, and 23rd) by the screened thermometer in St. James's Park, and frost of lesser severity was recorded on as many as 15 other nights. The month was also very wet, and this is a quite rare combination for the time of year. In the summer a wet period is almost always a cool one, but the reverse is generally the case after October. A cool summer month has, with a rare exception, a relatively poor supply of sunshine, and a wet November is usually very gloomy. In the present case, however, the duration of sunshine was almost everywhere in excess of the normal. Even Westminster, which scarcely saw the sun for more than a minute after the 21st, recorded 36 hours, which is equal to an excess of 20 minutes per day, and at places on the coast the figure was very high for the season. In many parts of the kingdom the rainfall was abnormally heavy. In the western and south-western districts hardly a day passed without a measurable quantity finding its way into the gauge, and some northern districts were little better, while the extreme south-east, although not so interruptedly rainy, has a very heavy total. One of the wettest spots was, indeed, the south coast of Kent, where the aggregate amounted to nearly 7 inches, or more than that on the west coast of Ireland and in the rainy Hebrides. But the most hopelessly wet region was the Channel Islands. At Jersey there were only three days without rain, and the total fall, 10·85 inches, is probably without a record for November, and it may be for any other month. In London the falls were not so heavy, and 19 days with rain yielded no more than 2·87 inches. The wet conditions were not experienced in this country only. France as a whole was almost as rainy, and in some departments even more so, while the resulting inundation was certainly far more serious. In the well-known south-western corner of France in which Biarritz is situated there were about as many rainy days as in London, and the actual fall was not far short of twice as great. The Riviera was a fortunate exception, the greater part of the month being fine and mild or warm, and the rain coming down in one or two semi-tropical downpours. A great deal of rain fell in Italy, as is generally the rule in the late autumn, but the weather in its main aspects was not unfavourable, the sun shining brightly for some hours on a great proportion of the days, and the thermometer seldom failing to reach the genial figure of 60° in the shade except in the inland northern districts. In Sicily and Malta shade temperatures of 70° or higher were of almost daily occurrence, and the weather of the month was composed of the agreeable mixture of occasional rain divided by many days of clear or nearly cloudless skies. Algeria was as warm as London during an average July, the sky nearly always clear, and rain very infrequent.

BRACHIAL NEURITIS FROM PRESSURE OF THE FIRST RIB.

IN recent years attention has been called to the fact that obscure cases of nervous symptoms in the arm may be due to the presence of a cervical rib which presses on the brachial plexus. In the *Australian Medical Journal* for October Dr. Thomas Murphy has reported a case of this class in which the symptoms were due, not to a supernumerary rib, but to the normal first rib. No case of this kind appears to have been previously recorded. A single woman, aged 28 years, came under observation in June, 1910, complaining of pain, numbness, coldness, tenderness, and weakness in the left shoulder and arm and swelling and dusky-blue discolouration of the hand. The symptoms were worse after exerting the arms, as in tennis or typewriting. They were severe and always present in winter, but present only after exertion in summer. The first attack occurred in 1902, when the pain was severe, and she was treated for neuralgia. In the winters of 1903 and 1904 the symptoms were much the same. In 1905 the pain was more severe and the hand became swollen and dusky-blue. In 1906, in addition, she complained of a feeling of fatigue in the left shoulder and across the left side of the chest, and a "cramped feeling" in the throat, and at times could not swallow. In 1908 the arm and forearm were markedly wasted. In 1909 the symptoms were less severe. On examination the arm, forearm, and hand were tender throughout. The hand and forearm were cold. The wrist and hand were swollen and dusky-blue, suggesting severe chilblains. There was no œdema, such as would point to pressure on venous trunks. There was some loss of power in the arm and hand; the latter could not be closed. Some wasting of the forearm and impairment of sensation in the hand were found. The signs and symptoms pointed to neuritis. On pressure over the brachial plexus in the neck, behind the sterno-mastoid, a tender point of resistance was found, and shooting pain in the arm was produced. The possibility of a cervical rib suggested itself, but a skiagram failed to show one. However, in view of the resistance and tenderness in the neck, operation was advised. While the patient was being anæsthetised pressure on the brachial plexus caused twitching of the arm. An L-shaped incision was made behind the posterior border of the sterno-mastoid.

On incising the deep fascia the brachial plexus was exposed lying on the glistening insertion of the scalenus medius. The plexus was drawn inwards and the point of resistance, noticed before the operation, was found to consist of the insertion of the scalenus into the rib. This insertio with the bone gave the sensation of a swelling, over which the plexus passed. The muscle was divided near its insertion and the bone exposed. There was no swelling on the rib, which was cut through with forceps at the insertion of the muscle and then removed piecemeal, the soft parts being protected with a blunt spatula. A smooth bed was left for the plexus when replaced. The deep fascia was sutured with catgut and the wound closed. The operation was completed at mid-day, and at 5 P.M. the patient drew attention to the fact that her hand was white and normal in colour, though it had been dusky-blue for three months. After a week she could close her hand perfectly. The symptoms disappeared and the pain did not return in spite of exertion such as typewriting in extremely cold weather, and the arm and hand regained power. A skiagram taken after the operation verified the fact that the first rib and not a supernumerary rib had been removed. The symptoms produced on exertion appeared to have been due to the rolling motion which the scalenus medius on contracting would cause in the already stretched plexus at the point where the nerve trunks passed over the prominence made by the insertion of the muscle into the bone. Dr. Murphy saw a case of operation for suspected cervical rib in London last year, in which no such rib was found. He suggests that the case was probably similar to his. An apparently normal first rib, it seems, may cause severe nerve symptoms, a fact which throws light on some hitherto obscure cases.

A CLEAN MILK CAMPAIGN.

IN order to consolidate public opinion in readiness for the time when general legislation will be introduced for the purification of our milk, a joint committee of the National League for Physical Education and Improvement and the National Health Society has prepared and issued three leaflets, addressed to farmers and producers, to distributers and retailers, and to housewives and all consumers of milk respectively. They are brief, clear, and concise, and having been prepared by a committee, including representatives of the medical, veterinary, and legal professions, of the Local Government Board, local authorities, and farmers and dairymen, the directions and advice given may be taken to be both soundly scientific and practical. Much attention has lately been directed to the purification of the milk-supply, and local authorities have obtained and are using powers to trace to their source certain forms of milk contamination, notably tuberculosis. In addition to these special powers all local authorities have the power and duty of compelling cleanliness in dairies, cowsheds, and milkshops, ensuring as far as possible freedom from contamination until the milk is in the hands of the consumer. These measures often fail in their effect through lack of public opinion to support them, and they are in many instances rendered futile by the ignorance and carelessness of consumers. It is important to success that vendors should realise that the reputation for clean milk is essential to their own interests, and such admirable rules as the suspension from duty for considerable periods without loss of wages of dairymen in whose homes infectious diseases have arisen should lead the public to patronise those dairy companies which make and keep them. Such a rule is itself a guarantee that the other precautions necessary for obtaining uncontaminated milk are carried out in these establishments. When Bills have been passed, and supervision of production and control of distribution have been obtained, the problem will still remain of educating the consumer, and it is to such national societies as these, which have prepared and are circulating advice and information among the people, that the lot will fall of overcoming the last line of resistance to a purer milk-supply.

REFLEX ANURIA.

THE subject of reflex anuria is difficult and in need of further elucidation. In the *Medical Review* for December is related an instructive case, taken from the Archives of the Middlesex Hospital. A stout multipara, aged 49 years, was admitted under the care of Sir A. Pearce Gould on March 1st, 1910. Six years previously she was seized with severe pain in the left lumbar region which lasted several hours. Similar attacks followed, the last on Feb. 18th. Attacks of pain also occurred in the right loin but were neither so frequent nor severe as on the left side. The pain was accompanied by vomiting and constipation and inability to pass urine. Before the attacks she noticed that the urine was dark, and she thought she had seen streaks of blood in it. In consequence of her stoutness abdominal examination was difficult. Both lumbar regions were tender, and there was dulness in the left flank, which did not shift with her position. The urine varied in specific gravity from 1005 to 1012, was slightly alkaline, and always contained albumin and sometimes a little pus and blood. Skiagraphy showed three shadows in the left kidney but nothing in the right. As obesity rendered her an unfavourable subject for operation, and the symptoms were somewhat ambiguous, she was kept under observation. She complained of pain across the lower abdomen, and only with difficulty could it be found that she had more pain on the left than on the right side, and that there was more tenderness in the left flank than in the right. On March 14th the left kidney was exposed from the loin and found enlarged and mottled. It was incised and three irregular oxalate of lime calculi were extracted from dilated pus-containing calyces. The section of the kidney was grey and yellow, and the organ was obviously much diseased. A drainage-tube was inserted. After the operation the urine contained more pus, but was excreted in considerable quantity. She did well until April 9th, when she was quiet and almost apathetic. The total urine passed per urethram, which had averaged 50 ounces, fell on the 8th to 15 ounces; on the 9th and 10th not a drop was excreted; on the 11th only half an ounce; and on the 12th 1 ounce. From the wound only a little pus was escaping. The urine was very turbid and contained only 0·1 per cent. of urea. It was concluded that there was anuria from blocking of the right ureter by a calculus which had probably been the cause of the pain on that side and was too small to be shown in a skiagram in so stout a woman. Operation on the right kidney was urged, but declined. Hypodermic injections of pilocarpine, diuretin, and saline enemata were repeatedly given and she sweated profusely. On the 12th she was very weak, but there were no definite uræmic symptoms and permission for an operation was given. On exposing the right kidney from the loin a small stone was found impacted in the neck of the ureter, and a bougie was passed down into the bladder to make sure that there was no other calculus. Urine flowed from the ureteral wound as soon as the stone was extracted. A drainage-tube was inserted. She rapidly improved and on the 15th passed 20 ounces of urine per urethram, and by the 19th the quantity had increased to 45 ounces. In May she had completely recovered except for a sinus in the left loin. Sir A. Pearce Gould explains the symptoms as follows. When the small calculus in the right kidney passed into the narrow neck of the ureter it not only prevented the passage of urine but arrested the secretion of the opposite kidney by reflex

stimulation of the vaso-constrictor nerves and inhibition of the secretory nerves. After its removal, while the urine from the right kidney was escaping through the drainage-tube, urine quickly appeared in the bladder, mostly, if not wholly, from the left kidney. Further evidence of the influence of the impacted stone upon the secretion of the opposite kidney is the fact that urea in the urine passed after the operation rose to over 1 per cent. in contrast to the 0·1 per cent. before. This reflex arrest of secretion in a diseased kidney by impaction of a calculus in the opposite ureter is analogous to the anuria occasionally caused by a urethral operation when the kidneys are diseased. It is an interesting example of the fact that reflex effects depend partly on the condition of the part to which the efferent impulse is sent. Indeed, it is believed that calculous occlusion of one ureter never causes fatal anuria if the opposite kidney and ureter are healthy.

THE OVER-HEATING OF HOUSES.

THE excessive humidity which has characterised the weather during the year now drawing to a close, and more particularly throughout the month of November, has re-directed attention to the much-debated question as to the methods of heating best adapted in this country for comfort as well as health. We are often accused of being old-fashioned, especially by Americans, and nothing surprises our professional brethren from the other side more, used as they are to hot air or steam heat even in private houses, than the open fire-places still found in many of our hospitals. That their more "up-to-date" methods are not free from defects is, however, being gradually forced upon the American nation, and it is not without significance, therefore, to find that the *Boston Medical and Surgical Journal* of Nov. 17th has been inveighing against them in no uncertain terms. According to this authority, the average temperature of the American furnace-heated home is 76° F., as contrasted with 60° F. in England. But it is in the comparative humidity that the most striking difference lies. We are not afraid of moist air; it is responsible for the clear complexions, and absence of wrinkles, characteristic of us, although, it is true, it renders us more liable to rheumatoid affections unless carefully regulated. The average humidity in the United States and Canada is very much less than in this country, but the Canadian and American take care to reduce the proportion still more by their customary methods of heating. Indeed, to such a degree is this carried out that the humidity often falls as low as 16, according to the article from which we are quoting, which is about half the humidity of the Desert of the Sahara, the mean humidity of which is stated to be 30. The consequences of this extraordinary dryness in the atmosphere of the home are not without manifestation. The surface moisture of the body is eagerly absorbed by the parched air, the mucous membranes of the throat, nose, and pharynx become dry, congested, and liable to any prevalent infection, and the heat-regulating mechanism of the body fails to react when its owner has to go out into the cold. As a result the "great American cold" of Elizabeth Robins, the "fall cold" of the lay papers, and the "chronic American naso-pharyngeal catarrh" of the medical press has the nation in its grip every succeeding winter, and the "one-night-cough-cure" quacks, the numerous, much advertised "anti-catarrh" remedies, and the makers of "cuspidors" reap a plentiful harvest, while extra labour is also thrown upon the medical profession. The *Boston Medical and Surgical Journal* roundly states that the super-heated American house is "a medical barbarism and an anachronism in this age of enlightened progress." Many English medical men have had the same view when sojourning across the Atlantic; but, on the other hand, it cannot be denied that we, here, err in the opposite direction, for draughty corridors, ice-cold bedrooms, and chilly living-rooms claim their quota of victims each succeeding winter. The happy medium in this country would seem to be an employment of the two methods, utilising the ventilating powers of the open fire as well as the equable heat given out by the steam radiator, but only a few of our more modern dwellings as yet offer such a combination.

THE ULTIMATE RESULTS OF GASTRO-ENTEROSTOMY.

GASTRO-ENTEROSTOMY has for some years enjoyed a high reputation in the treatment of many disorders of the stomach, both obvious and obscure, and although its reputation is not quite what it was, yet it is still employed frequently by many surgeons. This is not surprising, for in most cases the temporary results, at least, are very good, while the patient is in bed in hospital and is judiciously dieted. The permanent results, too, in some cases are truly wonderful. Patients who have been in a state of chronic invalidism for 10 or 20 years have, as it were, regained their youth and the health and freedom from gastric disturbance so characteristic of the young. Many physicians, however, have seen no small number of patients who have suffered from a return of the symptoms after having undergone the operation of gastro-enterostomy, and it occurred to Dr. Otto May, when he was medical registrar to the Middlesex Hospital, that it would be of interest and value to trace the after-history of patients on whom the operation of gastro-enterostomy had been performed at that hospital. He excluded all malignant cases, for obviously they could afford no information of value. He selected the three years 1906, 1907, and 1908, so that sufficient time might have elapsed between the performance of the operation and the date of investigation. Of the 90 patients upon whom the operation had been performed he was able to obtain information as to the results in 65. In order to arrange the results statistically he divided the cases into four groups. In the first are those in whom the result is entirely satisfactory; they can do their usual work without discomfort, provided they use reasonable care in their dietary. In the second class he puts those where occasional attacks of pain or vomiting occur in spite of ordinary care, but where considerable improvement has resulted. In the third class are those in whom slight improvement has occurred, but the gastric conditions are sufficiently troublesome to interfere seriously with the capacity for work. In the last class Dr. May puts those cases in whom no definite improvement can be found. As to the results, rather less than half (46 per cent.) were "cured," while another 20 per cent. were greatly relieved, but in 23 per cent. of the whole the operation had to be described as a total failure, and only slight benefit had occurred in the remaining 11 per cent. The cases which gave almost uniformly good results belonged to two classes: (1) dilatation of the stomach caused by pyloric obstruction; and (2) duodenal ulcer. Apparently, also, some cases of gastric ulcer without pyloric obstruction received much benefit. Dr. May comes to the conclusion that gastro-enterostomy is contra-indicated in that fairly large class of women who suffer from pain and flatulence, but in whom no definite evidence of organic trouble can be found. He suggests that the fundamental indication for the operation is marked delay in the emptying of the stomach after a simple test meal, and he thinks that the skiagraphic method is the most trustworthy one for this determination. We might also mention that although the numbers of men and women patients in the series were almost equal, 34 of the patients being men and 31 women, yet of the men 22

completely recovered but only 8 of the women. It is worthy of note that in five of the cases of women the stomach and duodenum appeared normal at operation, and in these the results were almost uniformly unfavourable. We think that Dr. May has done a very useful piece of work much needed at the present time.

PLURALISM AND THE LEEDS GENERAL INFIRMARY.

ON Nov. 18th the weekly board of the General Infirmary at Leeds passed the following new rule, which was considered and confirmed at a meeting of subscribers held on Dec. 8th:—

That from and after Jan. 1st, 1916, members of the full honorary staff shall not hold any other honorary hospital appointment than their appointment at the Infirmary.

That from and after Jan. 1st, 1916, members of the assistant honorary staff shall not hold more than one honorary hospital or dispensary appointment in addition to their appointment at the Infirmary, and that such additional appointment must not involve the charge of beds.

Provided that this shall not be held to prevent members of the staff from holding consulting appointments at other hospitals, appointments at the University of Leeds, or appointments to offices in the Territorial Medical Force, or (so long as they are not elected to a different position from that now held by them) from retaining appointments now held by them.

The question of pluralism in hospital appointments is one which promises in future to engage the attention of the medical profession more closely than hitherto. It is a question upon which opposing views are held, not only because individual interests clash, but also on the general principles involved. Whether it is better or worse for particular institutions and for medical science that the members of the medical and surgical staffs should also hold similar appointments elsewhere, or that their services and skill, gratuitously given, should be monopolised by the institutions to which they first become attached, are questions to which a well-considered answer may be required. The sweeping away of old institutions is liable in most cases to lead to individual hardship, but that the new rule in Leeds will not operate harshly is indicated by the provision made in the last paragraph to exclude present members of the staff from its scope so long as they continue to hold their present posts at the infirmary, and also by the date, five years hence, at which the rule is to become operative.

FIGHTING DIPHTHERIA AT CHICAGO.

THE Department of Health of Chicago has issued an appeal to the inhabitants of that great city to assist in the prevention of diphtheria. It is claimed that during the last 14 years 25,678 deaths from diphtheria have been prevented, and this is mainly due to the use of antitoxin. The average annual death-rate from diphtheria before the introduction of antitoxin was 136 per 100,000 of the population. During the 14 years that antitoxin has been applied the average annual death-rate from diphtheria only amounts to 36 per 100,000 inhabitants. Still the sanitary authorities are not satisfied. They maintain that practically there should be no deaths from this cause, as antitoxin, if given in proper doses and at the proper time, will cure the disease, while the immunising dose will prevent its development if taken in time by those exposed to infection. The deaths that still occur are attributed to ignorance, carelessness, and neglect. Sometimes this may be the fault of the medical attendant, but in the vast majority of cases the parents are the guilty parties. The chief difficulty is to persuade parents not to neglect what appears to be an ordinary sore-throat. Thus, in two schools 11 children were found with diphtheria bacilli in their throats. The bacteriological examination of swabs from the throats should be the common practice; and if the medical attendant will not do this, or the patient cannot afford to give the necessary fee, the Chicago Health Department physicians undertake the examination gratuitously. Further, no less than 28 free antitoxin stations have been established in various districts. The remedy, therefore, is close at hand and gratuitous for all. If lives are still lost, it is simply because the persons concerned do not avail themselves with sufficient promptitude of these advantages. According to the experience acquired during the last 14 years at Chicago, it is stated by the Health Department that recovery is certain if antitoxin is given the first day the disease is manifest. Should this be delayed to the second day the patient in nearly all cases will be saved. Even on the third day most children will recover. But if the antitoxin is not given before the fourth day, then there will be many deaths. After the fourth day antitoxin does little or no good. When given on the first day, 2000 units generally suffice. On the third day 5000 units are required, and on or after the fourth day 10,000 units are rarely of any service. As all that is necessary can be obtained gratuitously, poverty is no excuse for neglect. The State of Illinois supplies all medical practitioners with antitoxin free in exchange for a filled-up form to facilitate the furnishing of the demographic statistics. The penalty for not supplying these details concerning the case treated is the refusal to give any more antitoxin. Culture outfits for collecting samples from suspected throats to be bacteriologically examined are kept at all the police stations. Therefore they can be promptly obtained, and there is no loss of time in the analysis when once the samples are in the hands of the health authorities. Thus, the bacteriological diagnosis is quickly obtained and the proper life-saving measures can be taken at once. All that is needed is intelligent action on the part of the parents or guardians of the patient. This organisation and the excellent results attained, even amongst such a mixed population as that of Chicago, merit to be studied and imitated, which is certainly the sincerest form of flattery.

THE SPECIFIC DIAGNOSIS OF PULMONARY TUBERCULOSIS.

IT is now a platitude to state that the earlier the stage in which pulmonary tuberculosis is diagnosed the greater are the chances of success in treatment. A large amount has been written in reference to the means at the disposal of the physician to assist him in arriving at a conclusion apart from actual physical examination of the patient, for in a large number of the early cases the physical signs are indefinite and would not by themselves justify a positive diagnosis. It is, therefore, of the highest importance that careful and repeated investigations should be made into the reliability of the auxiliary methods of diagnosis which are employed by the worker in the laboratory in collaboration with the physician at the bedside. We publish this week an instructive paper on this subject by Dr. A. C. Inman, the superintendent of the laboratories of the Brompton Hospital for Consumption and Diseases of the Chest. He gives a valuable summary of the work accomplished by other observers and adds some interesting results of his own observations. The value of the detection of tubercle bacilli in the sputum is generally recognised. The Ziehl-Neelsen is the method that is most usually employed, but Dr. Inman recommends the antiformin method of Uhlenhuth and Xylander as being superior to all others. The examination of the blood for tubercle bacilli has not yielded uniform results in the hands of different observers, and is not likely to be of value in ordinary clinical work. Dr. Inman draws attention to the presence of the pathogenic bacilli in the stools of tuberculous patients. Of 26 adults 18 had tubercle bacilli in the sputum, and of these 16 had tubercle bacilli in the fæces. He suggests that the

appearance of the bacilli in the stools of early cases of pulmonary tuberculosis, in the absence of intestinal tuberculosis, results from the swallowing of sputum secreted in an open tuberculous focus in the lungs. This may be of value in the case of those patients who habitually swallow their sputum. Especial interest attaches to Dr. Inman's remarks on the tuberculin test in tuberculosis. It was at one time thought that a positive reaction to tuberculin indicated active tuberculosis, and that therefore energetic treatment was necessary. The observations of investigators from various countries indicate that this conclusion must now be modified. With regard to von Pirquet's cutaneous reaction, Dr. Inman repeats the opinion that has been widely expressed—namely, that the reaction is of value and is eminently specific in the case of young children, but it may only show the presence of latent tuberculosis in adults, for 70 per cent. of apparently healthy ones give a positive reaction. The same remark applies to the ophthalmo-reaction. Further, a negative reaction does not prove the absence of active tuberculosis. In regard to the subcutaneous tuberculin test Dr. Inman speaks with no uncertain voice. He considers that little importance is to be attached to the reaction at the site of inoculation, and as regards the febrile reaction he believes that it may now be definitely affirmed that it is not specific. On the other hand, he holds to the view that the focal reaction in the lungs is specific, and that consequently a careful physical examination of the lungs is demanded. This once again emphasises the importance of a close collaboration between the physician and his colleague in the laboratory. The old dictum that in order to arrive at a correct diagnosis in a supposed case of pulmonary tuberculosis there must be present an assemblage of signs and progression of symptoms is as true to-day as ever. Dr. Inman has made an extended research into the diagnostic value of the opsonic index. He insists that unless the opsonic index falls well outside the normal limits no deductions should be drawn from a single observation. This is of importance, as sometimes it is sought to arrive at a conclusion from one examination. The method he advocates is to examine the blood before and after walking exercise. He draws attention to the fact that the amount of exercise performed may be insufficient to activate the serum, but he considers that the physician alone must determine whether a second estimation after increased exercise is desirable. For Dr. Inman's classification of his results we refer our readers to the original paper, but his method undoubtedly seems to afford a valuable and reliable addition to the auxiliary measures for diagnosis in cases of doubtful tuberculosis. From time to time it is wise to take stock of methods, both clinical and laboratory, which have been in use for some time. New observations necessitate that old opinions should be abandoned or modified, and it is particularly with this object in view that articles like the one to which we have drawn attention are to be welcomed and carefully studied.

LARGE INCISIONS.

THE most suitable length of an incision is not always easy to determine. On the one hand, the incision should be sufficiently large to enable the surgeon to carry out fully what is needed, for nothing is more embarrassing than to have to operate through too small an incision, and the damage to the tissues caused by undue stretching may more than counterbalance any good resulting from the smallness of the skin wound. A long incision, if aseptic, takes no longer to heal than one which is small. On the other hand, an incision may be too long; the least important argument against a long wound is the unsightliness of the scar, though this may be of some moment if it is on a part of the body exposed to view. There are other and more obvious objections against an incision unnecessarily long, and these have been put forward in a letter from a correspondent in this issue of THE LANCET. He points out that in abdominal operations a long incision means much exposure and chilling of the abdominal viscera, and this may suffice to turn the scale against the patient in a serious case. In any laparotomy the length of the incision must depend on the condition present, but, other things being equal, the smaller the incision the better, for, in addition to the reasons already mentioned, certainly a small incision is less likely to be followed by a hernia.

THE OXIDATION OF PHENOL BY CERTAIN BACTERIA IN PURE CULTURE.

AN interesting communication was read at a recent meeting of the Royal Society in which Messrs. Gilbert S. Fowler, Edward Ardern, and William F. Lockett announced that in the course of their investigations on the effect of various antiseptic substances on bacterial sewage filters, they had observed that solutions of pure phenol could be oxidised on filters of this description. The phenol apparently exerted a selective action on the bacteria present in the filter, only three or four types of organism appearing in the filtrates. Of these, about half were liquefying organisms identified as B. liquefaciens fluorescens. At first it was thought that the main non-liquefying or extremely slowly liquefying organism was B. fluorescens non-liquefaciens, on account of the apparently fluorescent yellow colonies it produced; subsequent investigation showed that this was not the case. Dr. E. J. Sidebotham, of the Public Health Laboratory, Manchester, identified the chromogenic organism as a non-motile bacillus, no cilia, occurring often in pairs, no chains. In general the characteristics appear to be similar to those of B. helvolus (Zimmermann), which in gelatin forms a button-like growth of a Naples-yellow colour. On agar also it produces a thick Naples-yellow growth, and on potato there develops an abundant yellow expansion. Evidence was obtained showing that a pure culture of the organism was capable of oxidising phenol, whilst no change was noted in the phenol content of solutions containing "dead" cultures. Similarly, no change was observed in the phenol content of solutions of pure phenol. Experiments are being carried out to determine the exact effect upon the oxidation of phenol by this organism, and by the addition of other nutrient substances, one experiment having shown that the addition of broth accelerated the action. Researches have also been in progress on the bacterial oxidation of sulphocyanates, which appears to be more complex and certainly less rapidly effected than the oxidation of phenol, inasmuch as when a mixture of the two substances is submitted to bacterial oxidation the phenol is invariably the first to disappear.

Mr. Benjamin C. Broomhall, F.R.C.S. Eng., L.R.C.P. Lond., has been granted the Royal licence and authority to accept and wear the Third Class, First Division, Imperial Chinese Order of the Double Dragon, which has been conferred upon him by the Emperor of China in recognition of valuable services rendered.

WE published last week a paper by Dr. James McIntosh and Mr. Paul Fildes on the Theory and Practice of the Treatment of Syphilis with "606." The paper had the following subtitle: "From the Bacteriological Laboratory, London Hospital—Dr. W. Bulloch" (as given in the contents page of THE LANCET). By a mistake Dr. W. Bulloch's name was omitted from the footnote to the paper in the body of the journal.

STERILISATION OF WATER ON A LARGE SCALE BY MEANS OF ULTRA-VIOLET RAYS.

Methods of Industrial Water Sterilisation.

THERE are two problems of industrial water sterilisation. The first one consists of obtaining water perfectly free from germs—that is to say, absolutely sterile. The second problem is that of obtaining water which is good for public distribution as drinking water, which does not present any danger of acting as propagator for infectious maladies which, according to modern hygienic theories, are likely to be spread by certain microbes living in the water. Typhoid fever and cholera, which are supposed to be propagated by water, may be mentioned particularly.

The former problem—that of obtaining absolutely sterile water—presents itself chiefly in its application in medical practice, surgery, gynæcology, &c. This problem has been commonly solved in the following manner: 1. Heating the water to high temperature during a considerable period, in some cases even under high pressure. 2. Adding to the water chemical products, such as carbolic acid, and during later years treatment with ozone.

The latter problem—namely, that of producing a drinking water for public distribution which will not propagate maladies—has been most commonly solved by more or less frequent filtrations of the water through sand filter-beds of various density. These filtration plants keep back most of the microbes, and give a relative security to the inhabitants of a town where such system is used. Another process has been frequently advocated in the last few years—viz., adding to the water certain chemical products, such as salts which form precipitates; chlorine, which in itself is a strong bactericidal product; or oxidising agents, the principal of which has been ozone.

Filtering plants have had a very wide application in all countries; there are, however, a number of important disadvantages to their use. The first cost of such a system is very high, owing to the large area necessary on account of the slow speed at which the filtration must be carried on in order to be effective. Even under these conditions the action is not absolutely certain. The systems which advocate the addition of chemicals for sterilising or, to be more accurate, for disinfecting water, have not had general approval, due largely to the aversion of the public to anything being added to drinking water.

Sterilisation by the ozone process has been tried on a very large scale in different cities; nevertheless only a few installations have been made. One of the disadvantages of this system is the disagreeable taste which ozone gives to the water, and which only disappears after the water has been standing for a considerable time. Another objection lies in the difficulty of producing ozone without at the same time producing nitrous acids, the presence of which absolutely condemns water for drinking purposes. The first cost of the ozonising plants is extremely high, while, on account of the intelligent attention required, subsequent supervision is costly.

All these different processes, whether for dealing with small or large quantities of water, have found a very serious competitor in the methods of treatment employing ultra-violet rays, it having been demonstrated that sterilisation by means of ultra-violet rays is not only safer than by any other method, but is also infinitely simpler and cheaper.

Production of Ultra-violet Rays.

The physicist has known the ultra-violet rays for a long time; he produced them in his laboratory by different methods, principally the carbon bisulphide lamp or the arc between metal electrodes. The first ultra-violet rays which were produced industrially were in the apparatus of Professor Finsen for the treatment of lupus and other maladies, Finsen using for his purpose the arc between metal electrodes, or a series of discharge gaps constructed of iron or other metal. These sources of ultra-violet rays are, however, complicated, and have scarcely found application for other purposes than for those indicated by Finsen himself.

The quartz mercury vapour lamp, however, represents the first really convenient source of ultra-violet rays, this lamp being similar to Finsen's, in so far that the electric arc is produced between metal electrodes, these in this instance being mercury. This mercury arc has been studied particularly by Arons and by the American engineer, P. Cooper Hewitt, the latter's work resulting in the development of the well-known Cooper Hewitt lamp, which consists of a long tube, and has been largely applied for general illumination and photographic purposes.

An advance was made in the design of mercury vapour lamps when Schattner and Kuech enclosed the mercury arc in tubes of fused rock crystal whereby they obtained a very strong source of ultra-violet rays. The presence of these rays was, however, a disadvantage for an illuminating lamp, the rays themselves being injurious to the eyes. The tube of the Cooper Hewitt lamp is manufactured of glass, which is a complete absorbent of the ultra-violet rays, these being produced in the interior of the tube. It is on this account that the light obtained from these lamps is in no way harmful.

Quartz mercury vapour tubes were first applied exclusively to illuminating lamps, it being well understood that the tubes were enclosed in glass globes so as to protect the public against the enormous quantity of ultra-violet rays which passes through the fused rock crystal, of which the tubes themselves are made. Such quartz mercury vapour lamps are being made at the present time by the Westinghouse Cooper Hewitt Company in London and Paris, and by the Quartzlampen Gesellschaft in Hanau. The former company has studied jointly with Messrs. von Recklinghausen, Henri, and Helbronner the application of this mercury vapour lamp (known as the Westinghouse silica lamp) to other than illuminating purposes. These studies began with the particular application of the ultra-violet rays to the sterilisation of milk and water. This work has since been taken up in a good many other laboratories, it now being a question of almost general knowledge that dangerous microbes contained in water are killed with quite remarkable speed by the means of the ultra-violet rays emitted.

Water Sterilising Apparatus by Means of Ultra-violet Rays.

The work done in this matter has enabled the Westinghouse Cooper Hewitt Company to produce water sterilising apparatus for different applications. The first apparatus, which provided a continuous supply of sterile water at the rate of 132 gallons per hour, was referred to in THE LANCET of April 2nd (p. 937) and May 14th (p. 1390), 1910, under the heading of "Practical Sterilisation by Means of Ultra-Violet Rays," and need not be again referred to.

It may, however, be mentioned that another apparatus, producing about the same quantity of sterilised water, has been put on the market. This, however, operates on a different system, in so far that the lamp is submerged, it being claimed that a greater number of the rays emitted by the lamp are utilised for the purpose of sterilisation. It must, however, be borne in mind that the normal working of the lamp is seriously modified by the chilling effect of the water, on account of which there is an infinitely lower production of rays that is not at all compensated by the better utilisation of those which are produced. The chief disadvantage, however, is that the luminous tube becomes gradually coated with scale from the salts contained in the water, which scale renders opaque the otherwise transparent tube and prevents the ultra-violet rays from entering the water, in consequence of which sterilisation is arrested.

The sterilisation of large quantities of drinking water for public water distribution has been the object of numerous tests, in which well-known investigators have been interested.[1] Experiments to test the efficiency of the apparatus for this purpose were made by artificially polluting the water which entered the apparatus, the lamps being suspended above the water, maintained at a short distance from the surface by means of floats. These experiments also showed in a striking manner the importance of having the water violently agitated, and this experience has been used in the construction of new apparatus. These early experiments showed that

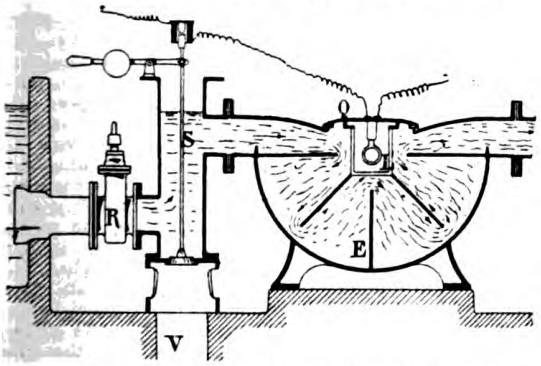
[1] See Comptes Rendus de l'Académie des Sciences, April 11th, 1910. Stérilisation de Grandes Quantités d'Eau par les Rayons Ultra-violets. Note de MM. Victor Henri, André Helbronner, et Max de Recklinghausen. Note presentée par M. Dastre à l'Académie des Sciences (these experiments based on early researches at the Sorbonne University). Cernovodeanu and Victor Henri, Comptes Rendus, Jan. 3rd, 1910.

sufficient sterilisation of drinking water could be obtained with a maximum expense of 36 watt hours per cubic metre.

In carrying out their experiments Messrs. M. Henri, Helbronner, and Recklinghausen tried to increase the bactericidal action by utilising a larger number of the ultra-violet rays generated than is possible where the lamp is merely suspended above the surface of the water. It is, however, highly important that the lamp should burn in a normal manner—that is, under the same conditions as to temperature, &c.—as in illuminating outfits, in which case the light efficiency of the lamp can be checked by testing the current and voltage. For the efficient operation of the quartz lamp it is necessary that the luminous tube should be at a high temperature (about 800° C.) If the lamp is artificially cooled, either wholly or in part, as is the case when it is submerged in running water, this high temperature cannot be obtained, and the light efficiency of the lamp is seriously reduced. It may be mentioned that the lamp for 110 volt circuit, such as we have in the small Westinghouse steriliser already described, should be adjusted to 75 volts across the tube, and in the case of the 220-volt lamp, 150 volts across the tube. The normal current of 3½ and 3 ampères respectively is obtained after 15 minutes' running; the efficiency is then at the maximum. In all Westinghouse steriliser outfits the quartz lamps run under conditions corresponding to those in ordinary illuminating outfits, consequently at their highest efficiency.

In dealing with water sterilisation on the industrial scale, the Westinghouse Cooper Hewitt Company, Limited, have thought it desirable to develop a single unit, one or several of which may be set up according to the quantity of water demanded. This unit will sterilise at least 600 cubic metres (132,000 gallons) in 24 hours, and is as already mentioned, fitted with one 3 ampère 220 volt lamp.

The unit consists essentially of three parts—viz., the special cast-iron chamber (E in figure), in which the water



comes under the influence of the ultra-violet rays; the special box with cut rock-crystal windows, into which the lamp is fitted; and the special automatic deviating valve, which ensures that no water shall pass through the sterilising chamber at such time as the lamp is not in operation. The chamber (E) through which the water passes is fitted with several baffles for directing the flow. These serve the purpose of thoroughly stirring up the water, which, as already pointed out, is necessary for the proper treatment and brings the full quantity of water under the direct influence of the light on three distinct occasions. The lamp-box (I) makes a water-tight joint with the containing vessel (E), being held in position by means of four bolts with wing nuts (O); the box itself forms an obstacle in the path of the water. The three sides of this box in the path of the water are fitted with windows of cut rock crystal which provide free passage to the ultra-violet rays emitted by the lamp, through which they pass into the water flowing in the chamber. The deviation valve (V) is placed between the supply and the steriliser apparatus, and consists of a double T-piece fitted with a mushroom valve at the lower end, this valve being held closed by means of a solenoid (S) energised by the current flowing in the sterilising lamp. Should the current be cut off for any purpose this valve would be immediately opened and the water would cease to pass through the sterilising chamber. This automatic deviating valve can readily be fitted with a bell or luminous signal, so as to attract the attention of the inspector of the plant.

On entering the apparatus the water passes through the supply valve (R) and over the deviating valve (V) into the chamber (E). The flow is directed against the first window of the box (I) by means of a baffle, is then sent to the periphery of the chamber and back again to the second or horizontal window; thence it passes back to the periphery of the chamber round a further baffle to the third window, thus coming under the direct influence of the ultra-violet rays on three distinct occasions. In the event of the lamp not being in operation, the deviating valve (V) would be open, through which the water would pass. In this way it is assured that nothing but sterilised water can be distributed to mains.

The Westinghouse steriliser of this type (although in a somewhat less perfected form) has been in service for a considerable time at the Competitive Exhibition for Sterilising Apparatus at Marseilles. The following table shows the results of a few of the tests which have been made with this apparatus:—

Results of Tests with Water Exposed to Ultra-violet Rays.

Experiment No.	Cubic metres water per 24 hours.	Watt hours per cubic metre.	Before steriliser.			After steriliser.		
			B. coli per litre.	Germs per cubic centimetre.	Mould per cubic centimetre.	B. coli per litre.	Germs per cubic centimetre.	Mould per cubic centimetre.
1	More than 600	Less than 26	—	158 174 148	—	—	0 2 2 0 0	8
4	Do.	Do.	100 to 200	220 260	—	0	2 2	—
7	Do.	Do.	—	22 18	2	—	0 4 0 0	2 10
10a	Do.	Do.	500	36 36 40	2	0	0 0	3
12a	560	28	80	22 20 18 24 16	—	0	0 0 0 0 0·5 0 0	3 1·5
12b	More than 600	Less than 26	50	48 52 44	2	0	0 0 0 0 0 0	6
13	Do.	Do.	50	24 30 14	—	0	0 2 6 0	—
14	Do.	Do.	200	30 38 20	—	—	10 6 0 4 1	2
18	Do.	Do.	500 to 1000	43 60	—	0	0 0 0 0 0 1	—

From this table it will be noted that the quantity of water passed through the apparatus was in nearly every case more than 600 cubic metres per 24 hours. At certain periods of the tests an even greater flow of water was available, and even under these conditions the bacteriological results were no less satisfactory than those cited above. This table shows that the water leaving the apparatus was in the majority of

cases sterile—that is, showed an entire absence of germs—and in no case did tests reveal more than 10 germs per cubic centimetre; on no occasion even when testing with 200 cubic centimetres were any B. coli found. The water which has been treated in apparatus of this description can therefore be safely classified amongst the "perfect" waters, according to Miquel's definition, whilst the water which was fed into the apparatus could scarcely be called potable, it being far too rich in B. coli.

The presence in some cases of a greater quantity of mould in the water after passing through the apparatus is due to the lack of protection of the opening from which the test-water was drawn, whereas the valve between the supply and the apparatus was well protected against dust and wind. The water with which the apparatus was fed during the Marseilles tests was clarified by the installation of roughing filters and prefilters of the system "Puech and Chaball, Paris." The installation produced a perfectly clear water from the very muddy supply of the river Durance. This water was in most cases quite opaque, even through a column 1 metre long.

The above tests, carried out by independent authority, have clearly demonstrated the possibility of producing perfect drinking water for public distribution with consumption of 26 watt hours per cubic metre, single apparatus being capable of dealing with fully 600 cubic metres in 24 hours. In view of the extreme simplicity of the apparatus and this low power consumption, it would appear that there is a wide future for this new system of sterilisation.

THE CORONERS' LAW AND DEATH CERTIFICATION (AMENDMENT) BILL.

THE procedure by which in this country deaths from unnatural or unknown causes are investigated has, it is notorious, given rise to much dissatisfaction. Complaints and criticisms extending over several years were ultimately brought to a head and the various authorities concerned have held inquiries and have proposed schemes of reform. It seems likely that in the near future these proposals will constitute the basis of legislation, and it is therefore of importance that the medical profession should scrutinise them closely, and, if required, should exercise its influence in such a way as to ensure that the community shall receive the full benefit of medical knowledge as it exists at the present day.

We may briefly recapitulate the steps which have been taken during recent years. In October, 1906, the London County Council passed a series of resolutions suggesting amendments in the laws relating to death certification and coroners' inquests. In 1908 a Departmental Committee was appointed by the Home Office to inquire into the law relating to coroners and coroners' inquests, and in December, 1909, this committee issued a report containing a number of recommendations.[1] In April of this year Sir William Collins introduced a Bill in the House of Commons "to amend the Law relating to Coroners' Law and the Certification and Registration of Deaths and Burial." Recently the London County Council (on which body there is at present not a single medical man) passed a further series of resolutions dealing with coroners' affairs, and resolved, subject to certain amendments, to support Sir William Collins's Bill, and to urge the Lord Chancellor and the Home Secretary to secure facilities for the early passing of the Bill. Sir William Collins's Bill—amended possibly in certain particulars—may therefore be the basis of forthcoming legislation, whatever the whirligig of politics may bring about in the next few days, and it is accordingly the provisions of this Bill that should be examined.

The Bill has already aroused strong opposition owing to the proposal it contains to make it obligatory for a medical practitioner personally to inspect a body before giving a certificate of death, but without making any provision for the payment of a fee. For the moment, however, we wish to confine our remarks to the clauses dealing with coroners, which have not yet received, we think, the attention from the medical profession their importance deserves. The Bill does not by any means follow the recommendations of the Departmental Committee, and in this matter we are bound to observe that, while fully recognising the high abilities and great experience of Sir William Collins, we are not aware that he has had an experience of the coroners' courts so large as to justify his setting aside recommendations arrived at by the committee after prolonged inquiry. The Departmental Committee, for instance, found that there was justifiable dissatisfaction in the medical profession with the scale of fees in the coroners' court and with their mode of allocation, and recommended a new scale. It also advised that medical officers of institutions in which deaths occurred should no longer be deprived of their fees. Neither of these recommendations finds a place in the Bill.

It is, however, Clause 5 of Sir William Collins's Bill which calls for the most urgent criticism. This runs as follows:—

> No person shall be appointed a coroner unless he be a practising barrister of not less than five years' standing, or a solicitor of not less than five years' standing, or a registered medical practitioner who is also a barrister or a graduate in law of a University in the United Kingdom.

A proposal which seeks to place the medical man at a disadvantage, as compared with a member of the legal professions, in a matter admittedly closely pertaining to medicine, requires strong reasons for its justification, and it becomes necessary to review the functions which are discharged by the coroner, and to determine his sphere of usefulness in order to ascertain whether any such reasons do, as a matter of fact, exist.

The office of King's coroner affords an instance of an institution which, created many centuries ago for a specific purpose, has gradually undergone a complete change of function, but without having satisfactorily adapted itself to that change of function. The coroner dates back at least to the twelfth century, and was originally a revenue officer of the Crown. It was his duty to take possession of the revenues of the king. He had to find out criminals and confiscate their goods; to take possession in the name of the King of wrecks and stranded whales; and to seize treasure trove, an obligation which still remains. He came to inquire into deaths for the purpose of discovering whether the deceased was an outlaw or a suicide, as in that case his property escheated to the Crown. In the case of a death caused by some animal or inanimate thing he had to assess the value of the deodand which was forfeited to the Crown as compensation for the loss of a subject. Otherwise he had no interest in the matter, for pathology and vital statistics were still to come. As security against appropriation of the revenues so collected he had to own land "in fee sufficient," a condition which must still be complied with. This close connexion with judicial matters probably explains how it is that the office has so largely fallen into the hands of lawyers. But with the gradual evolution of society the character of the duties of the coroner changed. Escheat disappeared, revenues were collected by other officers, deodands were abolished by statute in 1846, and the holding of inquests on Royal fish or wrecks was expressly excluded by the Coroners Act of 1887. At the same time other reasons for inquiring into deaths came into existence. Accurate scientific information was required for the purpose of the Registrar-General's annual returns, for legislation connected with public health, industrial poisoning, food poisoning, infant mortality, factories, insurance, compensation, and many other matters of the highest public importance. The advantage in having a medical man to inquire into deaths from unnatural or unknown causes was to some extent recognised, and thus it has come about that in recent years the medical man has partly displaced the lawyer in the office of coroner, though the majority of coronerships in England and Wales are still held by solicitors.

A coroner is by 50 and 51 Vict., Ch. 71, required to hold an inquest where there is reasonable cause to suspect that a person has died a violent or unnatural death, or where there is a sudden death from causes unknown. Inasmuch as only cases possessing some sensational interest are regularly reported in the public press, considerable misapprehension exists among those not familiar with the coroner's court as to the character of the bulk of the work which is performed therein. Murders and manslaughters are reported in full, and as a result appear to form a much larger proportion of a coroner's inquiries than is

[1] THE LANCET, August 21st (p. 557), 1909, and April 2nd (p. 942) and 9th (p. 1009), 1910.

actually the case. Out of 37,092 inquests held in England and Wales in 1908 there were only 291 verdicts of murder and manslaughter together, or less than 0·8 per cent. The total number of persons actually tried for murder was only 67. It is generally believed that the coroner plays an important part in aiding the detection of these crimes, but his value in this respect is probably over-estimated. Whenever there is reason to suspect that crime has been committed, thorough and independent investigation is always made by the police, and indeed the coroner's own inquiries are usually made by the police, inquests being frequently adjourned in order to give them time to finish their investigations. The magistrate's inquiry is quite independent of the inquest, and if he commits for trial the facts are again recited before the higher tribunal. Recent events have furnished a striking illustration of the cumbersomeness of our procedure in requiring two preliminary inquiries before trial in cases of murder, with the consequent additional expense to the State and inconvenience to witnesses, counsel, and others concerned, who are required to make afresh statements already fully examined under oath at another court. There can be little doubt that the coroner's jurisdiction in this respect might be dispensed with, without detriment to the community.

On the other hand, the deaths of infants or children from such causes as inattention at birth, malnutrition, overlying, neglect, exposure, improper feeding, want of medical treatment, &c., although enormously more numerous, attract but little attention in the public press, and their frequency is seldom realised, yet out of the 37,092 inquests held in England and Wales in 1908, no less than 9935 were upon the bodies of children under seven years of age. This figure, of course, includes "natural deaths," but in a large proportion of so-called natural deaths conditions of neglect or ignorance are antecedent causes, though juries are loath to find so except in flagrant cases. It is in inquiries of this nature that the coroner has the greatest opportunity of performing public service. Neighbours are usually present, and any remarks he may make are repeated outside to a wider circle than those actually present in court. Thus his court may be made a centre for distributing knowledge among the ignorant poor. Whether it be in reference to medical treatment, suitable clothing, overlying, breast-feeding, or other kindred matters, a coroner can exercise a valuable influence tending to the decrease of infant and child mortality, though most of this highly desirable work passes unreported and almost unnoticed; not entirely unnoticed, however, for the influence of the coroner can be traced in more than one clause of the Children Act of 1908. There is, of course, no legal obligation upon a coroner to undertake these duties, but most of the medical coroners do act in this way, and everyone will admit the desirability of such action. The point does not need labouring that the intimate knowledge of child life and health requisite for this purpose is far more likely to be found in the medical man than in the lawyer.

Another direction in which coroners' inquests are, or should be, of great value is in the obtaining of accurate information for the purpose of the Registrar-General's annual returns. It must be remembered that not only are the cases which come before him involved, but that the attitude of the coroner will have an effect upon the certificates of all the medical practitioners in his district. Here, again, the medical man must necessarily have an advantage. It is not often nowadays that a verdict so remarkable as that quoted by the Select Committee of 1893 is recorded—viz., that "Deceased died from stone in the kidney, which stone he swallowed when lying on a gravel path in a state of drunkenness," though many verdicts of but little greater scientific value are still recorded by non-medical coroners. In a quite recent inquest on a person who had died with an effusion of blood from the mouth, the medical witness, in the absence of a post-mortem examination, declined to express an opinion as to the cause of death. Pressed to answer the question, he still adhered to his attitude. The coroner then turned to the jury and told them that although he was not a medical man he had had 30 years' experience, and he would inform them of the cause of death. It was rupture of a blood-vessel, and a verdict to that effect was accordingly returned. It might be said that the lawyer coroner can supply his deficiencies from the medical evidence placed before him. But it is clear that he must have medical knowledge to appreciate that evidence and to examine the witness upon it. He must also be able to distinguish essential from non-essential. At present the non-medical coroner is too apt to attach undue importance to such terms as "coma" or "syncope." "Convulsions" figures largely as a cause of death in the coroners' courts, although the term is one the use of which is expressly deprecated by the Registrar-General.

On behalf of the lawyer's claim to coronerships it has been urged rightly that his knowledge of law is of value, and that he has had experience of the laws and method of taking evidence. We think, however, that it is easier for a medical man to acquire in a short space of time the necessary knowledge of law than it is for the lawyer to acquire the medical knowledge without going through the usual hospital training.

One point more must be considered. Sir William Collins's Bill provides that a coroner may order a post-mortem examination to be made, and if he is satisfied in this way that death was due to natural causes he need not hold an inquest. This is a desirable reform in the present procedure, but seems to render it more imperative that the coroner should be a medical man. The interpretation and assessment at its proper value of a medical report is often a difficult matter, and to leave it in the hands of a layman may be a highly dangerous experiment. In his preliminary inquiries a coroner has no power to compel answers to questions, or to summon witnesses, or to examine them on oath. He must act on his own unassisted judgment. In 1908 there were 19,054 preliminary inquiries which were not followed by inquests, and there were 14,184 inquests in which verdicts of natural death were found. In every one of these cases the medical statement or evidence was presumably the determining factor, and yet the bulk of them were probably investigated by men who had never seen a post-mortem examination made.

If, instead of having existed from the twelfth century, we could imagine coroners now being created for the first time, it is probable that we should never think of appointing anyone but a medical man to inquire into a matter so essentially medical as the cause of death, though he would most likely be required to have had special experience, just as at the present moment the public health service is in the hands of medical men but with special experience. Nor is the cause of death the only medical matter which may be at issue: the whole domain of medicine may come under review in the coroner's court. The coroner should be capable of understanding and properly weighing evidence as to whether an infant was born alive or not, and whether it was mature or not. He may have to determine whether an operation was justified, and whether it was efficiently performed. He may be called upon to decide whether certain medical treatment was appropriate, or whether an anæsthetic was administered with due precautions. He must have a knowledge of the effects of poisons. He must be familiar with the symptoms and results of all forms of insanity. Medical evidence will be given before him on such matters and he has to interpret it to a jury.

It is only custom which has blinded us to the anomaly of a lawyer holding these inquiries. The office is essentially of a medical character. Sir William Collins's Bill contains much that is of value, and we trust it may be found possible to delete or modify the unsatisfactory provisions before it becomes law.

THE WATER-SUPPLY TO SOUTHEND.

TWENTY-FIVE years ago Southend had a resident population of 10,000 or 12,000; to-day its 60,000 permanent inhabitants are annually increased by a like number of summer visitors, the average consumption of water for all purposes being 32 gallons per head. Such a rapid increase of population in a district so unfavourably placed geologically for obtaining a pure and abundant water-supply is probably unequalled in the United Kingdom. A glance at a geological map shows that the great mass of the London clay covers the entire district to a depth of from 300 to 500 feet, with the exception of Grays and Purfleet. Beneath the clay are the lower London tertiaries of varying depth with the Thanet sands resting on the chalk, which is the principal water reservoir for South-East England. The rain falling

on any part of Essex south of a line drawn from Colchester, through Chelmsford, to Buntingford, drains off through natural surface channels, and is unavailable as the source of a large supply, though, of course, numbers of shallow wells sunk in pockets of gravel occur locally. Only rain falling north of this line, or where the chalk outcrops at Grays and Purfleet is available for Southend, and must travel long distances through the chalk.

At Grays and Purfleet water is obtainable in abundance, its character agreeing exactly with that obtained from the chalk on the south side of the Thames. The chalk, however, descends rapidly on all sides save the south, since at very short distances from the outcrop the chalk lies at a depth of 300 feet. The only water obtainable in this district is from the chalk or the overlying Thanet sands. The chalk is very compact and free from fissures, and does not yield water readily, and the Thanet sands are of so fine a texture that unless the pumping is comparatively slow sand comes up with the water and is a source of serious trouble. Some of the beds lying between the base of the London clay and the upper surface of the chalk yield water, limited in amount, but often of a very objectionable character in consequence of its containing large quantities of magnesium and calcium sulphates, which render it excessively hard and quite useless for drinking or any other domestic purpose. In sinking wells in the locality this water has to be effectually stopped out or the whole yield is rendered unusable.

Notwithstanding these difficulties, the water company which supplies the borough of Southend, the urban district of Leigh, and portions of the adjoining rural districts, has always provided an abundant supply of water to the rapidly increasing population. At first Southend alone was supplied from two borings nearly 900 feet deep situated in the parish, but as the population increased more and more wells were sunk, two or three miles apart, until they now number 21 and extend to Billericay, some 20 miles away. At the same time, the area of supply was extended so as to include parishes in which the wells were situated and others along the route of the mains. These wells vary in depth from 300 to 900 feet, and whether the water is drawn from the Thanet sands or from the chalk it is identical in character. It is very soft, and of the highest degree of organic purity. The last well sunk yielded water containing the constituents as under :—

	Grains per gallon.
Calcium carbonate	1·2
Magnesium carbonate...	0·4
Sodium carbonate	21·0
Sodium sulphate	9·1
Sodium chloride	22·7
Silica, &c.	0·9
Total ...	55·3

This analysis has been confirmed in THE LANCET laboratory, and in an experiment in which a strip of lead was placed in the water there was no action. This may be taken as typical of the water from the majority of the wells, though some contain a little more calcium salts. All the wells yield a very pure slightly alkaline saline water, of the kind which when it is found on the Continent is charged with carbonic acid gas, bottled and sent over here as a table water, and lauded for its virtues and for its purity. There is no doubt that water of this character, containing very little lime salts and a little sodium carbonate and chloride, is very palatable and very wholesome.

Only limited areas are supplied from any one well. The rising mains deliver into one of two very large covered storage reservoirs situated on commanding eminences, and these reservoirs supply by gravitation the various service reservoirs placed near the centres of population. Pollution of water derived from such sources and distributed in this manner may be said to be impossible, the supply being constant and not intercepted by domestic storage cisterns, which are a frequent source of danger. Every well is sunk through some 300 to 400 feet of London clay, which is of the most impervious character, and is lined throughout the sunk portion with iron cylinders above and brickwork set in cement below, and with the exception of one or two of the older wells all are in the open country, far from any habitations. Samples from three different parts of the district are submitted quarterly to chemical and bacteriological examinations by Dr. J. C. Thresh at the London Hospital, and once a year all the wells are examined and samples from each submitted to bacteriological examination.

Every care is therefore taken to provide Southend with a water absolutely beyond suspicion, and the rapid increase in population, as well as the natural disadvantages of site, have been perfectly met. These things give a medical interest to the matter.

REPORT OF THE PUNJAB PLAGUE COMMITTEE, 1910.

A COMMITTEE appointed by Sir Louis Dane, K.C.S.I., Lieutenant-Governor of the Punjab, to inquire into the utility of the present anti-plague policy and to report on the best means in the light of recent knowledge and experience of increasing its efficacy, assembled recently at Simla. The composition of the committee was as follows :—President : The Honourable Mr. A. Meredith, Indian Civil Service. Members : Colonel C. J. Bamber, I.M.S., Inspector-General of Civil Hospitals in the Punjab ; Lieutenant-Colonel C. P. Egerton, Indian Army ; Major E. Wilkinson, I.M.S., Sanitary Commissioner of the Punjab ; Mr. C. M. King, Indian Civil Service ; and Captain C. A. Gill, I.M.S., Chief Plague Medical Officer of the Punjab. This committee has issued a most important and interesting report which is particularly opportune in that the question of rat destruction and plague prophylaxis generally has been before the medical profession in this country recently owing to the detection of plague-infected rats in certain parts of East Anglia and other places.

Results of Anti-plague Measures.

In the Punjab Province during the past three years (1906–1909), at an expenditure of over £147,235, an active prophylactic campaign has been waged against plague. One of the main objects of the committee has been to ascertain whether the results of this heavy outlay have been commensurate with the expenditure incurred. They, however, find it a matter of some difficulty to pronounce a definite opinion on the question, and before doing so they place on record two main facts which the evidence before them clearly established : (1) that plague preventive measures have been the means of saving a vast amount of life ; and (2) that the natives of India look to Government, not only to aid them, but to take the initiative in maintaining the struggle against plague.

It has also been brought home to the committee, particularly by the evidence of Indian witnesses, that the measures which have been adopted with the object of suppressing plague have induced a desire for sanitary reform on the part of all classes of the population. In addition, the plague staff have performed useful service in administering medical relief in rural areas and they have also been of assistance in fighting epidemics of cholera and malaria. Last, but not least, the constant tours of the medical officers on plague duty in infected tracts have furnished the natives of India with a tangible proof of the solicitude taken by the Government in their welfare. On these grounds alone many of the witnesses examined were of opinion that the expenditure incurred by Government in furtherance of anti-plague measures was amply justified, and the committee fully endorse the views of those who consider that the cessation of anti-plague operations would be viewed with dismay and might possibly give rise to a feeling of discontent. They therefore think that, in view of the state of plague in the Punjab and the small likelihood of its amelioration in the near future, considerable expenditure will still be necessary. Postulating this, the committee appear to have carefully scrutinised the various preventive measures that are at present being employed, and they embody certain conclusions and recommendations in a thorough and able report, drawn up by Captain C. A. Gill, I.M.S., chief plague medical officer of the Punjab, who acted as secretary of the committee.

Recommendations and Conclusions of the Committee.

The chief recommendations and conclusions may be briefly stated as follows :—

General policy.—An active anti-plague policy on the part of Government is not only necessary but should be continued.

Rat destruction.—The destruction of rats in Punjab villages by means of poison for the purpose of preventing plague epidemics not being attended with success should be

abandoned on a large scale. Systematic trapping with traps (in the ratio of 2 per cent. of population) does not reduce the rats of Punjab towns and villages sufficiently to prevent plague epidemics. To diminish adequately the rat infestation of towns and villages by means of systematic trapping presents difficulties of such a magnitude as to render it an impracticable policy on a large scale. The destruction of rats by means of poisoning and trapping on the present lines does not yield results commensurate with the expenditure incurred, and it should be discontinued. The greatest prospects of success in preventing the spread of plague by means of rat destruction consist in attacking the comparatively few localities where plague persists during the quiescent period.

Anti-plague inoculation.—Anti-plague inoculation is essentially a personal prophylactic measure, and in recommending its adoption everything savouring of compulsion or pressure should be carefully avoided. During severe epidemics of plague regimental medical officers might with advantage be temporarily employed as inoculating officers in the recruiting area of their regiments.

Village sanitation.—For dealing with plague epidemics in villages, evacuation is a most important anti-plague measure, and means are suggested in the report to facilitate its more widespread adoption. Measures directed towards improving village sanitation and domestic hygiene are of the utmost importance, and efforts should be made to give effect to such simple measures of this nature as public opinion may endorse. The erection of model houses at the headquarters of districts, the removal where possible of manure from close proximity to village sites, and an increased conservancy staff for villages are desirable measures.

Disinfection.—The disinfection of infected houses during the course of an epidemic or after its cessation is not ordinarily necessary. Disinfection as applied to the clothing and baggage of persons coming from infected areas is a valuable means of preventing the spread of plague into non-infected areas and should be carried out whenever possible. The only measures of a compulsory nature which are permissible are those demanded by public opinion and capable of being put into operation by the people themselves.

Quarantine.—Certain measures to facilitate quarantine, isolation, and refusal of access in the case of villages should be adopted. The extension to the inhabitants of towns as well as villages of legal powers to prevent the access of persons coming from infective areas is recommended. The power possessed by Commissioners of prohibiting fairs in infective localities should be more freely exercised.

Reports.—An efficient system of intelligence whereby the presence of plague is rapidly reported is of the utmost importance. Certain alterations are suggested with a view to accelerating the receipt of infection reports by civil surgeons. The present procedure in regard to the reporting of plague occurrence should be cancelled and regulations practically identical with those already in force dealing with cholera should be substituted.

Finance.—Substantial money rewards should be offered for information regarding plague occurrence during the hot weather. The organisation and training of a lay agency are most important measures, and honorary plague officers should be appointed in all districts subject to infection. The submission by Commissioners to the Inspector-General of Civil Hospitals, Punjab, of a quarterly return showing the grants-in-aid made to local bodies from provincial funds is necessary. Rat destruction operations on the limited scale recommended by the committee should be a charge on provincial funds. Plague officers should be invited to attend the budget meetings of district boards. Certain proposals in regard to the various details connected with district organisation and administration are also embodied; these, however, call for no special remarks.

From this report it appears that with regard to preventive measures opinions as to what is best have undergone considerable changes. On the advice tendered by the committee the Punjab Government have decided to give up *general* rat destruction, but to continue it in *circumscribed areas* where the disease persists in the quiescent period (viz., during the summer months), which form foci for its distribution later in the year. On the question of disinfection the committee in making the following dogmatic statement are bound to invite criticism; they say: "In the light of recent knowledge it is clear that disinfection, either by heat, chemicals, or poisonous gases, can rarely be relied on to destroy permanently the infectivity of rooms and dwellings. The committee desire to emphasise this point, as they observe that not only is disinfection in some form or other popular with the people, but in some cases district officials have lent their authority to encourage its adoption on a large scale. It may therefore be mentioned that ordinarily the only procedure of this nature that is called for in plague-infected villages is the admission of light and air into infected houses and the exposure of their contents to the direct rays of the sun."

From a financial point of view this and the other recommendations already enumerated appear to foreshadow a reduction in the cost of anti-plague measures in the Punjab. And it is encouraging to note that the question of sanitary conservancy is to be taken up more fully in villages and that responsible sanitary officials will be placed in charge of rural areas.

THE CHOLERA EPIDEMIC.

(BY THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

Cholera in Russia.

THE epidemic in Russia continues to decline. The following figures are in continuation of those published in my last letter (which appeared in THE LANCET of Nov. 19th, p. 1507):—

Week ending	Sept.	11th	...	3878	cases,	2004	deaths.
,,	,,	,, 18th	...	2919	,,	1529	,,
,,	,,	,, 25th	...	2089	,,	1121	,,
,,	,,	Oct. 2nd	...	1022	,,	584	,,
,,	,,	,, 9th	...	823	,,	383	,,

The above are all "corrected" figures. For the succeeding three weeks only "uncorrected" figures are as yet available. They are as follows:—

Week ending	Oct.	16th	...	449	cases,	279	deaths.
,,	,,	,, 23rd	...	170	,,	110	,,
,,	,,	,, 30th	...	85	,,	35	,,

(The above dates are all according to the Old Style.)

The disease still lingers principally in St. Petersburg, in the valley of the Volga, in Central Asia, and Siberia. It has appeared at Vladivostok and in the Amur and Primorskaia (or maritime) provinces, on the Pacific coast. In the last named there were 196 cases and 76 deaths in the week ending Oct. 9th, 149 cases and 140 deaths in the next week, and 25 cases and 29 deaths in the week ending Oct. 23rd (Nov. 5th). These are "uncorrected" figures. The *Vratch* continues to publish week by week observations on the St. Petersburg water-supply. Of these, the following may be quoted. Of 24 samples of unfiltered water taken at the waterworks between August 30th and Sept. 2nd (Old Style), 10, or 42 per cent., contained the cholera vibrio; and of 64 samples of filtered water taken the same days 11, or 17 per cent., were also found contaminated. Out of 30 samples of water taken direct from the Neva, near its left bank, the cholera vibrio was found in no less than 22, or 73 per cent. In later observations the percentage of infected samples greatly diminished; and out of 14 samples of unfiltered water taken on Oct. 7th and 8th only 1 was found infected, while out of 34 of filtered water also only one contained the cholera bacillus. A serious outbreak of the disease occurred in October in the staff of the Penteleimon Lunatic Asylum in St. Petersburg; in the course of a few days there were as many as 41 cases of the disease here.

Cholera in Germany.

In the week ending Oct. 23rd 10 fresh cases of cholera were recorded, and on the 24th the whole German Empire was declared cholera free.

Cholera in Austria.

On Oct. 17th an imported case of cholera occurred at Trieste; the patient had left Rutigliani (near Bari), in Italy, on the 5th, had stopped seven days in Venice, and arrived in Trieste on the 13th; he was arrested as the result of a street fight, and developed symptoms of cholera in the night of the 14th–15th—i.e., nine days after he had left the infected area

in Italy. In the night of the 23–24th a child, aged 11, son of the "contrôleur" of the above prison, fell ill with cholera, and the diagnosis was confirmed bacteriologically. No other cases have occurred recently in Austria.

Cholera in Hungary.

In the week ending Oct. 22nd 28 cases and 14 deaths were recorded in 16 different places, situated in the counties of Bacs-Bodrog, Baranya, Tolna, Esztergom, Temes, and Torontal. In the week ending Oct. 29th 6 cases and 6 deaths occurred in seven different places situated in the first three of the above counties. On Oct. 21st the Hungarian Ministry of the Interior announced that the communes of Czrepaja and Klekk, in the county of Torontal, were declared "foyers de choléra"; in the former 17 cases had occurred between Sept. 22nd and Oct. 18th; and in a workman's colony at a sluice on the river 4 kilometres from Klekk 15 cases had occurred before Oct. 18th.

Cholera in Italy.

Complete information as to the recent behaviour of the epidemic in Italy has not been received here. For the week ending Oct. 26th the figures are wanting; in that ending Nov. 2nd 26 cases and 17 deaths occurred in the Province of Caserta; 6 cases and 3 deaths in that of Lecce (including 2 cases and 2 deaths at Brindisi); 6 cases at Palermo; 7 cases and 2 deaths in the Province of Rome (all at Terracina); and 8 cases in the Province of Salerno. (These figures have been communicated by the Turkish Embassy in Rome.) Sporadic cases are said to be occurring still at Brindisi, and (it is stated by the Turkish Consul in that port) the Italian journals mention the continued occurrence of cases at Massafra, Squinzano, Tricase, and Ostuni. All these places are situated in the "heel" of Italy.

Cholera in Bulgaria, Servia, and Roumania.

A fatal case of cholera was reported from Varna on Nov. 17th; the patient had arrived from Constantinople and had completed his five days' quarantine before he was attacked. No further cases of cholera have been reported from either Servia or Roumania.

Cholera in Constantinople and Turkey in Europe.

There has been a considerable extension of the cholera outbreak in this city, as shown by the following figures:—

Week ending	Oct.	24th	...	7	cases,	7	deaths.
,,	,,	,,	31st	...	8	,,	4	,,
,,	,,	Nov.	7th	...	63	,,	33	,,
,,	,,	,,	14th	...	132	,,	70	,,
,,	,,	,,	21st	...	173	,,	96	,,

These figures refer only to the civil population; the totals down to the 21st inst. were put at 477 cases and 264 deaths. At present from 20 to 40 cases are being reported daily, and the tendency is still for the figures to rise. The epidemic has no doubt been favoured by the exceptionally mild autumn and prolonged continuance of a warm south wind.

The above figures refer, as stated, solely to the civil population. But there has also been a considerable mortality from cholera among the troops. It is now established beyond doubt that the manœuvres recently held in the Adrianople vilayet have been largely instrumental in spreading cholera, if not in actually introducing it to the European provinces of Turkey and the capital. It is believed that the employment of troops from Trebizond in those manœuvres may have acted in this way. It is certain that the dispersal of troops after the manœuvres were over aided in spreading the infection far and wide. Of the behaviour of the disease during the actual manœuvres little is known. But cholera undoubtedly broke out at Adrianople itself; a serious epidemic occurred among the troops at Hademkeui (on the railway line between Adrianople and Constantinople); further cases were seen at Kirk Kilissé, Tchorlou, Kirdja Ali, and other places in the vilayet; and when the troops reached the coast of the sea of Marmara, and camped in the neighbourhood of Rodosto and Eregli, they were seriously ravaged by the disease. On Oct. 30th 4000 or 5000 of these men were put on board two ships to cross to the Asiatic coast, and during the few hours' voyage no less than 30 cases and 14 deaths from cholera occurred on one ship, while 13 cases were found on the other ship on their arrival at Touzla. The men were interned in the quarantine station at Touzla and subjected to quarantine and disinfection, but the disease continued to spread amongst them and in the village of Touzla adjoining. In the lazaret 99 cases with 69 deaths were seen between Oct. 30th and Nov. 7th, 92 cases and 57 deaths between the 7th and 14th, and some further cases and deaths in the following week. In the village a few cases occurred in each of those weeks. Between Nov. 12th and 19th as many as 25 cases with 19 deaths were recorded there. Meanwhile the outbreak at Rodosto and Eregli on the European side of the Marmara continued; complete figures have not been received, but it is certain that over 100 cases and half as many deaths have occurred there among troops and civilians, and it is possible that double or treble that number have occurred. In the capital itself many cases have been treated in most of the large military hospitals, but the figures hitherto made known are too incomplete, and furnished at too irregular intervals to be usefully quoted.

The most remarkable feature about the present epidemic in this city is the fact that the disease is present over a large proportion of the immense area that the city covers, extending from the Marmara to the Black Sea, and on both shores of the Bosphorus; that small numbers of cases continue to occur in each of the municipal divisions; and that only in one or two (such as Cassim Pasha, Fundukli, &c.) has a real "foyer" of infection formed.

On Nov. 16th, on the arrival of the Constantinople train at Salonica, a passenger was found dead in his compartment (according to the railway authorities); he had been taken ill shortly after passing the last station, where the passengers were medically examined, and died an hour before reaching Salonica. There was bacteriological proof that death was due to cholera.

Cholera in Asiatic Turkey.

In the vilayets of Erzerum and Van the epidemic continues to decline, as shown by the following figures:—

Week ending	Oct.	20th	...	23	cases,	22	deaths.
,,	,,	,,	27th	...	7	,,	4	,,
,,	,,	Nov.	3rd	...	24	,,	20	,,
,,	,,	,,	10th	...	5	,,	4	,,
,,	,,	,,	17th	...	0	,,	0	,,

In the Trebizond vilayet the disease is practically stationary. The following are the latest returns:—

Week ending	Oct.	23rd	...	23	cases,	21	deaths.
,,	,,	,,	30th	...	15	,,	9	,,
,,	,,	Nov.	6th	...	36	,,	14	,,
,,	,,	,,	13th	...	39	,,	23	,,
,,	,,	,,	20th	...	37	,,	23	,,

The totals here are put down at 639 cases and 352 deaths since the beginning of the outbreak on Sept. 16th.

A few cases of cholera have also occurred at Samsoun, at Kerassonde and Ordou, on the north coasts of Asia Minor, and at Zunguldak (port for the Heraclia mines) and neighbourhood some cases and deaths are still recorded weekly.

In the vilayet of Bagdad the infection has spread widely and caused a considerable mortality. The following returns (admittedly imperfect) have been received:—

From	Oct.	6th	to	Oct.	23rd	...	199	cases,	148 deaths.
,,	,,	24th	,,	,,	30th	...	191	,,	177 ,,
,,	,,	31st	,,	Nov.	6th	...	156	,,	140 ,,
,,	Nov.	7th	,,	,,	12th	...	18	,,	17 ,,
,,	,,	13th	,,	,,	19th	...	81	,,	62 ,,

The totals are put at 645 cases with 544 deaths for the whole vilayet. The disease has appeared not only in Bagdad but also in Kiazimieh, in Mossove, in Amara, in Samara, in Khanikin (on the Persian frontier), and many other places; and finally it has broken out at Kerbella, one of the Shiah holy burying places, where between Nov. 16th and 19th 26 cases and 20 deaths were recorded among Shiah pilgrims.

At Basra there were 13 cases of cholera and 9 deaths between Oct. 20th and 27th; 97 cases and 61 deaths between Oct. 28th and Nov. 3rd; 86 cases and 79 deaths between Nov. 4th and 13th; and 20 cases with 14 deaths between Nov. 13th and 18th. The lazaret of Basra (on the island of Salahieh in the Shatt-ul-Arab river) has also had to deal with considerable numbers of cases among Afghans, Indians, and others, and it seems possible that these persons were actually infected in the lazaret itself. Between Oct. 28th and Nov. 3rd 9 cases and 9 deaths occurred here (all Afghans); between Nov. 4th and 13th 23 cases and 15 deaths; and between Nov. 13th and 18th 4 cases with 4 deaths.

The movements of Moslem pilgrims towards the Hedjaz is now at its height, as the fêtes of Kurban Bairam will fall this year on about Dec. 10th, 12th, and 13th. That it will be a cholera-infected Haj can scarcely be doubted. Already many infected shiploads of pilgrims have been interned in the lazarets of Sinope (on the Black Sea), of Clazomene (near Smyrna), and Beirût, and without trespassing too much on your space it will be impossible to give the details of all these occurrences. The capacity of all these lazarets has been strained to the utmost, and in order to relieve them it was recently agreed between the Constantinople and Alexandria boards of health that pilgrims' ships from the north, going to the Hedjaz, should do their quarantine in the Egyptian lazaret of El Tor. Quite recently cholera has appeared in Smyrna—whether by spread from the Clazomene lazaret or not is not known. Some 13 indigenous cases have already occurred.

Cholera in Muscat.

The following are the latest returns from Muscat :—

Week ending	Oct. 29th	...	13 cases,	12	deaths.
,, ,,	Nov. 5th	...	—	8	,,
,, ,,	,, 12th	...	—	22	,,
,, ,,	,, 19th	...	—	3	,,

Cholera in Tripoli (Africa).

The following returns have been received from Tripoli (Barbary) since the beginning of the epidemic there on Oct. 3rd :—

Between	Oct.	3rd	and	Oct.	16th	...	12 cases,	9	deaths.
,,	,,	18th	,,	,,	23rd	...	28 ,,	22	,,
,,	,,	24th	,,	,,	29th	...	59 ,,	36	,,
,,	,,	30th	,,	Nov.	2nd	...	58 ,,	48	,,
,,	Nov.	6th	,,	,,	9th	...	50 ,,	31	,,
,,	,,	10th	,,	,,	14th	...	46 ,,	52	,,

It will be noted that these returns are for unequal intervals, and that the figures for some days are lacking. With these reservations the totals amount to 253 cases and 198 deaths. Consular reports from Tripoli give rather different figures; they state that down to Nov. 11th there had been 271 cases and 170 deaths, and add that, with the exception of 1 Maltese, 3 Arabs, and 2 or 3 foreigners, all the cases had occurred in the Jewish community.

Cholera in Tunisia.

Information respecting the cholera outbreak in the island of Jerba, off the coast of Tunisia, has been irregularly received, as shown by the following figures :—

On Oct. 25th							7 cases,	6	deaths.
Between	Oct.	30th	and	Nov.	2nd	...	55 ,,	42	,,
,,	Nov.	6th	,,	,,	9th	...	50 ,,	31	,,
,,	,,	10th	,,	,,	14th	...	32 ,,	36	,,
,,	,,	15th	,,	,,	21st	...	34 ,,	34	,,

Constantinople, Nov. 24th.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on Dec. 8th, Mr. BUTLIN, the President, being in the chair.

A report was read from the Board of Examiners in Anatomy and Physiology for the Fellowship, stating that 117 candidates were admitted to examination and of these 39 were approved and 78 rejected.

A report was read from the Court of Examiners concerning candidates found qualified for Diploma of Fellow. 67 candidates had presented themselves, and of these 26 acquitted themselves satisfactorily, including two candidates who had not yet attained the legal age of 25 years. It was resolved to issue Diplomas of Fellowship to the remaining 24 candidates. It was resolved to issue Licences in Dental Surgery to 42 candidates found qualified.

A report was received from the Committee on the Annual Report of the Council, and it was resolved, in accordance with the recommendation of the committee, to reply to the proposer and seconder of the resolution advocating the granting to Members representation on the Council, carried at the annual meeting, to the following effect :—

As the matter referred to in the resolution was fully considered by the Council during the present year they are not prepared to re-open the discussion.

The PRESIDENT reported that a vacancy had occurred on the Court of Examiners, and he stated that it would be filled at the meeting of the Council in January. Any Fellow of the College wishing to become a candidate for the office must make application in writing to the Secretary on or before Jan. 4th.

A letter was read from the Assistant Secretary of the Marine Department of the Board of Trade stating that the Board proposes to revise the scales of medicines and medical stores issued by them for merchant ships, and to entrust the revision to a committee consisting, as on the occasion of the last revision in 1888, of members of its medical staff and representatives of the Royal College of Surgeons, Royal College of Physicians, and Pharmaceutical Society of Great Britain, with the addition this time of a representative of the shipping interests concerned; and asking the Council to nominate a representative of the College to act on the committee. Mr. C. T. Dent was nominated to represent the College on the committee.

A letter was read from Sir Henry Morris, Bart., reporting the proceedings of the General Medical Council at its recent session. It was resolved that the best thanks of the Council should be given to Sir Henry Morris for his services as the representative of the College.

A letter was read from the Right Hon. the Lord Mayor announcing the opening of the Mansion House Fund for providing a memorial of King Edward in London, and asking the President to bring the appeal to the notice of Members of the College living in London.

The PRESIDENT reported the delivery of the Bradshaw lecture on Cancer on Dec. 7th by Sir A. Pearce Gould, K.C.V.O., 126 visitors, including Prince Alexander of Teck, being present. The best thanks of the Council were given to Sir A. Pearce Gould for his lecture and he was requested to publish it.

The Sir Gilbert Blane Medals were awarded to Fleet-Surgeon George Trevor Collingwood, M.V.O., H.M.S. *Racer*, 1909; and to Fleet-Surgeon Arthur Reginald Bankart, M.V.O., K.H.P., H.M. Yacht *Victoria and Albert*, 1909. These medals were founded by Sir Gilbert Blane, Bart., F.R.C.S., a distinguished physician best known for the sanitary reforms which he effected in the navy, and the success of the measures which he introduced for scurvy. Two gold medals are conferred once in every two years on two medical officers of the Royal Navy "who in the time required shall have delivered to the proper office journals evincing the most distinguished proofs of skill, diligence, humanity, and learning in the exercise of their professional duties." The journals are submitted for adjudication to the President of the Royal College of Physicians of London, the President of the Royal College of Surgeons of England, and the Director-General of the Medical Department of the Royal Navy.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 7869 births and 5445 deaths were registered during the week ending Dec. 10th. The annual rate of mortality in these towns, which had steadily increased in the six preceding weeks from 13·0 to 18·1 per 1000, declined to 16·8 in the week under notice. During the first ten weeks of the current quarter the death-rate in these towns averaged 14·8 per 1000. In London during the same period the death-rate, calculated on a probable over-estimate of its population, was equal to 15·5 per 1000. The annual death-rates last week in the 77 towns ranged from 6·4 in Wallasey, 7·4 in Barrow-in-Furness, 8·6 in King's Norton, and 9·4 in Leyton, to 21·7 in Brighton, 22·7 in Wigan, 24·0 in Tynemouth, and 24·5 in Preston. The 5445 deaths from all causes in the 77 towns last week showed a decline of 421 from the increasing numbers in recent weeks, and included 332 which were referred to the principal epidemic diseases, against 420 and 416 in the two preceding weeks; of these 332 deaths, 143 resulted from measles, 62 from whooping-cough, 39 from diarrhœa, 36 from diphtheria, 30 from scarlet fever, 21 from enteric fever, and 1 from small-pox. The mean annual rate of mortality from these epidemic diseases in the 77 towns last week fell to 1·0 per 1000 from 1·3 in each of the two previous weeks. No death from any of these epidemic diseases was registered last week

in Willesden, Sunderland, East Ham, Walthamstow, Leyton, Halifax, or in 14 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·3 in Portsmouth, 3·5 in Grimsby, 3·7 in Tynemouth, 3·9 in Rotherham, and 4·0 in Brighton. The fatal cases of measles in the 77 towns, which had steadily increased in the five preceding weeks from 101 to 231, declined last week to 143; the highest annual rates from this disease last week were 1·9 in Portsmouth, 2·1 in Grimsby, 2·4 in Brighton, and 3·1 in Rotherham. The 62 deaths from whooping-cough showed, however, an increase upon recent weekly numbers, and caused the highest rate in Reading. The 39 deaths attributed to diarrhœa were fewer than in any week since last winter. The 36 deaths referred to diphtheria showed a further decline from recent weekly numbers, and included 13 in London and its suburban districts, and 2 each in Portsmouth, Rochdale, Leeds, and Cardiff. The 30 fatal cases of scarlet fever exceeded the number in the previous week by 5; 3 occurred in Manchester and 2 each in West Ham, Birmingham, Liverpool, Bolton, and Sheffield. The deaths referred to enteric fever, which had been 25 and 24 in the two previous weeks, declined to 21 last week, and included 2 in Portsmouth, 2 in Burnley, 2 in Stockton-on-Tees, and 4 in Wigan, which were equal to an annual rate of 2·3 per 1000. The fatal case of small-pox was registered in St. Helens. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had declined in the four preceding weeks from 1882 to 1746, had further fallen to 1719 on Saturday last; 169 new cases of this disease were admitted to these hospitals during last week, against 180, 153, and 170 in the three preceding weeks. The 1703 deaths from all causes in London last week included 506 which were referred to pneumonia and other diseases of the respiratory system, against numbers increasing steadily from 246 to 669 in the five preceding weeks; they exceeded, however, by 140 the corrected average number in the corresponding week of the five years 1905–09. The causes of 49, or 0·9 per cent., of the deaths registered during last week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified last week in Leeds, Bristol, Nottingham, Leicester, Salford, Oldham, and in 47 other smaller towns; the 49 uncertified causes of death in the 77 towns last week included 9 in Birmingham, 7 in Liverpool, and 3 each in Stoke-on-Trent, Bootle, and Bury.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 838 births and 622 deaths were registered during the week ending Dec. 10th. The annual rate of mortality in these towns, which had steadily increased in the four preceding weeks from 13·3 to 17·5 per 1000, declined to 17·2 in the week under notice. During the first ten weeks of the current quarter the death-rate in these eight towns averaged 14·7 per 1000, and was slightly below the mean rate during the same period in the 77 largest English towns. The annual death-rates in the eight Scotch towns last week ranged from 14·0 and 16·0 in Aberdeen and Glasgow, to 19·0 in Paisley and 23·0 in Dundee. The 622 deaths from all causes in the eight towns last week showed a decline of 11 from the number in the previous week, and included 40 which were referred to the principal epidemic diseases, against 61, 55, and 47 in the three preceding weeks; of these 40 deaths, 13 resulted from diphtheria, 9 from diarrhœa, 8 from whooping-cough, 4 from scarlet fever, 4 from "fever," and 2 from measles, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the eight towns last week was equal to 1·1 per 1000, and exceeded by 0·1 the rate from the same diseases in the 77 English towns. The deaths referred to diphtheria in the eight Scotch towns, which had been 14 and 11 in the two preceding weeks, rose again to 13 last week, of which 7 occurred in Glasgow, and 3 both in Edinburgh and in Dundee. The 9 deaths attributed to diarrhœa showed a marked decline from the numbers in recent weeks, and included 2 each in Glasgow, Dundee, and Aberdeen. The fatal cases of whooping-cough, which had been 13, 12, and 10 in the three preceding weeks, further declined to 8 last week, of which 5 were returned in Leith and 3 in Glasgow. The 4 deaths from scarlet fever were fewer than in any recent week; 2 occurred in Dundee and 1 both in Glasgow and in Edinburgh. Of the 4 deaths referred to "fever" 3 were returned in Glasgow and 1 in Leith; 2 were certified as enteric fever, and 2 as cerebro-spinal meningitis, both of which occurred in Glasgow. The deaths referred to diseases of the respiratory system in the eight towns, which had increased from 65 to 157 in the four preceding weeks, declined to 151 last week, and were 123 below the number in the corresponding week of last year. The causes of 26, or 4·2 per cent., of the deaths in the eight towns last week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 533 births and 432 deaths were registered during the week ending Dec. 10th. The mean annual rate of mortality in these towns, which had been equal to 19·1 and 18·1 per 1000 in the two preceding weeks, rose to 19·6 in the week under notice. During the first ten weeks of the current quarter the annual death-rate in these Irish towns averaged 17·3 per 1000; the mean rate during the same period did not exceed 14·8 in the 77 largest English towns and 14·7 in the eight Scotch towns. The annual death-rate during last week was equal to 23·2 in Dublin, 20·1 in Belfast, 13·7 in Cork, 15·6 in Londonderry, 13·7 in Limerick, and 7·8 in Waterford; the mean annual death-rate last week in the 16 smallest of these Irish towns was equal to 17·0 per 1000. The 432 deaths from all causes in the 22 town districts last week showed an increase of 32 upon the number in the previous week, and included 33 which were referred to the principal epidemic diseases, against 29 and 36 in the two previous weeks; these 33 deaths were equal to an annual rate of 1·5 per 1000; in the 77 English towns the mean rate from the same diseases did not exceed 1·0 per 1000, and in the eight Scotch towns was equal to 1·1. The 36 deaths from these epidemic diseases in the Irish towns last week included 15 from whooping-cough, 5 from diphtheria, 6 from diarrhœa, 5 from measles, and 1 each from scarlet fever and enteric fever, but not one from small-pox. The 15 fatal cases of whooping-cough showed a marked increase upon recent weekly numbers, and included 11 in Dublin and 3 in Londonderry. Of the 6 deaths attributed to diarrhœa (fewer than in any recent week), 4 occurred in Belfast and 2 in Dublin. The 5 fatal cases of measles, of which 3 were returned in Belfast and 2 in Dublin, showed a decline of 9 from the number in the previous week. The 5 deaths from diphtheria, of which 4 occurred in Belfast, corresponded with the number in the previous week. The death from enteric fever was returned in Dublin, and that from scarlet fever in Belfast. The deaths in the 22 towns last week included 116 which were referred to pneumonia and other diseases of the respiratory system, against 80, 100, and 108 in the three preceding weeks. The causes of 18, or 4·2 per cent., of the deaths registered in the Irish towns last week were not certified; in the 77 English towns the proportion of uncertified deaths last week did not exceed 0·9 per cent., and in the eight Scotch towns it was equal to 4·2 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Order in Council of April 1st, 1881, Fleet-Surgeon Edward John Morley has been placed on the Retired List, with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets (dated Dec. 8th, 1910).

In accordance with the provisions of Order in Council of April 1st, 1881, Deputy Inspector-General of Hospitals and Fleets Joseph Crowley has been placed on the Retired List, at his own request, with permission to assume the rank of Inspector-General of Hospitals and Fleets (dated Dec. 7th, 1910).

The following appointments are notified:—Fleet-Surgeon: H. Spicer to the *Bristol*, on commissioning. Staff-Surgeons: J. C. Rowan to the *Albemarle*, on recommissioning; S. Croneen to the *Mars*, and L. E. Dartnell to the *Victorious*, temporary. Surgeon: C. H. L. Petch to the *Victory*, additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

Captain Edward Gibbon is seconded for service with the Egyptian Army (dated Nov. 13th, 1910.)

Colonel R. Porter has taken over duty as Principal Medical Officer at Malta. Colonel T. J. R. Lucas, principal medical officer of the First (Peshawar) Division, has been transferred from Cherat to Peshawar. Lieutenant-Colonel L. T. M. Nash has been selected to command the station hospital at Karachi in succession to Lieutenant-Colonel R. I. R. Macleod, appointed to command the station hospital at Aden. Lieutenant-Colonel G. F. Gubbin, on arrival home from Colaba, has been posted to the Irish Command. Lieutenant-Colonel A. E. Tate, from Ambala, has taken up duty at Kasauli. Lieutenant-Colonel W. E. Berryman has arrived home from India, tour-expired. An exchange on the foreign service roster has been approved by the War Office between Lieutenant-Colonel C. W. Johnson serving at Gibraltar, and Lieutenant-Colonel S. G. Allen serving in the London District. Lieutenant-Colonel G. Cree has arrived home, tour-expired, from Madras. Lieutenant-Colonel R. R. H. Moore, from Bulford Camp, has been appointed Administrative Medical Officer at Belfast, vice Lieutenant-Colonel E. J. E Risk. Major C. W. H. Whitestone has been transferred from Cherat to Peshawar. Major H. A. L. Howell, from Gibraltar, has taken up duty as Medical Officer in charge of the Royal Army Clothing Factory at Pimlico. Major J. E. Carter, from Landguard Fort, has joined at Chatham. Major A. F. Tyrrell has joined for duty at Fermoy from Kilworth Camp. Major A. O. B. Wroughton has been transferred from the Eastern Command to the Southern Command and appointed Specialist in Dermatology and Venereal Diseases at the Military Hospital, Hilsea. Major H. P. W. Barrow, on termination of his appointment as Adjutant of No. 3 (West Lancashire Division) District R.A.M.C. Territorial Force School of Instruction, has embarked for a tour of service in Jamaica. Captain W. R. Galwey has been appointed Staff Surgeon at Lahore Cantonment. Captain J. P. Lynch, Captain A. Dawson, Captain E. W. Powell, and Captain A. D. O'Carrol have arrived home from India. Captain J. M. Cuthbert has been appointed Specialist in Pathology at Edinburgh. Captain E. W. Powell, from Belgaum, on arrival at Aden, has been placed in charge of the Brigade Laboratory. The following officers (Captains) have joined at the Royal Army Medical College for a course of instruction for promotion to the rank of Major: H. T. Stack, B. G. Patch, A. C. H. Gray, T. S. Dudding, R. H. MacNicol, H. H. J. Fawcett, S. L. Pallant, C. R. Sylvester-Bradley, S. E. Lewis, P. J. Hanafin, J. D. Richmond, E. M. Glanvill, W. MacD. MacDowall, T. J. Wright, F. J. Turner, E C. Whitehead, and R. B. Hole. Captain D. Ahein has been transferred from Cork to Limerick. Captain G. A. Kempthorne, from Amritsar, has joined for duty at Dalhousie. Captain A. F. Carlyon, on termination of his leave from West Africa, has been posted to Devonport. Lieutenant T. W. Stallybrass has joined at the Royal Victoria Hospital, Netley, from Hamilton Camp. Lieutenant A. T. J. McCreery, from West Down North, has been posted to Birmingham. Lieutenant B. A. Odlum, from Tidworth Park, has embarked for a tour of service in South Africa.

INDIAN MEDICAL SERVICE.

Colonel G. W. P. Dennys has been appointed Principal Medical Officer of the Aden Brigade in succession to Colonel W. A. Quayle, transferred as Principal Medical Officer of the Abbottabad and Sialkot Brigades. Lieutenant-Colonel H. B. Melville has been appointed to officiate as Civil Surgeon of Simla West during the absence on leave of Lieutenant-Colonel F. O'Kinealy. Lieutenant-Colonel E. Jennings, Superintendent of the Central Prison at Fategarh, has been granted one month's privilege leave. Lieutenant-Colonel W. H. B. Robinson, Residency Surgeon at Jaipur, has been appointed by the Foreign Department of the Government of India to be Residency Surgeon in Rajputana, in succession to Lieutenant-Colonel H. N. V. Harington, on his retirement. Major A. W. T. Buist has been appointed Civil Surgeon at Ambala. Major J. C. Holdich-Leicester has been granted two years' combined leave home from India. Major A. Leventon has been appointed Civil Surgeon at Darrang. The services of Captain A. E. Grisewood have been placed at the disposal of the Punjab Government for plague duty. Captain H. Watts, district plague medical officer at Hoshiarpur, has been detailed for a course of instruction in clinical bacteriology and technique at the Central Research Institute, Kasauli. The services of Captain H. Ross have been temporarily placed at the disposal of the Government of the United Provinces. Captain R. Kelsall has been appointed to officiate as Resident Medical Officer of the Rangoon General Hospital, vice Captain H. A. Williams, D.S.O., appointed Officiating Superintendent of the same institution. Captain H. C. Buckley has had his leave extended.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Henry R. Borcherds is confirmed in his rank.

The undermentioned lieutenants are seconded for service with the Medical Unit of the Edinburgh University Contingent, Officers Training Corps (dated Oct. 1st, 1910):—William Darling and John M. Darling.

TERRITORIAL FORCE.

Royal Army Medical Corps.

2nd Home Counties Field Ambulance, Royal Army Medical Corps: Captain David L. Hamilton to be Major (dated Dec. 14th, 1910).

4th Southern General Hospital, Royal Army Medical Corps: Captain Arthur E. Carver resigns his commission (dated Dec. 14th, 1910).

5th Southern General Hospital, Royal Army Medical Corps: Captain John Kyffin, from the List of Officers attached to Units other than Medical Units, to be Major (dated Sept. 28th, 1910).

3rd East Anglian Field Ambulance, Royal Army Medical Corps: Walter Rowland Southall Roberts to be Lieutenant (to be supernumerary) (dated Nov. 1st, 1910).

3rd Northumbrian Field Ambulance, Royal Army Medical Corps: Lieutenant Abram C. Barker resigns his commission (dated Dec. 10th, 1910).

2nd West Riding Field Ambulance, Royal Army Medical Corps: Quartermaster and Honorary Lieutenant James Boswell is granted the honorary rank of Captain (dated Nov. 11th, 1910).

Attached to Units other than Medical Units.—Captain John W. T. Walker resigns his commission (dated Dec. 10th, 1910).—Lieutenant Francis W. Squair to be Captain (dated Nov. 17th, 1910).

For attachment to Units other than Medical Units.—George Cordy Jeaffreson to be Lieutenant (dated Nov. 7th, 1910).

Officers Training Corps.

Edinburgh University Contingent, Senior Division, Officers Training Corps: Lieutenant William Darling (serving with the medical unit), to be granted the local rank of Captain, with the pay and allowances of that rank (dated Oct. 1st, 1910).

THE TERRITORIAL FORCE NURSING SERVICE.

On Nov. 13th the Lady Mayoress presided at the annual meeting of the Grand Committee of the City and County of London Territorial Force Nursing Service, which was held at the Mansion House. The annual report showed that the expenditure had been £33, and that applications for enrolment continued to be numerous.

DEATHS IN THE SERVICES.

Brigade-Surgeon-Lieutenant-Colonel John Mackenzie, A.M.D., at Dover, in his seventy-eighth year. He entered the service in 1858 as assistant surgeon, and reached the rank of brigade-surgeon in 1884. He served throughout the campaign of 1860 in North China (medal) and retired in 1888.

THE HEALTH OF THE ROYAL NAVY.

The annual statistical report of the health of the Navy for the year 1909 shows that, compared with the preceding five years, the health of the service continues to improve, the invaliding and death ratios being lower and the average loss of service for each person less. The report, with which we hope to deal more fully in an early issue of THE LANCET, contains interesting appendices on vision, on colour tests, and on beri-beri.

Captain Howard Ensor, D.S.O., R.A.M.C., has been granted the Royal licence and authority to accept and wear the Imperial Ottoman Order of the Osmanieh, Fourth Class, which has been conferred upon him by the Khedive of Egypt in recognition of valuable services rendered.

Correspondence.

"Audi alteram partem."

CARCINOMA IS A PARASITIC DISEASE.

To the Editor of THE LANCET.

SIR,—Sir Alfred Pearce Gould, in his most interesting and suggestive lecture on cancer, at which I had the satisfaction of presiding at the Royal College of Surgeons of England on Dec. 7th, criticised very courteously the views which were expressed in my Bradshaw lecture five years ago.[1] He quoted my "text" correctly: "That the carcinoma cell is an independent organism, &c.," but he did not correctly quote the arguments I used later in the lecture. For his next paragraph (addressed to me) was as follows: "You shrank from accepting Hauser's suggestion that the protozoal cells of cancer are derived or descended from the living cells of the host, and asserted rather that 'the parasite is introduced into the body from without.'"[2] My actual words are thus quoted and the only place in which I can find them in your report of my lecture is in the following sentence: "I suppose we must then assume that *the parasite is introduced into the body from without*, after the manner of parasites generally; or that it is formed, in some unknown manner, within the body of the host."[3]

After discussing the evidence in favour first of the external, then of the internal, origin of the carcinoma cell, I said: "It must be admitted that these three features of carcinoma, the characters of the cell, the structure of the tumour, and the age-incidence, make it difficult to conceive the idea of a parasite introduced into the body from without. And they do strongly suggest that the parasite is actually formed or developed within the body of the host, and that it is in some manner derived from the elements of the host. Hauser has no doubt that his new race of cells is derived from the elements of the host, and appears to find no difficulty in the hypothesis. I confess to me it is an astounding proposition, for, set forth in plain terms, it is none other than the origin of new species of the lowest forms of animal—of protozoa. The mode of origin which is suggested is so different from that we have been accustomed to accept for the last five-and-twenty years that I scarcely dare to set it down in words. That there will be much discussion and dispute over it I cannot doubt, for I am quite confident that time and research will confirm the view I have expressed to-day of the nature of the carcinoma cell."[4]

In order to be sure of the views I had expressed, I read my lecture through very carefully. There is no doubt that I heartily wished, at the time I delivered it, that the evidence would be in favour of the entrance of the carcinoma cell from without. But I was forced to acknowledge that the evidence was stronger in favour of the formation of the cell within the body. Following the argument to its logical conclusion, I was further forced to admit that, if this were so, it would be necessary to admit that the carcinoma cell is a new creation, and, still further, that it was probable this new creation was derived from the elements of the host. No wonder, in the face of this conclusion, I was astonished at the light manner in which Hauser treated the hypothesis. I am sure the real truth never dawned upon him. Nor do I think that Dr. C. Powell White,[5] who expressed the view "that the cells themselves of cancer act as parasites," really appreciated the significance of his suggestion. For he takes the view of Adami that the cells acquire the "habit of growth." "Once the cells have acquired this habit they behave as independent parasites."[6]

I am very glad that Sir Alfred Pearce Gould has given me the opportunity of again stating my case. It has never been out of my mind for long together during the last five years. I have been watching all the new evidence which has been derived from observation and experiment, and have been collecting certain evidence on my own part with the intention of again advancing and defending the argument of the Bradshaw lecture of 1905. I shall hope to do this in the course of the coming year, either in a couple of lectures or in some other manner.

In the meantime I would say that every discovery of the last five years is in favour of the "text" of my Bradshaw lecture: "That the carcinoma cell is an independent organism, like many a protozoon; that it lives a life which is wholly independent and proper to itself; and that it lives as a parasite in the body of the animal which is affected with carcinoma, deriving its nourishment from this host, and doing nothing to repay the host for the sustenance of which it robs him." The evidence which was at that time a little in favour of the internal as against the external origin of the carcinoma cell has been much strengthened. And I am prepared to apply the theory to cancer of every kind instead of limiting it (as I did five years ago for convenience) to carcinoma.

I am, Sir, yours faithfully,

Dec. 12th, 1910. HENRY T. BUTLIN.

[1] THE LANCET, 1905, vol. ii., 1748.
[2] THE LANCET, 1910, vol. ii., p. 1665.
[3] Loc. cit., p. 1753.
[4] Loc. cit., p. 1753.
[5] When I first formed the opinion that the carcinoma cell is an independent organism and acts as a parasite in the body of the host, I did not know it had ever been previously expressed. Shortly before delivering the Bradshaw lecture I discovered Hauser's paper in Ziegler's Beiträge, 33, S. I., 1903; and, two years ago, Dr. C. Powell White pointed out to me that he had made a similar suggestion in his Erasmus Wilson lectures at the College of Surgeons in 1902. In his "Lectures on the Pathology of Cancer," Manchester, 1908, he concludes the last lecture with these words: "We can say, then, that cancer is not due to a specific parasite or parasites, but, on the other hand, we can say that the cancer cells themselves act as parasites. This latter view will explain all the phenomena of cancer."
[6] THE LANCET, 1902, vol. i., p. 494.

THE BRADSHAW LECTURE ON CANCER.

To the Editor of THE LANCET.

SIR,—In Sir Alfred Pearce Gould's most interesting Bradshaw Lecture on Cancer he notes that primary cancer is not always single. Years ago, in the post-mortem room of Guy's Hospital, several times in the course of ten years or so I came across what seemed to be two independent centres of cancer in the same body. Such cases, however, do not occur often, unless, perhaps, new growths are too hastily assumed to be *secondary* when they are not really so, and I am by no means sure that this may not sometimes be the case. But what I did more commonly find, as others must have done, was the presence of innocent new growths in the same body with malignant ones, multiple lipomata or fibromata more especially. And it has always seemed to me that the two phenomena may need consideration the one with the other when the origin of cancer is in question.

I am, Sir, yours faithfully,

Portland-place, W., Dec. 10th, 1910. JAMES F. GOODHART.

A CORRECTION.

To the Editor of THE LANCET.

SIR,—I would not have trespassed on your valuable space had your reviewer of the "Phases of Evolution and Heredity" not shown a most ludicrous ignorance of the subject criticised. He states on p. 1618 of THE LANCET of Dec. 3rd: "To put it briefly, the 'theory' suggested by himself is that 'the gametes, before combination to form a zygote, do not contain the complete outfit of determinants necessary to form an adult and its progeny'; that changes in the zygote make up the necessary complement; and it is these zygotic changes which produce the results known as 'Mendelian.'"

This definition of what your reviewer terms "Mendelian results" is quite absurd. The union of the necessary gametes whose chromosomes have been reduced to a half by the loss of the polar bodies makes up a zygote with the necessary number of chromosomes, as van Beneden showed in 1883. This is a great fundamental fact in embryology, but has to do with fertilisation, not with Mendelism. The statement that my theory is "that changes in the zygote make up the necessary complement" is probably the best imitation of Lewis Carroll's nonsense that I have read. When the zygote is formed the chromosomes are complete and need no supplement. What the review shows is that your reviewer has not grasped the elements on which fertilisation is based.

My difficulty, however, is to find out from your reviewer's caricature what theory he refers to. I suspect it is the theory of zygotic segregation that has confused him.

The essence of Mendelism is, in my opinion, autonomy of the unit-characters, so that they do not blend in transmission, but reappear unchanged in a certain ratio. The results of

Mendel's experiments were to show that the contrasted unit-characters gave plants with these contrasted characters in the ratio 1:2:1, a frequency result. Mendel's theory—gametic segregation—was that this was a frequency result due to the combination of the pollen grains and egg cells and thus like $(a + b)^2$ we get 1:2:1. For reasons I need not state here I have suggested that the determinants of the unit-characters are segregated according to the law of frequency, and that this happens in the zygote. This was suggested to me by the changes in the free-martin, a sterile bull usually co-twin with a potent bull, both derived from one zygote, where in the zygote the unit-character (epoöphoron and prostatic utricle) is segregated into the sterile animal. The question of gametic combination *versus* zygotic segregation is the most important in Mendelism. Everything depends on it—it is not a "slight criticism of Mendelism"—and that is my main reason for troubling you with this letter.

I am, Sir, yours faithfully,

Edinburgh, Dec. 5th, 1910. D. BERRY HART.

*** The author's complaint is just. The attribution to him in the review of the statement that "changes in the zygote make up the necessary complement, &c.," was an error. It should, of course, have been explicitly stated that the zygotic segregation specially insisted on by the author is subsequent to the union of gametes which makes up this necessary complement. Our reviewer writes regretting the error, adding: "But that it was not due to a misunderstanding or purposive misrepresentation of the author's special theory is clear from the subsequent quotations from pp. 94, 95 of the book. The sentence quoted by the author as the reviewer's 'definition' of Mendelian results was not a definition of anything, but merely a condensed indication of the line of argument employed to lead up to the author's theory of 'zygotic segregation' or division of the zygote into a 'propagative and a somatic part,' which he opposes to the hypothesis of gametic segregation as set forth by Mendel. The reviewer's error, even if it had been made in ignorance, does not touch the main criticism, which is, in effect, that the intrinsic theory of variation, &c., is but a hypothetical amendment, or an attempt at a reconciliation, of certain existing hypotheses rather than a comprehensive handling of the subject as a whole."—ED. L.

THE INTRAVENOUS INJECTION OF SALVARSAN, OR "606."

To the Editor of THE LANCET.

SIR,—Salvarsan, or "606," to give Professor Ehrlich's salt its more popular name, may be given by intramuscular or by intravenous injection. When administered intramuscularly there is for some few days after undoubtedly a very considerable amount of pain, which may be controlled by morphia; but morphia, whatever "606" may turn out to be, is certainly no cure for syphilis, and the patient is better without any further addition from the Pharmacopœia of a poisonous nature, saturated, as he already is, with the spirochæta and the salvarsan. On the other hand, when the injection is made directly into the vein, there is no pain caused beyond the prick of the needle, either at the time of the operation or afterwards.

This point alone is a very definite reason for a preference in favour of the intravenous method, and a reason to which the patient himself would be the first to subscribe. Beyond this, however, I think I can, reasoning by analogy, give good cause to show why it should also have the preference over intramuscular injection on account of its probable greater action and efficiency when introduced intravenously. Now, during the years 1896–1897, when I published a paper on the Technique of the Treatment of Syphilis by Intravenous Injection of Mercury,[1] I had certain primary and secondary cases in private undergoing six-week courses of this treatment three times a year over two years, with, at the time, highly satisfactory results. These cases being in private enabled me, when Wassermann perfected his reaction, to communicate with them and to obtain their blood for the purpose of finding if they were positive or negative to the disease.

Although, from the point of view of statistics, the numbers are not numerous enough to deduce any absolute conclusion, yet the way their bloods have been returned as negative, without exception, is highly suggestive of the efficacy of that treatment by mercury directly into the blood-stream. The reason for this efficacy is, I take it, that the medicament is directly introduced into the very atmosphere of the body, into the blood-stream itself, and so has the same advantages as the spirochæta which has taken the same road to reach the most out-of-the-way cells and tissues, where, taking part in their metabolism, the "war" with the poison is carried on simultaneously and immediately all over the body. Again, owing to the rapid excretion of the mercury when given in this way, the injections being repeated three times a week, the specific poison receives hard and direct blows delivered against it with a very telling frequency.

Now if this reasoning is correct for Hg, how much more important is it to make the blow delivered by salvarsan a "knock-out" one; for here we are aiming at attaining our object of the total destruction of the spirochæta by means of one single injection, and look upon the necessity of repeating the operation as a comparative failure; for, whatever Hg may do, there is a probability that the complicated molecule we name salvarsan or "606" induces the blood to give rise to an antigen, because if we fail with the first dose to annihilate, any second dose must be greater in quantity to enable us to produce the desired result. In conclusion, therefore, if we have in salvarsan a bullet which will kill the enemy, I hope I have given some good reason for showing how we can make that bullet a dum-dum.

I am, Sir, yours faithfully,

Sackville-street, W. JAMES B. BYLES.

[1] Brit. Med. Jour., April 4th, 1897.

THE OWNERSHIP OF PRESCRIPTIONS.

To the Editor of THE LANCET.

SIR,—I am glad to learn from Dr. Lucas Benham's letter, which appears in this week's issue of THE LANCET, that my article on the above subject has excited interest, and has been on the whole approved so far afield, and particularly that Dr. Benham makes it a practice to indicate on the face of every prescription he writes the maximum time for which it should be used. This excellent practice deserves, however, to be supported by better arguments than those which can be deduced from the analogy—in my opinion a false one—of a cheque. There is no parity in the conditions. A cheque is an order addressed to a banker, requiring him to pay a sum of money to a certain person, or to the bearer of the cheque, out of funds previously deposited with him by the writer of the cheque. A prescription is a formula given by a physician to his patient, who can have it compounded by any competent person he chooses to employ. The banker is an agent of the maker of the cheque; the dispenser is an independent contractor who deals only with the holder of the prescription. These are the conditions generally obtaining in this country; they may perhaps be modified in South Australia.

I am, Sir, yours faithfully,

Middle Temple, Dec. 12th, 1910. H. WIPPELL GADD.

THE RESULTS OF BRONCHIAL OBSTRUCTION.

To the Editor of THE LANCET.

SIR,—I have just read Dr. Newton Pitt's admirable Bradshaw Lecture with great interest, for it has taught me something that I did not know before, although that something has been under my observation for many years and I have missed it. I refer to the fact that a partial compression of a bronchus is capable of producing an over-distended lung. On finishing Dr. Pitt's lecture I immediately looked up my skiagrams of aneurysm, and found that three out of seven show the condition distinctly. I have not yet had time to go through my hospital cases, but intend doing so on the first opportunity. As Dr. Pitt has kindly mentioned my name in connexion with two of the published skiagrams I feel that a word about them will not be out of place. I remember the cases well, as they occurred in Victoria Park Hospital. The skiagram shown in Fig. 7 was actually mistaken for a pneumothorax, but that was as long ago as 1902; since

then we have become more critical. I am quite sure now that the case was one of overdistended lung and not a pneumothorax, for the following simple reason that I have never seen a skiagram of a pneumothorax that did not show a shadow of the collapsed lung. The shadow of the collapsed lung of course varies a good deal, but it is always there. It may show a very considerable shadow, as in Fig. 8 of Dr. Pitt's lecture, due, no doubt, to the tuberculous infiltration preventing complete collapse. In other cases the shadow of the collapsed lung can be seen running beside the spinal shadow, but it is always there. I hope to place these cases on record shortly.

I am, Sir, yours faithfully,

Harley-street, W., Dec. 10th, 1910. HUGH WALSHAM.

TREATMENT OF ULCERS OF THE LEG BY A PASTE.

To the Editor of THE LANCET.

SIR,—Your annotation in THE LANCET of Dec. 10th, p. 1716, implies that Dr. B. A. Thomas has discovered a new treatment for varicose ulcers. Twenty years ago when an outpatient dresser at St. Thomas's Hospital I spent most of my time dressing varicose ulcers more or less successfully with what we as students called "Unna's"—the composition of this paste being glycerine, gelatin, and zinc oxide—applied warm on carbolic gauze. I still use this preparation, and it is quite the best provided the dressing is applied from the arch of the foot to the tubercle of the tibia.

I am, Sir, yours faithfully,

Bromley, Kent, Dec. 10th, 1910. C. W. GRANT-WILSON.

INVALIDITY INSURANCE.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Dec. 10th Mr. W. A. Robertson, actuary, Century Insurance Company, raises the question of invalidity insurance in a most interesting manner. In doing so he states that whilst mortality is improving invalidity is increasing, and he bases his argument on the grounds of the available statistics of his company during the past 25 years with reference to sickness insurance. Quite recently, elsewhere, I had the opportunity of raising and discussing this very question with Mr. Robertson, and now that it has appeared in the columns of THE LANCET I would like to add a few remarks. Remembering that I am engaged as medical examiner to insurance companies in London, I cannot accept his deductions as to an increased invalidity as they are based upon selected statistics which are always open to error, and for the same reason "returns" from benefit societies are not a true index as to increase of invalidity. For my purpose it is unnecessary to refer to the conditions under which sickness policies are issued to the public, and the members of the medical profession are well aware of the amount of abuse that arises in connexion with benefit societies. I need only cite the cases where men in addition to having a sickness policy are also members of two or three benefit societies to show how erroneous it would be to draw any conclusion as to increased invalidity from any statistics relating to such persons. I am sure that all students of public health and preventive medicine will require stronger proofs on the question of increased invalidity than those forthcoming from insurance companies and benefit societies. I take it as a significant sign of the times to find the insurance companies appreciating and acknowledging the achievements of public health and preventive medicine, and in my opinion it will not be long before all large commercial undertakings will find it to their advantage to have the assistance of medical men holding the D.P.H. I need hardly say that the statistics published and compiled by the life offices have no relation to those relating to sickness insurance, and if they did not relate to selected lives could be taken as a true index to the mortality of the entire community.

I am, Sir, yours faithfully,

Cannon-street, E.C., Dec. 12th, 1910. JOHN J. SCANLAN.

To the Editor of THE LANCET.

SIR,—Mr. W. A. Robertson's letter on Invalidity Insurance in your last issue contains some interesting statistics of the relative amount of sick benefit paid to members of different ages under a system of sickness insurance during the past 25 years. The statistics referred to in the letter do not, however, give any support to the assertion that "it is an indisputable fact that sickness is actually on the increase." The returns of the Century Insurance Company, to which Mr. Robertson, as actuary, has access, may quite probably show an increasing rate of claims for sick benefit among the members in recent years, although his letter does not contain any proof of such increase. Moreover, if the existence of such increase be assumed, it could not be accepted as proof of any real increase of sickness, but only as proof that under this system of insurance, as Mr. Robertson admits, "people now lie up where previously they would have continued to work." A satisfactory national system of sickness insurance has long been a desideratum with those interested in sanitary progress, but the differentiation of what constitutes definite sickness presents one of the difficulties that still stand in the way of its realisation. Mr. Robertson remarks on the incongruity of his assumed fact that "while mortality is declining invalidity is increasing," and it would indeed be surprising if a real increase of sickness could be proved to exist coincidently with the recent steady decrease in the national death-rate. Insurance against sickness, and the resulting benefit during invalidity, is undoubtedly beneficial to public health, and very probably assists in reducing the death-rate, but it is obviously impossible to accept increase of payments by an insurance company for sick benefit as conclusive proof of a real increase of sickness, even among its members. Similarly, experience of the results of the Workmen's Compensation Act suggests a marked increase of accidents and injuries to workmen, but should not be accepted as any proof of actual increase in the proportion of occurring accidents and injuries. If Mr. Robertson has access to statistics showing a marked increase in the ratio of sick benefit paid to the members of his company in recent years, they would be interesting, but they must not be assumed to prove actual increase in the ratio of national sickness.

I am, Sir, yours faithfully,

Surbiton, Dec. 12th, 1910. NOEL A. HUMPHREYS.

THE MOTOR FUNCTIONS OF THE STOMACH.

To the Editor of THE LANCET.

SIR,—I have been interested in reading the criticisms, by Dr. Arthur F. Hertz, of my recent small article on the Motor Functions of the Stomach. One ought to welcome criticism, but that of Dr. Hertz is based very largely on his own personal observations and interpretations of these, which one has yet to learn have been so widely accepted as he appears to imagine. His quotation of authorities (and manner of speech) would lead one to think that all of them are in agreement with him, and that all phenomena in connexion with this subject are simple, straightforward, easy to demonstrate, and further, that "Mr. Gray's" is the only dissentient voice, which is, however, negligible in that "Mr. Gray" is hopelessly behind the times! One knows that the quoted authorities do not agree on many points with Dr. Hertz, as I shall show in the case of some of them.

I should like to criticise his letter in return, paragraph by paragraph, because he has charged me with "numerous inaccuracies" and "mistakes"!

In the first paragraph he states that I ascribe, in papers published in 1908, "the discovery of secretin to Wertheimer, without even mentioning the names of Bayliss and Starling." The actual words in my first paper (Feb. 22nd, 1908) are "as Wertheimer and others have shown, acid in the duodenum excites the production of secretin." In the same paragraph of my paper an extensive quotation, duly ascribed to Starling, appears.

With regard to the second paragraph, *my* first observations on the human stomach with the X rays were made in the *vertical as well as* the horizontal position. If Dr. Hertz had taken the trouble to read *accurately* my second paper (July 25th, 1908) he would have seen this and been possibly prevented from hinting that I had been less thorough in my methods than he, seeing that his patients up till then

had been examined only in the horizontal posture. This is, however, a small matter! In spite of previously having read Dr. Hertz's paper, which he kindly sent to me, in which he gives "reasons in detail" for being convinced that there is no such thing as a "middle sphincter," I have yet to be convinced that there is not.

I shall next consider paragraph 5, in which Dr. Hertz expresses a wish to know the names of "recent radiographers and others" who "assert that the pylorus during gastric digestion descends naturally below and to the left of the umbilicus." In consideration of the possibility that Dr. Hertz has placed the names of his "recognised authorities" on the subject in what he estimates as order of merit, I am quite pleased to take the combined statements of the first two. Barclay (Proceedings of the Royal Society of Medicine, Electro-Therapeutical Section, February, 1909) says: "The whole organ is placed to the left and seldom transgresses the middle line except when it is full of food, and then only by half an inch or so. Its lower border is usually a little below the umbilicus in the upright position," and Pfahler (quoted by Dr. Hertz in his paper of July, 1910), and also Holzknecht, state that in their "normal" stomach the pylorus is the lowest point! It is but just to remark that Barclay says that it "was very exceptional to find the pylorus as the lowest point." If the two premier authorities of Dr. Hertz's list disagree in this way, whom are we to believe, especially as both disagree with Dr. Hertz?

Reverting to paragraphs 3 and 4, Dr. Hertz has evidently an idea differing from mine as to what is to be taken as the dividing line between the cardiac and pyloric portions of the stomach. I may say that my ideas have been based on the description given by the late Professor Cunningham, which is practically repeated by Dr. Hertz in his paper which was published so late as July, 1910. I stated in my papers that peristalsis occurs in the distal part of the cardiac portion, and this statement has been made by others—for example, some of Dr. Hertz's "recognised authorities." I shall be obliged if Dr. Hertz will quote any "recognised authority" other than himself to justify his remark that it is "now universally acknowledged (except by Mr. Gray) that there is no peristalsis in the cardiac end." It is pleasant to think that Dr. Hertz admits and figures in his paper of July, 1910, that a tonic contraction, sufficient to keep the walls of the empty stomach in close apposition, affects the whole of the stomach beyond the fundus, which is after all but a small part of the cardiac end. Why should peristalsis affect only a small part of this tonically contracted tube? I submit that my observations are supported by the anatomical findings of such an indubitably "recognised authority" as the late Professor Cunningham. So far as his other statements in these two paragraphs are concerned, I can only say that Dr. Hertz appears to have unbounded confidence in the infallibility of his own observations. If they are correct of course I am wrong.

In paragraph 6 Dr. Hertz asks, "Who are the 'recent radiographers' who say that 'carbohydrate food' begins to pass through the pylorus (displaced as described) in 15 to 20 minutes, and proteid in 30 to 45 minutes?" Again I seek to take an average, but quote, for accuracy, Dr. Hertz's first-mentioned "recognised authority"—viz., Barclay—he who says that "the whole organ is placed to the left," and therefore the pylorus must also be. Barclay says that carbohydrate food commences to pass "out of the stomach" in from 5 to 40 minutes. That is to say, he observes the passage of food through a sphincter which is evidently situated to the *left* of the midline. Dr. Hertz evidently agrees that the pylorus occupies its usually accepted position to the *right* of the middle line. Does it not appear reasonable to suggest that Barclay mistakes "the middle sphincter for the pylorus," and, further, that these are the times when food begins to pass through the middle sphincter? The statements made by Dr. Hertz in this paragraph, "that food, whatever its nature, begins to pass through the pylorus at once," is news! This may occur in infants, but all his "recognised authorities" differ from him, as well as do the previously recorded statements of Dr. Hertz himself. One supposes, of course, that Dr. Hertz speaks of ordinary *food*, not ordinary water or even albumin water. Are we to disregard all the work of physiologists, physicians, and even some surgeons with regard to the check action of the pylorus which has hitherto been regarded, under normal conditions, to require at least a little free hydrochloric acid before its sphincter action is unloosened?

In paragraph 7 Dr. Hertz again refers to Dr. Barclay (who places the pylorus in a wrong position) as confirming his own observations in connexion with duodenal ulcer. "The picture of a normal stomach exhibiting excessive peristalsis and passing the food on very rapidly is always suggestive of trouble in or about the duodenum." It is "universally acknowledged" (possibly there are exceptions) that hyperchlorhydria is a concomitant of ulcer, whether gastric or duodenal. Dr. Hertz agrees (in his paper of July, 1910) that hydrochloric acid is possibly the chief chemical stimulant of peristalsis, and there is little wonder that peristalsis should be excessive if the hydrochloric acid is excessive, but it has also been agreed that hydrochloric acid in marked excess stimulates pyloric spasm. I repeat, therefore, my remark that the interpretations of radiographers require criticism. One cannot allow that Dr. Barclay's observations confirm Dr. Hertz's when they differ on such an important point as the position of the pylorus.

With regard to Dr. Hertz's further remark, that he cannot understand how the period of relief of hunger pain is evidence in favour of a middle sphincter, I reply that it is to my mind just as much so as the relief of hunger pain of duodenal ulcer is evidence of pylorospasm. Destructive criticism, especially in the absence of confirmation, is easy—let Dr. Hertz give a reasonable explanation!

With regard to Dr. Hertz's remarks in paragraph 8, I may say that I have repeatedly seen intestinal segmentation, both as represented by the skiagraphic picture of the intestinal contents and also by direct vision of exposed human intestine. If Professor Cunningham's representation of the muscular coat of the stomach is correct I maintain that *modified* segmentation *is* possible in the part along the lesser curvature of the cardiac portion, and my observations in certain cases have led me to compare the passage of food masses along this part to the passage of segmented masses along the intestine. These may possibly be the same as the "blobs" referred to by Dr. Hertz and Dr. Barclay.

The literature on this subject is beset with so many contradictory statements that confirmation or criticism is urgently required. I shall be extremely glad if I stimulate others to take up the matter so that the truth may be arrived at as nearly as possible. As I indicated in my paper of Dec. 3rd, I shall not at all object to accept new views, but at present the ones I hold explain most easily and rationally clinical symptoms both before and after the operation of gastro-enterostomy.

I am, Sir, yours faithfully,

Aberdeen, Dec. 10th, 1910. H. M. W. GRAY.

THE USE OF "606."

To the Editor of THE LANCET.

SIR,—In view of the fact that the Ehrlich-Hata preparation, or "606," is now being put on the market, it is well to consider how far this preparation has fulfilled its expectations. That it has a rapid healing effect in certain cases appears definite, but the earlier reports of its wonderful effects were premature and probably exaggerated. The claim that it could effect an abortive cure of syphilis, or "sterilisatio magna," has not been substantiated. Professor Neisser, who was at first an ardent supporter of the new treatment, has since modified his opinion and recommends a combination with mercury and iodides. Professor Gaucher is anything but enthusiastic, and considers "606" only indicated in cases which resist mercurial treatment, but that such cases are rare. As regards the toxic effects of the drug, these appear to be less than those of atoxyl and arsacetin, but several deaths have occurred after injections of "606," some of which, if not entirely due to the drug, were probably hastened by it. Under these circumstances, it appears questionable whether we are justified in submitting patients, in the great majority of cases of syphilis, to treatment by "606," and perhaps losing valuable time by neglecting mercury and iodides.

I am, Sir, yours faithfully,

C. F. MARSHALL.

St. John's Wood Park, N.W., Dec. 10th, 1910.

TORONTO FREE HOSPITAL FOR CONSUMPTIVES AND THE KING EDWARD SANATORIUM FOR CONSUMPTIVES.

(FROM A SPECIAL CORRESPONDENT.)

THESE institutions, which are under the same control, are situated at a distance of four or five miles from Toronto, and the Free Hospital for Consumptives at the time of its establishment in the year 1904 was a somewhat new departure in therapeutics. The Muskoka sanatoriums for tuberculous patients, concerning which I wrote some few weeks ago,[1] were established for the treatment of those suffering from tuberculosis residing in any part of the province of Ontario, whereas the Toronto institutions are only for those afflicted with the disease who are residents of Toronto itself. Moreover, the especially distinguishing feature of the Toronto Free Hospital for Consumptives is that advanced, even far advanced, cases of tuberculosis are received—in fact, those cases that other hospitals refuse. It is a truism to state that in cities one of the chief causes of the spread of tuberculosis is infection from advanced cases. Persons with limited means are compelled to live in crowded houses and small, ill-ventilated rooms, by which the danger of infection is greatly increased. There is no doubt that if advanced cases could be strictly isolated tuberculosis in towns would not be nearly so rife as it is now. The Toronto Free Hospital for Consumption was the first institution established in this country for minimising the danger. By the courtesy of Mr. W. G. Gage, chairman of the board of directors, I was invited to visit the hospital, and accordingly travelled thither by street car. The first portion of the journey took me through a part of the factory district of Toronto, and I was greatly struck by the neat and even picturesque appearance of the factory buildings. These offered a complete contrast to the majority of such buildings on the outskirts of British cities, grimy unpleasant-looking places for the most part. The Toronto factories are housed in clean comfortable buildings, covered by creeping plants and with flowers at the windows. The latter part of the journey is through beautiful rural scenery, and the situation of the institutions themselves could scarcely be bettered. They are placed at a distance of perhaps half a mile from the main road, standing in grounds of 40 acres, on a plateau overlooking the lovely valley of the Humber.

The Free Hospital.

Regarding the buildings which constitute the Free Hospital, it must be understood that they are quite unambitious in design and architecture and seem to fit in with the scenery exactly. Their erection has been an example of making bricks without much straw. The original building was a farmhouse which has been added to as necessity or occasion demanded, and the result is seen in a rambling line of low buildings, mostly of wood. The farmhouse is now used for administrative purposes, and contains the offices of the medical attendants, dispensary, examination room, and rooms for the accommodation of the staff. Dr. W. J. Dobbie, physician-in-chief, was good enough to show me over the institution and to give me all the information asked for. The staff consists of the physician-in-chief and two assistant medical men, a lady superintendent, and about 20 nurses. The accommodation for patients is sufficient for 140, 100 or so being housed in the Free Hospital, while the King Edward Sanatorium will hold 38 patients. At the time of my visit the Free Hospital was practically full. Seventy inmates were able to get about to a greater or less extent, whilst 30 were entirely confined to their beds. The equipment of the hospital is adequate and thorough, and the latest scientific appliances are provided. The women are placed in the front of the building, and as far as is possible the fresh-air treatment is adhered to. Along the front of the hospital are wide verandah rooms, the glass shutters of which may be raised or lowered as the medical attendant may think fit. Fig. 1 represents women taking the fresh-air treatment in winter. The far advanced cases are confined to their beds in the upper storey, the majority of these having separate rooms. Men patients who have the disease in a less advanced stage live in shacks similar to those described in the article on the Muskoka Sanatoriums, these shacks being placed at the back of the main building at right angles to it at one side, the other side being occupied by nine old railway street cars; thus the main building, shacks, and street cars enclose a good-sized space which is utilised for garden purposes. Consequently there is no lack of air and light on all sides of the buildings. Each shack contains from six to eight beds with ample lavatory arrangements. The use of the old street cars was suggested both by motives of economy and convenience. They were presented by the Toronto Street Railway Company. Each makes an excellently cosy room and contains a bed, a stove, and some simple articles of furniture. The street cars are greatly in favour with the patients as places of abode, mainly, no doubt, on account of the comparative privacy ensured thereby. Fig. 2 represents the exteriors of the street-car homes. There are 12 children in the Free Hospital at the present time, for whom a schoolroom and teacher are provided. Dr. Dobbie is now having the large verandah at the end of the administration building fitted with glass shutters and equipped in such a manner that it may be used as an open-air schoolroom. It should be mentioned that the patients' beds are not placed close to the wall, for the reason that the floor on all sides of the bed may be the more easily cleaned. The spittoons provided are small flat tin boxes, in which are placed fairly tight-fitting boxes made of stiff moisture-proof paper. At regular intervals the inside boxes are removed and destroyed, thus doing away with the need for disinfecting the spittoons perpetually, while affording the opportunity for easily examining the sputum. The handkerchiefs used are made from soft, cheap cotton material, buttercloth in fact, and are destroyed after use.

The patients who can do light work are encouraged in this course. The ones who are able to be up are expected to make their own beds and to keep tidy their particular parts of the ward. To two men is given the duty of cutting the rolls of buttercloth into handkerchiefs, and to two women is given the duty of folding the serviettes for the table. Another patient burns daily the sputum-boxes. The experiment is being tried of placing the enclosed vegetable garden already referred to under the charge of patients. Indoor amusements are provided both for men and women.

During the past five years the statistics of treatment of *far advanced* cases has been as follows: apparently cured, none; disease arrested, 1; much improved, 42; stationary, 40; failed, 30; died, 282. The figures for the *advanced* cases during the past five years were as follows: apparently cured, 3; disease arrested, 21; much improved, 148; stationary, 60; failed, 20; died, 41.

As said before, the great benefit to the community at large in having advanced cases of tuberculosis carefully isolated is the main *raison d'être* of the hospital, and considered from this point of view its value has doubtless been incalculable. Towards the upkeep of the Free Hospital the city of Toronto subscribes the sum of 70 cents (3*s*.) per capita daily, and the provincial authorities make a further contribution of $3 (12*s*.) per week for each patient.

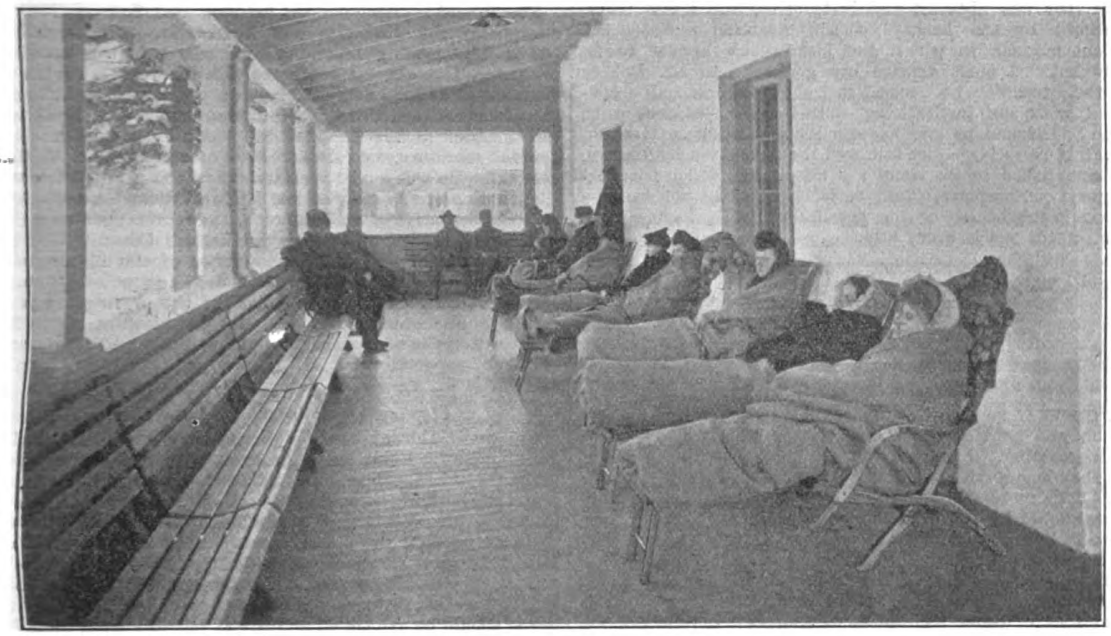
The King Edward Sanatorium.

The King Edward Sanatorium for Consumptives, which was opened to receive patients in September, 1907, is designed to care for tuberculous patients in the incipient and moderately advanced stages. The sanatorium buildings are situated some 300 yards from the Free Hospital buildings. The building which contains the administrative offices and rooms was the gift of the late H. C. Hammond of Toronto. The sanatorium itself, termed the Mulholland Building, was the gift of Robert Mulholland of Toronto. To this building is attached the dining-room building. The three buildings are connected by a covered corridor. The Mulholland Building is particularly handsome, well-built, and spacious; bathrooms are provided on each floor, and a wide verandah extends the whole length of the building on one side. There are also large sheltered balconies at each end of the building on the second floor. Provision has been made in the attic for a clinical laboratory and a room for microscopy. The ordinary patients at the sanatorium are required to pay 70 cents (3*s*.) a day, and a few private rooms are provided at $15 (£3) a week. On the second floor of the dining-room building are the sleeping rooms for the employees.

The water-supply is obtained from spring wells, pumped

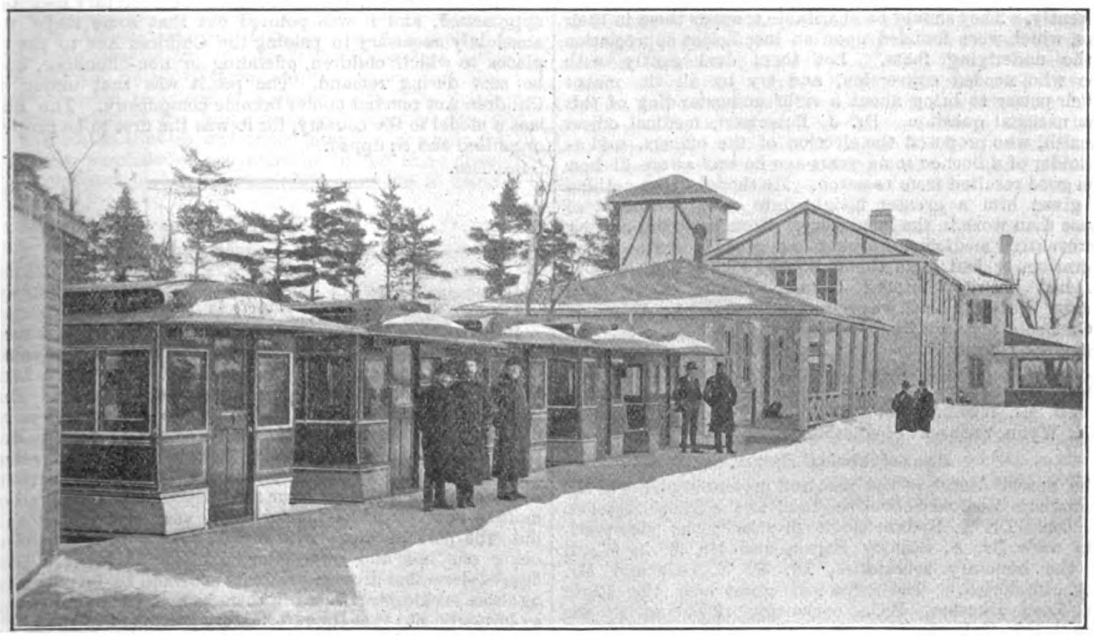
[1] THE LANCET, Oct. 1st, 1910, p. 1041.

FIG. 1.



Wide verandah room, with glass shutters, in which women are taking the fresh air treatment in winter at the Toronto Free Hospital for Consumptives.

FIG. 2.



Old street cars utilised as rooms for men patients, with whom they are greatly in favour, at the Toronto Free Hospital for Consumptives. Each contains a bed, a stove, and some simple articles of furniture.

by windmill, electric motor, and compressed air. There is a complete septic-tank system for dealing with the sewage. Heating is by steam, with several open fire-places, and the lighting is by electricity. The physician-in-chief has a house in the grounds at some little distance from the hospital buildings.

My visit was pleasant and instructive, and I was much impressed by the beauty of the situation and by the efficient manner in which the institutions appear to be conducted. I must express my gratitude to Dr. Dobbie for the trouble he took in showing me all connected with the institutions, and for the patience with which he listened to and answered my questions. It would be well if every large city followed the lead given by Toronto and established in its vicinity a hospital in which poor far-advanced consumptives could be isolated, so as not to be a menace to the health of the population, while having their urgent needs met in every way.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Research Defence Society.

A GENERAL meeting of the members of the Birmingham branch was held at the University on Dec. 2nd, Professor Leith presiding. Reporting on the past year, the President said they began with a membership of 109, and it was now 276. This number they hoped to increase considerably, and efforts should be made to induce working men, nurses, and others to become associate members. During the year they had received a very valuable gift from Lord Justice Fletcher Moulton—1900 copies of his evidence before the Royal Commission on Vivisection. Good use had been made of this as well as of other pamphlets in educating public opinion and obtaining members. Professor Frankland's public lecture on the Life of Pasteur had been very successful, and another public lecture would be given early next year. He proposed the adoption of the report. Mr. Gilbert Barling, in seconding, said that the branch were taking active steps to bring before the public the necessity for experimental work on animals and the benefits to be derived therefrom. Sir James Sawyer, in supporting the proposition, said that the branch had adopted the right attitude in that while they were firm in maintaining the benefits of research to medical science and practice, they did not aggressively oppose those who thought differently. They should be charitable towards them in their views, which were founded upon an insufficient appreciation of the underlying facts. Let them deal gently with those who needed conversion, and try by all the means in their power to bring about a right understanding of this great national question. Dr. J. Robertson, medical officer of health, who proposed the election of the officers, said as the holder of a licence some years ago he was aware of how much good resulted from research. He thought that nothing had given him a greater insight into certain aspects of disease than work in the laboratory. From the point of view of preventive medicine, nothing had given them so much inspiration, or had done the nation so much good, as work that had been stimulated by experiments made upon animals. Professor Leith was re-elected president; Alderman C. G. Beale and Sir George Kenrick vice-presidents; Dr. T. Shadick Higgins, treasurer; Mr. Chatwin, secretary; and Mrs. Gilbert Barling, Mrs. Godfrey Nettlefold, Mrs. Eric Carter, Mr. Gilbert Barling, Mr. Carey Gilson, Mr. A. S. Bennett, Mr. Wilson King, Mr. J. Furneaux Jordan, and Dr. W. H. Wynn, members of committee.

Annual Medical Dinner.

The annual dinner of the past and present students of the Birmingham Medical School was held at the Grand Hotel on Dec. 6th. Dr. T. Sydney Short presided; the vice-presidents were Dr. A. Stanley Barnes and Mr. B. J. Ward, and the honorary secretaries, Dr. C. E. Salt and Mr. R. A. Broderick. The principal guest was the Right Hon. Lord Ilkeston, P.C., consulting physician to the General Hospital. In proposing the toast of "The Medical School," Lord Ilkeston gave many interesting reminiscences of his work in connexion with the old Queen's College, whose staff he joined in 1861 as lecturer on anatomy. Among the other guests present were the Hon. Stephen Foster, recently appointed stipendiary magistrate in the city, and Sir Oliver Lodge. Musical items were contributed by Mr. J. R. Heath, Mr. B. A. Lloyd, and Dr. Browning. The attendance at the dinner was the largest for several years.

General Medical Practitioners' Union.

The annual smoking concert held on Dec. 2nd was largely attended by the medical men of the district. The President, Dr. H. W. Langley Browne, in the course of the evening, presented the general secretary, Mr. James Neal, with an illuminated address and a cabinet of plate in recognition of his considerable services to the profession. Mr. Neal was the founder of the General Practitioners' Union, and its general secretary, as well as editor of the *Midland Medical Journal*. He was a past-president of the Central division of the Birmingham branch of the British Medical Association, the representative of the branch at the representatives meeting, and a member of the Central Ethical Committee. He was also a member of the committee of the Birmingham Medical Institute. Few men have done so much to promote cordial relations between members of the profession and to create public spirit. Mr. Neal, in thanking members for their gift, spoke of the assistance he had received from many of them, especially Dr. G. J. Branson, Dr. W. T. Lydall, and Dr. E. W. Parsey, in promoting their common aims.

Birmingham Children's Remand Home.

The first children's court in this country was established in Birmingham in 1905; another considerable step has now been taken by the opening of a children's remand home. The site and building are the gift of Mr. and Mrs. Barrow Cadbury. It was desired that the building should have as little as possible the appearance of an "institution," and Messrs. Cosins, Peacock, and Bewlay have designed an attractive Georgian house. It was opened by the Lord Mayor on Dec. 9th, who said that the idea was that the house should be associated as little as possible with the police administration. The alternative to a remand home had been the workhouse. That was illogical. The board of guardians had homes of its own to which it sent children in order to keep them away from the workhouse; yet the magistrates had been remanding children to the workhouse. The authorities were very grateful to the donors, through whose generosity a great capital expenditure had been saved, and there would be no expense to the rates. The watch committee, however, had offered to contribute certain statutory sums per head for the maintenance of the children. Mr. Courtenay Lord, who presided, said that the Home Secretary had been approached, and it was pointed out that some steps were absolutely necessary in passing the Children Act to provide places to which children, offending or non-offending, could be sent during remand. The result was that under the Children Act remand homes became compulsory. The home was a model to the country, for it was the first to be properly organised and equipped.

Dec. 13th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Inebriates Acts in Scotland.

IN a report to the Secretary for Scotland, issued last week, the Inspector for Scotland under the Inebriates Act says that during the year ending Dec. 31st, 1909, there were in all nine institutions under his inspection, including three licensed retreats, five certified inebriate reformatories, and one State reformatory. The total number of persons dealt with during the year was 239, of whom 121 were retreat patients, and 118 reformatory patients. Compared with the returns of the previous year the institutions numbered one more, a new retreat having during the year received a licence, but the persons dealt with are 34 fewer, retreat patients being one less and reformatory inmates 33 fewer. These figures show that licensed retreats continue to be patronised by those seeking treatment in them to about the same extent as formerly, but that the reformatory treatment of the police-court drunkard is now being less seldom used.

Retiral of Sir Hector Cameron.

On the occasion of his retirement from the chair of clinical surgery in the University of Glasgow and from the staff of

the Western Infirmary, Sir Hector Cameron was last week entertained to dinner by his former assistants and house surgeons. The chair was occupied by Mr. A. Ernest Maylard, and Dr. Marshall, Dr. J. H. Nicoll, and Dr. Parry acted as croupiers. The company numbered upwards of 40. In proposing the toast of the evening, the chairman spoke of the admiration in which their guest had always been held by those who, like themselves, had been in some way associated with him. As a teacher and a leader in surgery they honoured him; as a man they loved and respected him; and they might justly say that everything he had said was worth listening to, and everything he had written was worth reading. Sir Hector Cameron was endowed with a wonderful memory, and they hoped he would long be spared to give to the profession "valuable material from his carefully garnered store." Sir Hector Cameron, in acknowledging the toast, made an interesting and felicitous reply. Dr. Joshua Ferguson, on behalf of the company, presented the guest with a loving cup, which bore the inscription: "H. C. C., Magistro Carissimo, Discipuli. MCMX." After Sir Hector Cameron had accepted the cup, the proceedings terminated with the singing of "Auld Lang Syne."

Day Nurseries in Dundee.

At the annual meeting in the town-hall, Dundee, on Dec. 5th, presided over by the Lord Provost, the good work done by the day nurseries in the city was recounted. The Rev. Thomas Best, in moving the adoption of the report and accounts for the year, said, when one thought of 30,000 admissions during the currency of a single year, and of what each admission meant in easing the burden of care from a mother's heart and mind, one felt that words were inadequate to give expression to what that implied. The report for the year showed that the mothers had contributed no less than £376 13*s.* 10*d.* 6752 penny dinners were sold during the year.

Rats and Plague in Dundee.

"Careful inquiries at the harbour and slaughter-houses reveal the fact that there is neither an undue prevalence of rats, nor any undue mortality amongst the rats in the city." This was reported by Dr. C. Templeman on Dec. 6th at a meeting of the public health committee. The investigation was made on account of a circular from the Local Government Board asking that investigations should be made into the condition and number of rats in the town.

Honour to an Orcadian Doctor.

On Dec. 1st Dr. David Suttie, who for the last 14 years has been medical officer to the Birsay, Hanay, and Sandwick Medical Aid Association, was presented with a purse of sovereigns in recognition of his faithful services. The occasion was Dr. Suttie's leaving for Glasgow, and Mrs. Suttie was also the recipient of a similar gift. Dr. Suttie, in replying, spoke of the kindness it had been his lot to receive, and stated that it was their intention to apply the money to the purchase of souvenirs to remind them of the happy years spent in an Orcadian home among a warm-hearted people.

Outbreak of Fire at the City Hospital, Aberdeen.

On Dec. 9th an alarming outbreak of fire occurred at the City Hospital, Aberdeen. The outbreak was first observed by a nurse about 9 o'clock, and the fire station was at once communicated with, while the doctor, matron, and nurses brought the chemical appliances into operation and kept the fire in check meantime. The fire arose in the basement of the administration block and was caused by a hot-water pipe setting fire to a beam, from whence it spread to the adjoining joisting, and but for the prompt action of the hospital staff would soon have obtained a firm hold. The damage, covered by insurance, is considerable. The patients were at no time in any danger.

Death of a Dundee Practitioner.

The death took place on Dec. 5th of Mr. Peter Steven, F.R.C.S. Edin., a well-known medical practitioner in Dundee. Mr. Steven was a native of Dundee, a son of the late James Steven, Rosebank, and after serving his apprenticeship with the late Dr. Cocks, a prominent ophthalmic surgeon in the city, he went to Glasgow, where he qualified in 1860. During his student days he made several trips to the Arctic regions in trawlers, and thus gained practical experience in a department of Dundee trade. He enjoyed a considerable general practice in Dundee, although devoting himself largely to surgical work. He died, aged 81 years, after a three weeks' illness.

Glasgow and Aberdeen Universities: Sir Henry Craik Returned Unopposed.

Sir Henry Craik has been returned unopposed as the Unionist Member for Glasgow and Aberdeen Universities.

Dec. 13th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Dublin Hospitals' Tuberculosis Committee.

THE quarterly meeting of this committee was held on Dec. 8th at 76, Grafton-street, Sir John Moore being in the chair. Her Excellency the Countess of Aberdeen, Dr. M. F. Cox, Dr. Herbert Byrne, Mr. O'C. J. Delahoyde, Dr. Frank Dunne, Dr. T. P. C. Kirkpatrick, Dr. J. F. O'Carroll, Dr. G. Peacocke, and the honorary secretary (Sir William J. Thompson) were present. The committee adopted the report of the subcommittee appointed to draw up a resolution with regard to the notification of tuberculosis. This report, which points out "that the detection and isolation of cases of pulmonary tuberculosis in all stages are necessary in the interests of the public health," was directed to be sent to the Local Government Board and also to the Presidents of the Royal College of Physicians and the Royal College of Surgeons. The good work which the nurses do amongst the consumptive poor of the city of Dublin is strikingly illustrated by the large proportion of patients who voluntarily ask for their services. During the nine months ended Nov. 19th, 353 cases of tuberculosis were attended by three district nurses, who paid 4719 visits. The poverty of the patients may be gathered from the statement that 155 families received nourishment, and 116 patients received gifts of clothes, shoes, and bedding. Lady Aberdeen reported that the P. F. Collier Tuberculosis Dispensary in Charles-street was fast approaching completion, and that early next year it would be ready and all arrangements made to commence work.

Association of Fellows of the Royal College of Surgeons in Ireland.

The inaugural dinner of the Association of Fellows of the Royal College of Surgeons in Ireland was held last Saturday night at the Gresham Hotel, Dublin, the President of the association, Lieutenant-Colonel F. G. Adye-Curran being in the chair. There was a fairly large attendance of Fellows and guests, and in the speeches attention was drawn to the disabilities under which Irish candidates suffer in regard to certain hospital appointments in England. The association has taken steps to record its protest against a condition which often appears in Irish advertisements of surgical vacancies—"Candidates must be Fellows of the Royal College of Surgeons in Ireland." The President stated that some of the members wished to enforce in Ireland the "Sinn Fein" policy of Ireland for the Irish, but with that view he had no sympathy.

Dublin Gas.

Last week a good many Dublin householders were annoyed by the presence of an unpleasant smell, and not unnaturally the condition of their drains became suspect. In many cases tests were applied to the drains. When this had gone on for a week or more it was announced on behalf of the gas company that owing to a defect in one of the gas purifiers a certain amount of sulphuretted hydrogen was present in the gas supplied to consumers. The amount must have been considerable, as one medical man reports the occurrence in his own case of unpleasant symptoms, such as headache and nausea.

Food for School Children.

On Dec. 12th a meeting was held at the Mansion House, Dublin, the Lord Mayor presiding, to promote the movement for the extension to Ireland of the Act making public provision for the feeding of necessitous school children, of whom there were a great number in Dublin. At present in some of the city parishes committees of ladies are working to provide meals for necessitous children, and pending

legislative change it is proposed to extend this voluntary organisation to the entire city.

Scarlet Fever in Belfast.

In Belfast there is at present an epidemic of scarlet fever, which—while so far it is of a mild type, with the exception of some toxic cases—is extremely widespread in its locale, cases being reported from every part of the city. In the municipal hospital at Purdysburn all the beds are full, there being 150 scarlet fever patients, and new cases have now to go to the union fever hospital. In some parts of the city, especially the south division, there is an outbreak also of measles; and cerebro-spinal meningitis has also been made notifiable for the year to the end of Dec. 1st, 1911, but, fortunately, the cases are very few in number. Since, and as a result of, the last serious outbreak of "spotted" fever several children have been admitted into the Ulster Institution for the Deaf and Dumb and the Blind with blindness and deafness.

The King Edward Memorial in Belfast.

The fourth list of subscriptions to the King Edward memorial in Belfast, which is to take the form of an additional block to the Royal Victoria Hospital, Belfast, was published on Dec. 10th, and brings the sum subscribed up to £14,789.

Irish Asylums.

The position of asylums in Ireland is becoming deplorable from want of room and of money. The Monaghan and Cavan asylum board at its meeting on Dec. 8th met specially to consider the problem of providing increased accommodation. The Inspector of Lunatics, in a long report dealing with the subject, points out that as estimated the accommodation is calculated by the latest official returns to be sufficient for only 793 patients, while the asylum is now over-crowded by 128. In the circumstances he says it is impossible to report to the Lord Lieutenant that the accommodation provided by the county councils of Cavan and Monaghan for the insane poor is sufficient. The report also pointed out the danger there was of His Excellency withdrawing the capitation grant in the circumstances. After a very long discussion it was unanimously decided that the military authorities should be communicated with in order to ascertain if the disused military barracks could be obtained for the purpose of an asylum. The inspectors and the asylum architect were also requested to visit these military barracks to see if they approved of the buildings and to report what they estimated as the cost of converting them into an asylum.—At the monthly meeting of the committee of management of the Tyrone and Fermanagh Asylum, held on Dec. 8th, the auditor reported that, in spite of the increase in the demand which was made last spring, the accounts closed this half-year heavily in debt, and although it was probable that this debit balance would be somewhat reduced by the end of the financial year, when the full increased rate had been received, still it would remain very considerable, and the committee, when considering the estimates for 1910–11, would have to make a further increase in the demand in order to put the accounts on a satisfactory basis.

Dec. 13th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Election of a Professor in the Faculty of Medicine.

THE council of the Paris Faculty of Medicine has elected a professor to occupy the chair of diseases of the nervous system, a position formerly held by Professor Raymond, and before his time adorned by Professor Charcot. There were two candidates, both of them being specialists and professors in the Faculty—namely, Dr. Dejerine, professor of medical pathology, and Dr. Pierre Marie, professor of pathological anatomy. The council elected Dr. Dejerine, who has done excellent work in diseases of the nervous system, has been an *agrégé* since 1886, and is 61 years of age. Another professorial appointment is probable, for the Municipal Council of Paris has been considering a proposal that a municipal chair should be created for Dr. Doyen. The high reputation which Dr. Doyen enjoys, not only in France but in various other countries, makes it unnecessary to do more than refer to the great ability which he has shown as an unofficial lecturer and teacher, and his promotion would obviously do credit to the initiative of the Municipal Council.

Treatment of Fractures of the Elbow in Children.

At a meeting of the Société de Médecine de Paris held on Nov. 26th, M. Barbarin made a communication on the subject of fractures of the elbow with displacement occurring in children. He said that in the majority of cases, when treatment by mobilisation did not give immediate good results, it was necessary to remove one or more of the fragments under the guidance of radiography, an operation which was soon followed by recovery or improvement. M. Mouchet said that he was in principle opposed to operations on the bones of the elbow or in fractures of that joint in children unless the lesions were either open or else attended with injury to the nerves. On several occasions (four times during the present year) he has had to operate on improperly reduced fractures of the external condyle and on supracondylar fractures. With respect to epitrochlear fractures, of which he had treated nearly 50, he had operated on only one in which the fragment was visible through a wound in the integument. Massage ought to be gentle in children suffering from fractures of the elbow, and obviously ought to be practised only at a distance from the seat of fracture. Mobilisation ought to be still more gentle; in some children it increased the stiffness. Some children had a predisposition to an excessive formation of osseous substance, an unexplained and unpreventable condition. M. Coudray remarked that the cases which had been described were important because they exemplified relatively rare fractures of the elbow. He agreed with the opinion of M. Mouchet that early operations were undesirable, because well-marked stiffness might either disappear or improve considerably in the course of some months. He thought that it was inadvisable to operate a second time on a child who had been examined and who would certainly regain the power of extending the joint. M. Durez said that it was not always necessary to employ massage in recent fractures, as these might be treated satisfactorily by mobilisation.

Fire at Branch Premises of the Pasteur Institute.

A terrible fire broke out on Dec. 7th at the branch premises of the Pasteur Institute between Garches and Marnes la Coquette. Beginning in a loft over the laboratories where serums are prepared and stored, it lasted the whole night and caused immense damage. The 60 horses which were in the stables were brought out, and 5000 boxes of serums were removed to a place of safety. On account of the destruction of the laboratories the director of the establishment at Garches cannot supply the quantity of serum required, but the preparation of it is being continued in a temporary laboratory which was made ready on the following day. It is fortunate that the stock of anti-diphtheritic serum was saved, as the replacement of it would require from three to four years.

Immunisation of Goats against Malta Fever.

At a meeting of the Biological Society held on Nov. 26th, M. Henri Vincent and M. Collignon communicated the results of attempts which they made to immunise four young goats against Malta fever; two of the goats were males and two were females; they were about six months old and in perfect health. Of the cultures which were used, one was supplied by M. Binot of the Pasteur Institute, and the other by M. Nicolle of Tunis, the latter of which, being the more virulent of the two, was used as a control test of the immunity that was produced. The antigen that was employed was prepared according to the principle made known by M. Vincent for the preparation of antityphoid serum, and the inoculations of it were made either under the skin or into a vein. Their experiments led M. Vincent and M. Collignon to believe that there was a prospect of practically immunising goats against Malta fever by several subcutaneous injections of cultures of the microbe of that disease sterilised by ether, which was a volatile antiseptic, easily manipulated and easily got rid of. Treated in this way the virus lost none of its efficiency for inoculation purposes and encouraged the production of antibodies almost as energetically as a living culture would. For the immunisation of animals this antigen was decidedly preferable to an attenuated living culture of the micrococcus melitensis, because a living culture, even after attenuation, might

transform the animals into germ carriers; it was also superior to cultures killed by heat. M. Vincent and M. Collignon considered that the inoculation of young goats against Malta fever would be the most efficacious means of preventing the alarming extension of that disease among goats and perhaps among other domestic animals, as well as among persons who came into contact with goats or were consumers of their milk and the cheese made from it.

Dec. 12th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Grants by Local Authorities in Aid of Medical Students.

A REMARKABLE step has been taken by some of the country magistrates for the purpose of obtaining a few years hence the services of medical men without much difficulty. As a large proportion of medical students come from families which have to practise economy, grants varying from 1000 to 1500 kronen (from £40 to £60) per year for five consecutive years, are offered to medical students who have passed the preliminary examinations in anatomy, physics, and chemistry. These young men must complete their curriculum within the ensuing three years, must spend a further period of two years in hospital work, and must sign a contract that they will take service with the country magistrates at the place allotted to them on the terms of appointment published for that place; this contract is to hold good for the next ten years after obtaining the diploma of M.D., which every practitioner in Austria must possess. It is necessary to explain that at present the remuneration for medical appointments in country places is so unsatisfactory that many of them are boycotted by the medical organisations, with the result that such posts are either vacant or heavy payments have to be made to private practitioners for the treatment of paupers and similar medical work. As the only object of this new scheme is to induce inexperienced students to sign contracts which would in a short time hand them over to the mercy of the country magistrates, to be sent wherever their employers pleased, medical students are being warned against it by the Medical Council. There is no reliable means of ascertaining whether any, and if so how many, of such agreements have been signed, but it is believed that the number is very small. A similar method has been already adopted by the military authorities to secure the services of medical men for the army and militia. Medical students were, and are still, offered the sum of 12,000 kronen (£500), to be paid in instalments increasing from £50 to £80 a year during their curriculum, and the rest on entering the army, where they must serve for 10 years. It is found, however, that even this not insignificant financial help has failed to solve the problem of the chronic shortage of army medical officers, owing to the unsatisfactory social and educational opportunities of the army medical service.

A New Water-supply for Vienna.

On Dec. 2nd the sixty-second anniversary of the Emperor's accession, His Majesty opened the grand new waterworks. This great undertaking has been completed within ten years, and its importance may be gauged by the fact that it not only doubles the amount of water supplied to this city of 2,000,000 inhabitants, but will no doubt prevent a water famine, at least until the year 1940, when the population will, it is computed, be doubled. The water is collected in the Styrian Alps, a mountain range a little over 6000 feet high, at a distance of some 120 miles from the capital in a south-westerly direction. 20 per cent. of the water comes from seven large mountain lakes and the rest from springs and wells in this area; it is brought in huge pipes, aqueducts, and syphons to the city, where it is capable of reaching the highest spot, even in the hilly portion of the suburb, without any lifting apparatus, owing to the great height from which it comes. The daily quantity flowing into the reservoirs is nearly constant both summer and winter, and amounts to 250,000 tons of pure drinking water. To this must be added the supply coming from the old waterworks, which derive their water from the springs around and on the Schneeberg, a range of snow-covered mountains also about 6000 feet in height. This yields an almost equal supply per head per day for Vienna. Last winter, when abnormal weather conditions had been prevailing for nearly half a year and a prolonged drought had emptied the reservoirs, the city experienced a serious water famine, as the supply had fallen below 100,000 tons per day, and the water-pipes in the houses had to be throttled to prevent undue use of the precious liquid. The new water is of excellent quality. It has a fairly constant temperature varying from 6° to 10° C. Its softness makes it well suited for washing, cooking, and other household requirements, but is not so marked as to interfere with its use as a beverage. The mineral constituents are chiefly carbonate of lime with a little phosphate; there are also traces of magnesia, and in summer-time traces of silicates have been found; it contains no organic admixture, and there are very few germs. Care has, of course, been taken to prevent any possible contamination or pollution in the catchment area, and the water will be analysed every week in the municipal laboratory. The cost of the work amounts to 100 million kronen (over £4,000,000), and a small charge (about 1 per cent. of the rent) has to be paid by the occupants of flats and houses for the outlay. Vienna can now boast of having the most plentiful and best water-supply of any capital city in the world, and perhaps of any city in Europe.

The Proposed New Regulations for the Management of Hospitals.

The professors of the Vienna medical institutes, composing the Medical Faculty of the University of Vienna, have held a meeting in order to protest against the insidious plan of bringing the clinics under the influence of political parties as described in this column on Dec. 3rd, p. 1655. At this meeting vehement opposition was directed against two points which are considered to be extremely objectionable—namely, the administration of hospitals by non-medical men and the whole-time appointment of the hospital staff. A committee, consisting of the present dean of the faculty and the three previous holders of this office, as well as of the presidents of the "Association of the Hospital Medical Men," and the "Organisation" was at once despatched to the Ministry of Education, the Ministry of Finance, and to the Home Secretary to explain the views held by the professors, the committee being authorised to inform the Ministers that all the clinical professors were prepared to resign their posts at once if the scheme should become law, as they could not take part in ruining the profession. As a result, the plan may be considered as dropped, at least in its original shape. Whatever is good in the scheme will no doubt be brought out at another occasion.

Dec. 12th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

The St. John Ambulance Association.

THE Government of India has placed the Indian branch of the St. John Ambulance Association on the list of institutions in India receiving an annual Government subsidy. The Government grant to the association is meant to signify the highest official approval of the remarkable extension of the humanitarian work of the association amongst the people of India during the past two years. It is not designed to relieve private individuals of their responsibility to the branch, and it is hoped that numerous chiefs and leading Indians will follow the generous example of His Highness the Nizam, who, in addition to maintaining a flourishing centre in his dominions, has recently made a handsome donation to the central fund of the association.

The Bombay Hospitals.

The annual report by Surgeon-General H. W. Stevenson, I.M.S., Surgeon-General to the Government of Bombay, on the civil hospitals and dispensaries of the Bombay Presidency for the year 1909, which has just been issued, states that during the year the number of hospitals and dispensaries increased from 718 to 723. The total number of patients, both indoor and outdoor, treated during the year was 2,250,211, or 47,270 more than in the previous year. The percentage of mortality was 9·8, practically the same as that of last year. Of the 2,250,211 patients treated, 13,098 were Europeans and

Eurasians, 1,422,600 were Hindus, 682,344 were Mussulmans, and 132,169 belonged to other classes. The number of adult females formed 20·8 per cent. of the total treated. Analysis of the numbers treated under the different diseases shows no marked increase, except under the head of cholera, in which case the numbers rose from 288 to 2347. The disease chiefly prevailed in the Deccan, and its spread was largely due to the Sinhast pilgrimage at Nassik. Tuberculosis shows an increase of 102. Under leprosy the cases treated fell from 4012 in 1908 to 1961. Malarial fevers show a decrease of 5366 cases, but still supply 18·54 per cent. of the total number treated. The total income was Rs. 17,69,358, and the expenditure Rs. 17,46,758. The average cost of the dieting of each patient during their stay in hospital was Rs. 0 2-10, as compared with Rs. 0 2-11 in the previous year. The report comments on the inadequacy of medical relief in different parts of the country, and the announcement is made that in order to meet this need a scheme for the establishment of a number of additional dispensaries is receiving the attention of Government. The scheme, it is stated, is almost completed.

H.H. the Maharaja of Patiala.

The generous gift of H.H. the Maharaja of Patiala to the King Edward Sanatorium for Consumptives at Dharampur, alluded to by the Lieutenant-Governor of the Punjab at the recent installation of His Highness to full reigning powers at Patiala, amounts to a lakh of rupees. His Highness has further undertaken to provide an up-to-date dispensary and has made a fresh grant of pine-covered land. At Dharampur steps are being taken to build a hostel where students and young persons generally who are run down may be enabled to ward off the encroachments of the disease which is working such havoc amongst them.

Presentations to an Indian Medical Officer.

On his departure from Bombay for Europe Lieutenant-Colonel H. P. Dimmock, Principal of Grant Medical College, senior medical officer of Jamsetjee Jeejeebhoy Hospital, and physician-in-charge of Bai Motlibai and Sir Dinshaw Maneckji Petit Hospitals for Women and Children, Bombay, who has held the above posts conjointly since 1903, has been the recipient of a number of valedictory addresses. These included: (1) from the medical and subordinate staffs, an address in silver casket; (2) address and presentation from the nursing staff of the hospitals under his charge; (3) a presentation portrait of himself subscribed for by the students; (4) an address from the military medical students; (5) an address in silver casket from the student gymkhana; and (6) an address from the native staffs.

Nov. 19th.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

The Anti-opium Societies and the Chino-Indian Agreement.

A GREAT many home papers contain accounts of meetings held by anti-opium societies at which resolutions are carried unanimously calling upon the Government to cut short its agreement with China by totally suppressing the Indian export of opium without further delay. The following considerations are well worthy the attention of anti-opium societies who, in the opinion of competent authorities in China who are studying the question on the spot, are doing much to hamper the British Government in its good work, and probably to thwart the proper working out of a scheme which has been acknowledged by China to promise the best means of thorough abolition. For the agreement come to is a sound one. It was seen by both parties that the speedy and total abolition of such a widespread habit is impossible. Therefore it aims at a *pari passu* diminution of the Indian trade and the home production in China. Should the Indian trade be forthwith stopped there is no possible hold on the Chinese to annually diminish their trade. There are at the present moment hundreds of thousands of Chinese who would resume the habit the moment any restrictions are removed. This agreement made by the two Governments has entirely altered the situation. The efforts of every anti-opiumist should now be directed to seeing that it is loyally carried out; interference with it can only be perilous. The sincerity of the Indian Government is unquestionable; the sincerity of China may be more open to question, though for my own part I am convinced of it. The ability of the Indian Government to carry out its promises is undoubted; it has absolute control of the production and of the export trade. The ability of China to accomplish this herculean task to which she has pledged her honour, and to which she has set her hand, is quite another matter. It should be remembered that opium is imported from Persia, Annam, Dutch Colonies, and other places besides India, and that China has no efficient preventive service along her thousands of miles of coast line. The amount of opium grown in China is over 360,000 piculs, while only 40,000 piculs are imported from India. The production of opium is in private hands, scattered over several provinces, and, as has been proved in Shansi, can only be controlled with difficulty at the best, and in the course of several years. In other places, for various reasons, there is far less progress. The fact is that the machinery for effective control, as for effective taxation of the native product, does not exist. Public opinion will do more than anything else, and the present agreement (possibly modified in one or two details) has a real value in keeping up the pressure of public opinion. It is a good help to the genuine anti-opium movement in China. In the name of common sense and of the cause we all have at heart, it is best not to interfere from outside to cut off the pressure which the agreement brings to bear on the officials and people of the provinces where at present the anti-opium movement is weakest. That there is plenty of scope nearer home for the activities of anti-opium societies in the direction of limiting the export of morphine, &c., from England to China is shown by the following resolution put by the Hon. Mr. M. Stewart at the Hong-Kong Legislative Council:—

> That this council desires respectfully to draw the attention of the Secretary of State for the Colonies to the port of origin of all the morphine, and one-third of the compounds of opium, entering this colony; and humbly prays him to lay before Parliament the propriety of assisting this Government in its endeavours to discourage the opium vice in its most injurious form by restricting the export from England of the means of gratifying it.

In the Memorandum on opium published in 1909 by the Statistical Department of the Chinese Imperial Maritime Customs the Commissioner of Customs at Foochow wrote as follows:—

> Prior to 1902 and the increase of duty on morphia the recorded importation at Foochow averaged 2700 ounces per annum. During the following three years only eight ounces were imported, and since 1905 none whatever has been declared at the Customs. There is reason to believe that large quantities are smuggled in along the coast in junks from Formosa and into the open ports by steamers from Hong-Kong. The consumption of the drug is reported to be just as great as ever. Upwards of thirty medicine shops at Foochow deal openly in morphia, and some of these are believed to carry stocks of as much as 1000 ounces. Most of the bottles bear the labels of British firms. Instruments for subcutaneous injection are also found, but are not in great demand.

These two quotations should give the home societies something to think about.

Appearance of Human Plague at Shanghai.

Following several suspected deaths the corpse of a Chinese was discovered by the municipal health authorities and material taken from a bubo was found to contain virulent plague bacilli. The day after this discovery two more cases were found which were verified as plague and which succumbed to it, making a total of three deaths. The acting medical officer of health, Dr. A. Moore, therefore declared the subdistrict to be plague-infected and ordered all the houses in it to be visited daily and all plague and suspected cases to be removed, compulsorily if need be, to the isolation hospital and all contacts to segregation quarters. Although there are many enlightened natives who view with appreciation the steps taken to prevent the plague obtaining a foothold in the settlement, there have been many wild rumours among the lower classes who resented the house-to-house visitation. Finally a riot broke out, necessitating the calling out of the volunteers to assist the municipal police in keeping the hostile Chinese in check. Several of the rioters were wounded as well as a few foreigners, but order has now been restored and the Chinese authorities are doing their best to coöperate with the police by appeasing the populace. The former have issued proclamations and called meetings to explain the situation. It is now confidently expected that the measures taken will permit the routine work of disinfection and supervision to be carried on as before.

Peking, Nov. 20th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Talbot Milk Institute.

THIS undertaking, which was founded on the initiative of Lady Talbot for the provision of fresh milk to the poor of Melbourne, recently applied to the Government for financial assistance. The Premier appointed Dr. Foske and Mr. Weldon, a civil servant, as a special board to inquire into the management of the institution, and these gentlemen presented a strongly condemnatory report, in which, *inter alia*, they wrote: "As the result of the inquiry we are of the opinion that the work of the institute has been unsatisfactory and unduly expensive, and therefore does not justify the continuance of Government support. We consider that the institute is unnecessary, and regard it as an example of how this community has charitable institutions foisted upon it to do certain necessary work that can more easily and effectively be undertaken by existing bodies. We therefore recommend that the request for a further grant be not acceded to." As the committee of management includes almost all the leading children's specialists and many prominent health officials and university teachers in veterinary science, this report naturally created a sensation, and has formed a subject of newspaper correspondence. The two morning newspapers took opposite views, the *Argus* upholding the institute and the *Age* supporting the adverse comment. After the first excitement subsided there appeared to be two points calling for reply from the Talbot committee. One was an allegation made in the critical report that "no record was kept of the number of children supplied nor any particulars concerning them, so that it was impossible to prepare mortality or other statistics or arrive at the cost per head." The other was the opinion that the municipalities could do the work more cheaply and efficiently than the Talbot Institute. After consideration for nearly a month the committee have published a lengthy reply to the adverse comment. They say: "In the portions of Melbourne where the Talbot milk has been supplied during the past two summers there has been a uniform and striking fall in the infantile death-rate." It must be confessed the committee does not produce any convincing figures in support of such a statement. As to the alleged excessive cost, the committee claim that the supply of ice-chests and ice to parents, nursing and other supervision has swelled the total, but is inseparable from any scheme of the kind. They further remark as to the board of inquiry: "Its report should be regarded merely in the light of an *ex parte* and unreliable statement of two persons who appear to consider they hold a brief against the institute, and its conclusions should be considered merely as the verdict which these persons were endeavouring to secure." Members of the institute committee attended at Parliament House and addressed some members of the House on the question. Pressure is being brought to bear on the Premier, and it is probable some advance will be made pending a further inquiry into the working of the institute.

Health of Melbourne.

The annual report of the city health officer for 1909 gives the death-rate at 13·6 per 1000, or, deducting benevolent asylum figures, 12·4 per 1000. This rate shows a continuous decline since 1886. The birth-rate was 22·5 per 1000 and the infant mortality-rate 98 per 1000. Diphtheria and scarlet fever were unusually prevalent, and the Infectious Diseases Hospital was severely taxed for accommodation.

Hospital Sunday.

The annual Hospital Saturday and Sunday collections were taken up on Oct. 22nd and 23rd in Melbourne. The total exceeded that of any year except 1888, which was the "boom" time, being then over £9000. This year's total was £8119, but with some further sums to come may reach a larger figure.

West Australian University.

A Royal Commission appointed to inquire into the feasibility of a university for West Australia has reported to Parliament and recommends: 1. The establishment of the university without delay. 2. The type to conform to that of the Eastern States, but with any modern amendments necessary. 3. Both sexes to have equal rights and facilities. 4. The commission favours free tuition, but if fees are necessary to be as low as possible. 5. Faculties to be formed in arts, science, law, and perhaps music, and at a later stage medicine and surgery.

Medico-Legal Case.

Some time ago a young woman was found dead in the house of a Chinese herbalist in Ballarat. The herbalist himself called the police, and his statement was that the deceased came to consult him and died while he was making up a medicine. Deceased was in a certain condition and evidence was given that she was aware of the fact and went to the house for a certain purpose. The medical man who made the post-mortem examination is of opinion deceased died from the entry of air into the veins, and in this he is supported by two other local colleagues. The Government pathologist, who made a subsequent necropsy, is of opinion that death was due to shock. At the first trial the jury disagreed on the charge of murder preferred against the herbalist. At the second trial additional medical evidence is to be called on both sides.

Obituary.

Mr. H. J. H. Scott of Scone, New South Wales, died recently from enteric fever. He was a well-known cricketer in his earlier days, and captained the Australian eleven which visited England in 1886. Two years subsequently he qualified as L.R.C.P. and M.R.C.S. Eng., and returning to Australia practised his profession at Scone, where he was greatly esteemed, as was evidenced by an immense gathering of the public to attend the funeral. Mr. Scott was only in his fifty-first year at the time of his death.

Nov. 15th.

Obituary.

WILLIAM HENRY HORROCKS, M.B. LOND., F.R.C.S. ENG., L.S.A.,

SENIOR HONORARY SURGEON, BRADFORD ROYAL INFIRMARY.

IN the death of Mr. W. H. Horrocks at the early age of 53 years Bradford has sustained a severe loss. He was universally respected and had a high reputation in the city and surrounding country. In a quiet way he exerted considerable influence, and by always maintaining a high standard of conduct in all that he did he upheld the honour of the profession in the city of his adoption.

Mr. Horrocks was the second son of the late Dr. W. H. Horrocks of Blundellsands, Liverpool, and was born on June 18th, 1857. He received his medical training at University College, Liverpool, the Owens College, Manchester, and University College Hospital, London, taking the M.R.C.S. Eng. in 1882 and L.S.A. in 1883. In 1886 he took the M.B. of the University of London, and the Fellowship of the Royal College of Surgeons of England. After qualifying he held a resident post in the Rotunda Hospital, Dublin, and then served for three years first as ambulance surgeon and later as house surgeon in the Northern Hospital, Liverpool, after which he returned for a year to London to act as assistant demonstrator of anatomy at University College. He then went to Bradford as house surgeon to the Royal Infirmary, holding the appointment for nearly three years and resigning it to enter into partnership with Dr. A. C. F. Rabagliati. After a few years the partnership was dissolved, but the close personal friendship remained. In 1891, on a vacancy occurring at the Royal Infirmary, he was appointed honorary assistant surgeon, and in the following year was elected to the full staff, being at the time of his death senior surgeon to the institution. His zeal for surgery, his thorough training, and his abilities enabled him, despite his delicate physique, to rise to the position of a consultant whose advice was frequently sought by his brother practitioners in Bradford and the surrounding districts. Though never entirely relinquishing his family practice, he was yet so loyal and considerate to both patients and doctors that his consulting work steadily increased, and at the time of his death was considerable. On his appointment as surgeon to the infirmary he at once threw himself with zeal into the work, and the institution owes a great debt to his energy and ability. He took a great interest in the management of the hospital and especially in the training of the nurses, always being at pains to point out to them anything in the cases which had a bearing upon their work. He

wrote many papers in the medical journals, but these do not represent a tithe of those he read before the local medical societies. He acted as medical referee under the Workmen's Compensation Act.

The medical profession in Bradford has, in short, by the death of Mr. Horrocks, lost an able diagnostician, a capable surgeon, and a true friend whose place will not easily be filled. Such honours as the local profession had to bestow were conferred on him. He was chairman of the Bradford division of the British Medical Association and President of the Bradford Medico-Chirurgical Society, and how great were the respect and esteem in which he was held was shown during his last illness by the constant inquiries that were made concerning him, and at his funeral by the very large gathering of medical men that assembled to do him honour.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—As the result of the examination held on Nov. 17th, 21st, 22nd, 23rd, 24th, and 25th, for which 67 candidates presented themselves, of whom 26 were approved and 41 were referred, the Council conferred the diploma of Fellow on the under-mentioned gentlemen at their meeting on Dec. 8th. Two gentlemen, Ernest Marshall Cowell, of University College, and Anandrai Keshavlal Dalal, of Bombay University and Middlesex Hospital, who were among the successful candidates, were not eligible to receive the diploma on account of their not having reached the requisite age of 25 years. The following is a list of the successful candidates:—

Thomas Gerald Fenton, M.R.C.S., L.R.C.P., St. Thomas's and St. Bartholomew's Hospitals; Krishna Moreshwar Pardhy, L.M.S. Bombay, M.R.C.S., L.R.C.P., Bombay University, University College Hospital, and Birmingham University; William Bradshaw Ainger, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Ernest Edgar Maples, M.D., B.S. Lond., M.R.C.S., L.R.C.P., St. Bartholomew's and St. Thomas's Hospitals; George Ernest Oswald Fenwick, M.R.C.S., L.R.C.P., University College and St. Bartholomew's Hospital; Gordon Wilson Thomas, M.B., B.S. Lond. M.R.C.S., L.R.C.P., Leeds University; James Montagu Wyatt, M.R.C.S., L.R.C.P., St. Thomas's Hospital; Edwin Thomas Harries Davies, M.D., M.S. Lond., M.R.C.S., L.R.C.P., St. Mary's Hospital; John Black Ferguson Wilson, M.B., B.S. Lond., M.R.C.S., L.R.C.P., Leeds University and London Hospital; Charles Walter Gordon Bryan, M.R.C.S., L.R.C.P., St. Mary's Hospital; James Barlow Macalpine, M.B., Ch.B. Manchester, M.R.C.S., L.R.C.P., Manchester University and London Hospital; Paul Jenner Verrall, M.B., B.C. Cantab., M.R.C.S., L.R.C.P., Cambridge University and St. Bartholomew's Hospital; Alfred Richardson, M.B., B.S. Lond., M.R.C.S., L.R.C.P., Leeds University; Harry Blakeway, M.B., B.S., B.Sc. Lond., M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Harold Delf Gillies, B.A. Cantab., M.R.C.S., L.R.C.P., Cambridge University and St. Bartholomew's Hospital; Edward Leslie Martyn Lobb, M.B., B.S. Lond., M.R.C.S., L.R.C.P., Guy's Hospital; Harold Chapple, M.A., B.C. Cantab., M.R.C.S., L.R.C.P., Cambridge University and Guy's Hospital; Murugesem Muthu Kumarasamy, M.R.C.S., L.R.C.P., Madras, Edinburgh University, and University College Hospital; John Francis O'Malley, L.R.C.P. & S.I., M.R.C.S., L.R.C.P., Dublin University and London Hospital; Edward Mapother, M.D., B.S. Lond., University College Hospital; Charles Aubrey Pannett, M.D., B.S., B.Sc. Lond., St. Mary's Hospital; Robert Nuttall Porter, M.B., Ch.B. Vict., Manchester University and London Hospital; Balcombe Quick, M.B., B.S. Melbourne, Melbourne University and London Hospital; Paul Bernard Roth, M.B., Ch.B. Aberdeen, Aberdeen University and London Hospital.

Licences to practise dentistry were conferred upon the following 42 gentlemen who have passed the requisite examinations and complied with the by-laws:—

Albert Frederick Bangert, Middlesex and Royal Dental Hospitals; Charles Holme Barnett, Guy's Hospital; Robert Dudley Bell, Sydney Martin Bell, Harold Edgar Bower, and Ralph Chapman, Charing Cross and Royal Dental Hospitals; Charles Repton Faulkner, Birmingham University; Thomas Leonard Fiddick, Guy's Hospital; Guy Leroy Gillett, D.D.S. Michigan, Michigan University and Middlesex Hospital; Frederick Simpson Glover, Guy's Hospital; John Ferguson Gow and Norman Grellier, Charing Cross and Royal Dental Hospitals; Laurence Edgar Crespine Harrison, Middlesex and National Dental Hospitals; Clement John Henry, Guy's Hospital; Albert Henry Herbert, Birmingham University; Clement Eugene Holburn, Sheffield and Durham Universities; Arthur Percy Livett Johnson, Guy's Hospital; Bertram Howard Jones, Middlesex and National Dental Hospitals; William Joseph Kennealy, Guy's Hospital; Harold William Knowling, Liverpool University; Edward Aubrey Clement Knox-Davies, Guy's Hospital; William Stuart Lang, Middlesex and National Dental Hospitals; Stanley Lawson, Guy's Hospital; Frederic Winbolt Lewis, Middlesex and Royal Dental Hospitals; Harris Raphael Lyons and Leslie Miller, Charing Cross and Royal Dental Hospitals; Arthur Stanley Morgan, Guy's Hospital; Victor Mayfield Morris, Middlesex and National Dental Hospitals; Charles Harry Greville Penny, Guy's Hospital; Fred Quayle, Middlesex and Royal Dental Hospitals; Charleton Edmund Rice, Guy's Hospital; Gordon Evelyn Rowstron, Guy's Hospital; Harry Stobie, St. Thomas's and Royal Dental Hospitals; Patrick Barry Stoner, Harry Sturton, and Ernest Sutton Tait, Guy's Hospital; Claude Taylor, Charing Cross and Royal Dental Hospitals; William Jefferson Wilkinson, D.D.S. Pennsylvania, Pennsylvania University and Royal Dental Hospital; Frederick Charles Willows, Bristol University; Thomas Edwin Wills, Charing Cross and Royal Dental Hospitals; and William Hector Wotton and Edgar Olyve Yerbury, Guy's Hospital.

LITERARY INTELLIGENCE.—Messrs. Merser and Sons (268–270, Kennington-road) will shortly publish an English translation of the well-known work of Professor Mosso, "La Paura," in which the great Italian biologist explains his views of the etiology, physiology, and pathology of fear. The translation has been made by Dr. Arthur Harrison, a former student of King's College, London, and a late member of the Indian Medical Department, who, after much active service, had to retire on account of advanced organic heart disease; and we bring this work to the notice of the medical profession with a trust that its success will materially help one "to whom fortune has been rather niggardly in her gifts," as the publishers' announcement says. The book will be published at 5*s.* net, and advanced subscriptions will be received and acknowledged at the place of publication.

CHOLERA IN MADEIRA.—The cholera has spread considerably in Madeira, and there has unfortunately been some rioting. Our correspondent last week complained of the supineness of the Lisbon authorities, and the attitude of the Portuguese Government is still apathetic. Local endeavour, strenuous as it is, may not suffice to keep the epidemic in check. The Board of Trade is in receipt through the Foreign Office of information to the effect that persons desirous of sending provisions to relatives in Madeira can secure their admission into the island without Customs examination until the end of January on condition that the packages or cases containing the provisions are accompanied by a certificate from the Portuguese Consul-General in London stating fully the nature and value of the contents. Consular stamps must be attached to each package or case.

ANNUAL DINNER OF THE BRISTOL MEDICAL SCHOOL.—Over a hundred past and present students of the Bristol Medical School met on Nov. 29th, at the annual dinner, which was presided over by Mr. James Taylor. The health of the guest of the evening, Sir Alfred Keogh, was proposed by Captain A. E. Hayward Pinch, I.M.S., an old Bristol student, who spoke enthusiastically of Sir Alfred Keogh's work in connexion with the Royal Army Medical Corps. Sir Alfred Keogh, in reply, said that the reforms had been based on two principles—the attainment of professional efficiency and complete fusion of the military and medical elements. That these objects were achieved was due to the support which he received from the great majority of the corps itself. In proposing "The Medical School and other Departments of Bristol University," he spoke of the debt which tropical medicine owed to the work of Dr. William Budd of Bristol, and alluded to the valuable help which he had received in the organisation of the Territorial Medical Service from Major Thurston, R.A.M.C., another former Bristol student. Sir Alfred Keogh made some very interesting remarks on the part which the modern English Universities are destined to play in the satisfaction of the thirst for knowledge shown to so great an extent by the younger members of the working-classes, and on the influence which this generalisation of higher education would have in rendering British industry and commerce more scientific, and therefore more efficient. In conclusion he pleaded for more attention to physiology and pathology in the medical curriculum. Mr. F. Richardson Cross, who replied on behalf of the medical school, gave a brief outline of its history, and asked the students to set a higher standard of behaviour than that observed at the recent graduation ceremony. The Rev. de Lacy O'Leary, in replying for the other faculties, said that they had much to learn from the Faculty of Medicine as to the value of post-graduate study. To the toast of "Past and Present Students," proposed by Dr. W. H. C. Newnham, Mr. G. Munro Smith and Mr. R. F. Bolt replied in admirable speeches. The former laid stress on the work of the Association of Alumni, which has for one of its aims the compilation of a record of the careers of all former students at the University; and Mr. Bolt gave an excellent account of the progress of the University Union

and the various sporting and other interests which have prospered under its care. Dr. de Burgh Birch, professor of physiology in the University of Leeds and an old Bristol student, proposed the health of the President, to which Mr. Taylor briefly replied. The menu "card" deserves mention. The dinner secretaries try to find a new form for it each year, and this time hit upon the happy notion of enclosing it within a pill-box labelled the "Bristol Medical Dinner Pill—to be taken once yearly."

KING EDWARD'S HOSPITAL FUND FOR LONDON.—The Governors and General Council of this Fund have placed this year the sum of £150,000 in the hands of the committee for distribution among the London hospitals. We shall deal further with the awards.

UNFORTUNATE ADVERTISEMENT. — Numerous advertisements of a forthcoming book by Mr. H. C. Ross on cell-reproduction have been sent to the lay press. The advertisements were not in any way dictated or inspired by the author, and have been published without his authority or knowledge to the regret of himself and the publisher.

THE COTTAGE BENEFIT NURSING ASSOCIATION.—A meeting of this association was held on Dec. 13th, at Denison House, Vauxhall Bridge-road, under the presidency of the Rev. John Harding. The report, which was read by the secretary, showed that the work of the year had been very satisfactory. Dr. Alfred Cox, in the absence of Mr. J. Smith Whitaker, read a paper on the Midwives (No. 2) Bill. He said that the medical profession fully recognised the work of the nurse; there was, however, a tendency on the part of some nurses to encroach on the work of the medical man and to assume responsibilities for which they were not qualified. A nurse should always act under the orders of the medical man, and experience showed that for the successful working of a nursing association there must be harmonious coöperation with the medical profession. With regard to clause 17 of the Bill he thought that the local supervising authority should be responsible for the payment of the medical man who was called in by a midwife. Miss E. M. Burnside also spoke on the same subject, and agreed with Dr. Cox that the local supervising authority, rather than the Poor-law guardians, should be responsible for the payment of medical men.

THE "WELLCOME" PHOTOGRAPHIC EXPOSURE RECORD AND DIARY, 1911.—The "Wellcome" Exposure Record and Diary continues year after year to hold its place in the affections of photographers all over the world. It is essentially a book for the pocket, and is a most handy and up-to-date epitome of photographic art and practice. The articles contained in the literary portion of the 1911 edition, which is just published, are all of a highly interesting and useful character, and serve to help photographers over the technical difficulties of exposure, development, &c. They include directions concerning negative making, factorial, time, machine, tank or stand development, bromide printing, toning, and intensification. Nor are such processes as colour photography and the making of lantern slides and of ozobrome or bromoil prints, forgotten. It is neatly and strongly bound in green cloth boards and fitted with wallet, pencil, and clasp. To the inside of the cover is attached the "Wellcome" Exposure Calculator, with its moveable disc, which enables the exposure to be determined under all conditions of light and scene, by a single turn of the scale. In response to the wish of those amateurs who adhere in practice to one particular brand of plate or film, a special slip for attachment to the disc may now be obtained, which indicates the correct exposure for every stop. This attachment is supplied gratis (on application) to purchasers of the book, by the publishers. Another new feature of this year's edition is the special article on colour photography, in which a simplified method of producing the necessary solutions is given. For the convenience of its world-wide readers and users, the "Wellcome" Exposure Record and Diary is published in three editions—namely, the Northern Hemisphere and Tropics, the Southern Hemisphere and Tropics, and the United States of America. When purchasing, care should be taken to specify which edition is required. The "Wellcome" Exposure Record may be obtained from photographic dealers and booksellers and at railway bookstalls. The price in the British Isles is 1*s*.

THE SANATORIUM WORK OF THE LONDON CHARITY ORGANISATION SOCIETY.—A report recently issued dealing with this subject should prove valuable to those interested in the results obtained from sanatorium treatment. The society works throughout London, carefully selects its cases, employs a medical referee, keeps the patient away as long as the doctors advise, maintains the dependent family in the breadwinner's absence, and tries to supply him with suitable work on his return. The society had sent away 385 patients up to Dec. 31st, 1909, and is now sending away over 100 annually. All these 385 patients were looked up early this year; it was found that over 50 per cent. were working or fit for work, over 11 per cent. were ill, 26 per cent. were dead, and 12 per cent. could not be traced. All these patients went to well-known sanatoriums; the average length of stay was over 17 weeks. The society considers that these figures amply justify the continuance of the work, and confidently expects still better results in the future. The cost of the treatment is shared by the district committees and the central council; the council's share amounts to over £900 a year, and only £50 comes in subscriptions. The work is unique in London, but so far is little known except to those medical men and other friends of the poor who regularly take advantage of it.

BOOKS, ETC., RECEIVED.

APPLETON, D., AND COMPANY, New York and London.

A Manual of Nursing. By Margaret Frances Donahoe, formerly Superintendent of Nurses, and Principal of Training School, Philadelphia General Hospital. Price 7*s*. 6*d*. net.

BAILLIÈRE, TINDALL, AND COX., London.

The Ship-Surgeon's Handbook. By A. Vavasour Elder, M.R.C.S., L.R.C.P. Second edition. Price 5*s*. net.

BLACK, ADAM AND CHARLES, London.

Who's Who. 1911. Price 10*s*. net.
The Englishwoman's Year Book and Directory. 1911. Edited by G. E. Mitton. Thirtieth Year of Issue. Price 2*s*. 6*d*. net.
The Writers' and Artists' Year Book. 1911. Price 1*s*. net.

BURROUGHS, WELLCOME, AND CO., London, New York, Montreal, Sydney, Cape Town, Milan, Shanghai, Buenos Aires.

Wellcome's Medical Diary and Visiting List. 1911.
The "Wellcome" Photographic Exposure Record and Diary. 1911. Price 1*s*.

CHURCHILL, J. AND A., London.

The Medical Directory. 1911. Sixty-seventh Annual Issue. Price 14*s*. net.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Oxford Medical Publications. Introduction to Practical Organic Chemistry, including Qualitative and Quantitative Analysis and Preparations. By A. M. Kellas, B.Sc. Lond., Ph.D. Heidelberg. Price 3*s*. 6*d*. net.
Outlines of Zoology. By J. Arthur Thomson, M.A., Regius Professor of Natural History in the University of Aberdeen. Fifth edition, revised. Price 12*s*. 6*d*. net.

PUTNAM'S SONS (G. P.), New York and London.

The Story of the Bacteria and their Relations to Health and Disease. By T. Mitchell Prudden, M.D. Second edition, revised, and enlarged. Price 3*s*. 6*d*. net.

REBMAN, LIMITED, London. REBMAN COMPANY, New York.

The Treatment of Syphilis by the Ehrlich-Hata Remedy (Dioxydiamido-Arsenobenzol). A Compilation of the Published Observations by Dr. Johannes Bresler, Chief Physician to the Provincial Medical Establishment at Lüben, Silesia. Second edition, much enlarged. With the Portraits of Ehrlich and Schaudinn. Translated by Dr. M. D. Eder. With an Abstract of the Most Recent Papers. Price 2*s*. 6*d*. net.

SUPERINTENDENT, GOVERNMENT PRINTING, INDIA, Calcutta.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. No. 38. Preliminary Report on the Killing of Rats and Rat Fleas by Hydrocyanic Acid Gas. By Captain W. D. H. Stevenson, M.B., I.M.S. (Bombay Bacteriological Laboratory.) Price Annas 9, or 9*d*.

WALKER, JOHN, AND CO., LIMITED, London.

Walker's Diaries for the Year 1911:—No. 4/184. Morocco, back loop and pencil. Price 7*s*. No. 3/63. Long-grain Roan, gilt edges, with back loop and pencil. Price 1*s*. 9*d*. No. 7/107. Long-grain Roan, gilt edges. Price 1*s*. 3*d*. No. 15/215. Long-grain Roan, with monthly index. Price 1*s*. No. 2/52. Satin cloth. 6*d*. No. 17/427. ("Graphic") Solid Pigskin, gold roll. Price 2*s*. 6*d*. Quarterly Pocket (Vest) Diary. In four parts. Binding No. 621. Roan, gilt edges. Price 1*s*. "Ruby" Diary (very small for vest pocket). No. 21. Price 1*s*. "Pearl" Diary. No. 32 (size 2 × 1¼ inches). Velvet calf. Price 1*s*.
Calendars for Waistcoat Pocket:—"Happy Months" Calendar. Prices 6*d*., 1*s*., and 1*s*. 6*d*. "Miniature" Calendar. Prices 6*d*. and 1*s*.
Walker's Block Calendars:—"The Imperial" (size of block 6¼ × 5 inches). Price 1*s*. 9*d*.
"Farringdon" Series of Calendar Cards. No. 11. Cabinet size. In oak frame.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BOND, FRANCIS THOMAS, M.D. Lond., M.R.C.S. Eng., F.R.S. Edin., has been reappointed Medical Officer of Health by the Thornbury (Gloucestershire) Rural District Council.

FLIGG, WILLIAM, M.B., C.M. Edin., M.R.C.S. Eng., D.P.H. Cantab., has been appointed Visiting Medical Officer to the Royal West of England Sanatorium, Weston-super-Mare.

FURBER, L. G. H., L.M.S.S.A., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Twyford District of the county of Berks.

HUTCHINSON, JAMES RANDAL, M.B., Ch.B. Vict., D.P.H., has been appointed Medical Officer of Health to the County Borough of Wigan.

MUNRO, D. G. MACLEOD, M.D., C.M. Edin., has been appointed Honorary Clinical Pathologist to the Cheltenham General Hospital.

ORMEROD, HENRY LAWRENCE, M.D., B.Ch., B.A.O. R.U.I., has been appointed Medical Officer for the Henbury District by the Thornbury (Gloucestershire) Board of Guardians.

PEYTON, T. HENRY, M.D., D.P.H. T.C.D., has been appointed School Medical Officer for North-West Kent by the Kent County Council.

ROBINSON, W. E., M.D., B.Ch. Oxon., has been appointed Assistant Physician to the Infants Hospital, Westminster, and Honorary Assistant Anæsthetist to the West London Hospital, Hammersmith.

SCOTT, ALEXANDER R. P., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Second House Surgeon to the Beckett Hospital, Barnsley.

SMITH, EDWIN, M.D. Lond., Barrister-at-Law, has been appointed Lecturer on Forensic Medicine at St. Thomas's Hospital.

WACHER, SIDNEY, F.R.C.S. Eng., L.R.C.P. Lond., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 49, and to be attached more particularly to Canterbury, Faversham, Ashford, Tenterden, and Cranbrook County Courts.

WEST, HENRY O., M.B., B.S. Lond., has been appointed Resident Medical Officer at the Royal Hospital for Diseases of the Chest.

WOODWARD, ALFRED C. T., M.B., F.R.C.S. Edin., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 21, and to be attached more particularly to Birmingham County Court.

WRIGHT, ARCHIBALD FRANCIS, M.B., Ch.B. Edin., has been appointed District Medical Officer by the Bideford (Devon) Board of Guardians.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARNES URBAN DISTRICT COUNCIL.—Medical Officer of Health and Superintendent of Isolation Hospital. Salary £275 per annum.

BARNSTAPLE, NORTH DEVON INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Assistant Physician. Also House Surgeon for six months. Salary at rate of £20 per annum, with board, residence, &c.

BRIDGWATER HOSPITAL.—House Surgeon, unmarried, for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

BRISTOL ROYAL INFIRMARY.—Dental House Surgeon. Salary £100 per annum, with apartments, board, and laundry.

CAIRO, EGYPT.—Medical Tutor at School of Medicine and Registrar to Kasr-El-Ainy Hospital. Salary £E.600 a year.

CANCER HOSPITAL, Fulham-road, London, S.W.—Surgical Registrar. Salary 50 guineas per annum. Also House Surgeon for six months. Salary £70 per annum.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—Two House Surgeons for six months. Salary £30, with board, residence, and laundry.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant.

DERBYSHIRE ROYAL INFIRMARY.—House Physician and Second House Surgeon for 12 months. Salary in each case £100 per annum, with apartments, board, &c. Also Assistant House Surgeon for six months. Salary at rate of £60 per annum, with apartments, board, &c.

EARLSWOOD ASYLUM, Redhill.—Junior Assistant Medical Officer, unmarried. Salary £130, with board, lodging, and washing.

ENFIELD AND EDMONTON ISOLATION HOSPITAL, Winchmore Hill.—Resident Assistant Medical Officer. Salary at rate of £150 per annum, with rooms, rations, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—Clinical Assistants for three months.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with residence, board, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Assistant Casualty Medical Officer (and House Physician), unmarried, for six months. Salary £30, with board, residence, &c. Also House Surgeon, unmarried, for six months. Salary £30, with board, residence, &c.

INDIAN MEDICAL SERVICE, India Office, London.—Fourteen Commissions in His Majesty's Indian Medical Service.

LEEDS GENERAL INFIRMARY.—Ophthalmic House Surgeon for six months. Salary at rate of £50 per annum, with board, residence, and washing.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100 per annum, with board and lodging.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, 8, Hunter-street, Brunswick-square, W.C.—Demonstrator in Anatomy and Curator of the School Museum (female).

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—Honorary Ophthalmic Surgeon. Also Anæsthetist. Salary £15 per annum.

MANCHESTER ROYAL INFIRMARY.—Resident Medical Officer and Resident Medical Officer at Convalescent Hospital, Cheadle. Salary in each case £150 per annum, with board and residence. Also Medical Registrar. Salary £75 per annum.

MANCHESTER VICTORIA MEMORIAL JEWISH HOSPITAL, Cheetham.—Resident Medical Officer (female) for six months. Salary at rate of £80 per annum.

MARGARET STREET HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, 26, Margaret-street, Cavendish-square, W.—Honorary Physician.

NEWCASTLE-UPON-TYNE, CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Assistant. Salary £125 per annum, with board, lodging, &c.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with board, lodging, and washing.

PADDINGTON AND KENSINGTON DISPENSARY FOR THE PREVENTION OF CONSUMPTION.—Assistant Medical Officer. Salary £100 per annum.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence. Also Radiographer. Salary £50 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months; also to be Senior Resident Medical Officer for four months. Salary at rate of £50 and £60 per annum respectively, with board, residence, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—House Physician for six months. Salary at rate of £80 per annum, with board, residence, and washing. Also Clinical Assistants.

ROTHERHAM HOSPITAL.—Senior House Surgeon. Salary £110 per annum, with board, lodging, and washing.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Election to the Court of Examiners.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Assistant Physician.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square.—Honorary Dental Surgeon. Also Honorary Anæsthetist.

ST. PAUL'S HOSPITAL FOR SKIN AND URINARY DISEASES, Red Lion-square, W.C.—Clinical Assistant.

STEPNEY ANTI-TUBERCULOSIS DISPENSARY.—Medical Officer. Salary £250 per annum.

SUNDERLAND INFIRMARY.—House Physician. Salary £80 per annum, with board, residence, and washing.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician. Also House Surgeon. Salary £75 per annum each, with board, washing, attendance, &c.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician for six months. Salary £40, with board, lodging, and laundry.

WANDSWORTH UNION INFIRMARY, St. John's-hill, near Clapham Junction.—Junior Assistant Medical Officer, unmarried. Salary at rate of £120 per annum, with board, lodging, and washing.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Surgical Registrar. Salary £50 per annum.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

WEST SUSSEX COUNTY COUNCIL.—County Medical Officer of Health. Salary £500 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Ammanford, in the county of Carmarthen; at Ebchester, in the county of Durham; and at Creetown, in the county of Kirkcudbright.

Births, Marriages, and Deaths.

BIRTHS.

ARNISON.—On Dec. 12th, 1910, at 2, Saville-place, Newcastle-upon-Tyne, the wife of W. D. Arnison, M.D., of a daughter.

ODELL.—On Dec. 14th, at Ferndale, Torquay, the wife of William Odell, M.D., F.R.C.S., of a son.

PARRY.—On Dec. 6th, at Knole, Maidstone, the wife of Captain F. M. Parry, R.A.M.C., of a son.

MARRIAGES.

GRISEWOOD—JAMESON.—On Dec. 11th, at Bombay, Arnold Egbert Grisewood, Captain Indian Medical Service, youngest son of William Grisewood, Esq., of Egremont, Cheshire, to Edith, youngest daughter of Rev. A. P. C. Jameson, of the Rajputana Presbyterian Mission.

MORISON—DOVE.—On Dec. 7th, at St. Paul's Church, Carlisle, by the Rev. W. E. Strickland, assisted by Canon Bower, Fred Hughes Morison, M.D., Carlisle, to Jane Margaret (Daisy), only daughter of Mr. J. C. Dove, of St. Ann's, Stanwix, Carlisle.

DEATHS.

MACKENZIE.—On Dec. 6th, Brigade-Surgeon Lieutenant-Colonel John Mackenzie, M.D., A.M.D., of Cambridge-terrace, Dover, aged 77 years.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

REMINISCENT OF THE FOUNDER OF "THE LANCET."

THE story of THE LANCET in its turbulent days of infancy, the pertinacity with which its Founder waged war against what he considered to be abuses, the bitter spirit which animated the strong defending forces in their attempts to repel their enemy, and the ultimate success of the cause of justice and medical reform, are matters which have been minutely dealt with in these columns when lapse of time allowed them to be discussed dispassionately. Strongly confirmatory of much that we published on the matter, and of additional value because they contain the opinions of an eminent physician who was a contemporary of Mr. Wakley, are the following extracts from an autobiographical work of much interest published by Messrs. Smith, Elder, and Co. in 1884—viz., "Memoirs of Life and Work, by Charles J. B. Williams, M.D., F.R.S., Physician Extraordinary to H.M. the Queen, &c." A regular coöperator in our labours has brought them to our notice. Regretting the inadequacy of medical representation in Parliament, Dr. Williams proceeds to define the qualities which belong to a medical Member of Parliament. He should be—

"..... one well acquainted with the past history and present state of the medical institutions of the country, and who is sufficiently known and respected to possess the confidence of a large portion,—if not a majority, of the members of the Profession. Such a representative,—always well informed and accurate in his subject, and speaking with corresponding decision and a certain amount of self-assertion,—would always command the attention of the House, and become somewhat of a power in the State. The only M.P. who seems to me to have ever attained to anything like this position was the late Thomas Wakley. The early part of his career, as a censorious and radical journalist, was very different from that of his later years as a very popular Member of Parliament and coroner for the Metropolitan county. The journal,—which he created, and which *made him*,—in spite of its early ribaldries and abusive personalities, was interwoven with a web of truth and justice which gave strength to its attacks and gained the attention and support of the public; notwithstanding the bitter opposition and persecution from old corporations and long-established monopolies brought in array against it. .....

"When I first came to London [1830] the 'Lancet' was already a power, which had made itself felt:—relished by the profession at large, which has rather a democratic taste, and hailed as champion of their rights,—received with curious interest by the public, which is alive to anything strong or sensational:—but by the aristocracy of the Profession, including the accused Hospital authorities and Corporations—branded as malignant and revolutionary; and to be opposed in every possible way, private and public. To be suspected of connection with the 'Lancet' was to be tabooed by societies and respectable bodies; and woe to the student going in for examinations, if he were supposed to have supplied it with reports! Nevertheless the Journal continued to increase in circulation; and no wonder; for over and above the censorious and scurrilous matter, which served for sauce, it supplied useful food for the minds of its readers, in copious medical news and reports of lectures. Wakley showed his ability as an editor, not only in his own slashing and incisive articles in which he attacked abuses and held up to ridicule and condemnation the inefficiency and neglect of institutions and of their officers, but also in his gathering around him a staff of really clever and well-informed men, who could supply to his pages the most recent knowledge, and guide his counsels by the scientific spirit of progress, required by the forward movements of the times.

"At St. George's Hospital I was in the anti-'Lancet' camp, and was strongly prejudiced against that journal. In fact, I never read it; and all my support and contributions were bespoken by Dr. Macleod, physician of the Hospital, in behalf of the 'London Medical Gazette,' which he edited, and which was said to have been started in opposition to the 'Lancet.' At University College Mr. Wakley's sons were my pupils, and I soon began to receive from him marks of courtesy and confidence. He placed several members of his family under my care, and he recommended a number of patients to consult me. Among these were several Members of Parliament. They familiarly called him 'Tom Wakley,' and all testified how much he was liked and respected in the House by all parties .....

"Although I had these repeated proofs of Mr. Wakley's goodwill towards me, I knew little of him personally, till he consulted me for his own health in the autumn of 1861. I was agreeably surprised with the gentleness and geniality of his manners, and the homely simplicity of his conversation. His ill-health had impaired the vigour of his expression; but there was an earnestness in his look, with an occasional twinkle of his eye, showing forth the workings of energy and of humour in his nature. The hopeful courage and self-confidence, which had borne him up through life against any amount of opposition and difficulty, did not forsake him in the danger which now threatened him. I have not the notes of his case by me; but so far as I can recollect, it was one of inflammatory origin, rather than of tuberculous consumption: but it certainly went on to the formation of cavities, which rendered the prospect of the future very serious: and the more so, as his sanguine temperament and active mind tended to make him impatient of the restriction necessary for any chance of recovery. ..... In the balmy air and quiet of Madeira he so far improved as to pass the winter fairly without any material increase of disease. His death, which took place in May, was from hæmorrhage, brought on, after a boating excursion, by a fall in landing on the steep sloping beach (which I remember well, and the difficulties experienced in landing). The occurrence shows that he was still in possession of considerable activity and strength, and suggests the possibility that his ardent temperament was still apt to lead him beyond the bounds of prudence.

"Without doubt the works of Thomas Wakley entitle him to the foremost rank as a great Medical Reformer; and the successful results of his labours in correcting abuses and neglects of institutions, and in promoting and improving the means of medical education and diffusion of knowledge, have earned for him the gratitude of the Profession and of the Public. No one has ever so consistently and successfully defended the rights and best interests of the Medical Profession in Parliament, in Courts of Law, and through the Press; and if in his early life, his daring and asperities raised against him a host of enemies, they were mostly pacified, and many converted into friends, in his later years, when the beneficial fruits of his efforts became apparent."

LARGE INCISIONS.

To the Editor of THE LANCET.

SIR,—It is somewhat rash, I admit, for a general practitioner, especially after only one or two cases, but I should like to ask operating surgeons whether extensive abdominal incisions are justifiable.

I have had two patients recently, in each of whom the incision was made from the pubes to above the umbilicus, and each survived less than 12 hours. Such an event cannot be considered satisfactory from a surgical point of view. In one of the cases there was no doubt as to the human improbability of survival, but still it would have been more satisfactory had the patient succumbed as a result of a fight with the disease. Such an extensive incision, with the unavoidable consequent exposure of the abdominal viscera and prolonged exploration, does not, in my humble opinion, give the patient a ghost of a chance. Of course, it is important that local encysted collections of pus should be liberated, but the fact of a collection of pus being encysted shows that nature has been successful to some extent. It would appear better to leave such a collection alone in the absence of sufficient diagnostic points to localise it than to explore the general abdominal cavity. In the case referred to the chief seat of disease was in the pelvis, from which had spread a general septic peritonitis, with pus in the upper abdominal regions, but not encysted. The acute symptoms had lasted only about 12 hours previous to the time of admission to hospital and 24 hours from the time of operation—that is to say, the patient was up and about as usual 12 hours before going to the hospital and six hours before I was sent for.

As regards the other case, there was no reason that I could see, except the extensive incision and exposure, why the patient should not have survived. Of course, the operation was absolutely necessary, but what I am calling in question is the extent of the incision.

I have had a third case which may be mentioned here, general peritonitis having supervened on an obscure cause. The patient was sent to a hospital. An incision was first made in the left iliac region where nothing was found except the peritonitis, but when another incision was made in the right iliac region the seat of the trouble was found. The patient recovered. In my own mind I have no doubt that had such an extensive incision as was made in the other two cases been made in this case the result would not have been successful. It would be better to improve our diagnostic methods in localising disease, so that we need not resort to extensive explorations.

I am, Sir, yours faithfully,

Dec. 1st, 1910. X.

SCHOOL-GIRLS AND DOMESTIC HYGIENE.

AT Brighton a school for home training is now at work. It was opened in September, and it is hoped that 80 girls will every year pass through the school after leaving their elementary studies. So far, only a score or so of children have availed themselves of the course of lessons, whereas no fewer than 300 had left school. A member of the board has proposed that the course of home training should be compulsory for girls during the last three months of their school life, and this seems to be exactly the indication of the Board of Education Memorandum on the Teaching of Infant Care and Management in Public Elementary Schools which has just been issued. After referring to the importance of girls and women being taught how

to take care of infants, it says: "The ultimate aim of a State system of education given to girls in the public elementary schools should be to equip them in the best possible way for the duties which fall to them in after-life. What is commonly called book-learning has in past years been too much regarded as the supreme purpose of our elementary schools, and it is beginning to be widely realised that the teaching given in these schools might with advantage be made more practical in certain directions; and that it might, especially in the case of the elder girls, be more definitely directed towards arousing in, and increasing the knowledge of, the ordinary routine of domestic hygiene, including infant care. Few of these girls have mothers who are in a position to give them an efficient training in home management, and the home conditions must often render it very difficult for this to be done. It is thus desirable to consider in what way this subject may be most appropriately and usefully taught at the school in order to supplement, or correct, the inadequate, or inaccurate, knowledge of domestic matters acquired in the home; remembering always that the training should be of a twofold nature, namely, a training in domesticity and a training in infant care, and that it must be designed not to replace but to stimulate and encourage teaching by the mother in the home." Excellent work is already being carried on in Brighton with the object of diminishing the rate of infant mortality, while the school for home training has commenced its operations in the hope of increasing interest in matters domestic among girls between the ages of 14 and 16. The main idea of the school is to equip the girls as far as possible for the life they will lead in their own homes, teaching them at the same time economy, thrift, and the correct methods in practical household management. Thus, to a large degree, it would seem that the highly useful memorandum from the Board of Education has been anticipated at Brighton, and that if application were made to add domestic hygiene to the school curriculum for girls at a certain age, assent would readily be given. The progress of the scheme at Brighton will be watched with much hopeful interest.

SHOULD THE RHEUMATIC AND GOUTY DRINK CIDER?

To the Editor of THE LANCET.

SIR,—Medical opinion seems to be much divided on this question. Perhaps some of your readers would give me their experience.

I am, Sir, yours faithfully,

Windermere, Dec. 12th, 1910. THOS. DOBSON, M.D. St. And.

Constant Reader, in requesting information as to the date of the forthcoming International Hygiene Exhibition in Washington, has omitted to send his name and address. He is referred to the Diary of Congresses published this week.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1910:—

Dec. 18th-19th (Rome).—National Meeting of Sanitary Officials.
" 19th-22nd (Rome).—Twentieth Congress of Internal Medicine.

In 1911:—

Feb. 20th-25th (Cairo).—Fifth International Congress for the Blind.
March 2nd-6th (Berlin).—Thirty-second Balneological Congress.
" 23rd (Paris).—First Congress of French Medical Journalists.
April 4th-7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
" 18th-20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.
" 19th-22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
May-October (Dresden).—International Hygiene Exhibition.
May-October (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May-October (?) (London, Shepherd's Bush).—Coronation Exhibition.
June (Paris).—First Congress of the International Medical Association for the Prevention of War.
June 5th-8th (Kolberg, Prussia).—Fifth International Congress of Thalassotherapy.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Birmingham).—British Medical Association.
July 24th-29th (Belfast).—Congress of the Royal Sanitary Institute.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September (Brussels).—Exhibition of Fractures.
" (Turin).—International Congress of Pathology.
Sept. 11th-15th (Berlin).—National Congress for the Study and Prevention of Infantile Mortality (*Goutles de Lait*).
" 11th-16th (The Hague).—Thirteenth International Congress on Alcoholism.
" 18th-23rd (Sydney).—Australasian Medical Congress.
" 18th-24th (Turin).—Fourth National Congress of Hygiene.
" 24th-30th (Rome).—International Congress on Tuberculosis.
" 25th-29th (Rome) Seventh International Congress of Dermatology and Syphilology.
October (Cologne).—International Congress of Criminal Anthropology.
Oct. 1st-4th (Liège).—Second Congress of Alimentation.
Dec. 4th-9th (Havana, Cuba).—American Public Health Association.
(Date not fixed) (Genoa).—International Exhibition of Marine Hygiene.
(Date not fixed) (Rome).—International Exhibition of Social Hygiene.
(Date uncertain) (Turin).—International Exhibition of Industry and Labour.

In 1912:—

July (?) (Cologne).—International Congress of Nurses.
September (Prague).—International Congress of Radiology and Medical Electrology.
September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
" Visit of German Medical Men to America.
Nov. 22nd-29th (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

In 1913:—

(London).—Seventeenth International Congress of Medicine.
(Dresden (?)).—International Conference on Cancer.
August (Buffalo).—Fourth International Congress of School Hygiene.

In 1915:—

(London).—International Prison Congress.
(London).—Imperial Exhibition (?)

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Robinson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. R. Carling: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Dr. R. Wells: Differential Diagnosis of Early Forms of Insanity.
WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.
THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.
SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Baldness, its Causes and Treatment.

ANCOATS HOSPITAL, Manchester.

The next Clinic will be held on Thursday, Jan. 12th.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (21st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (22nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

SATURDAY (24th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 14th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec. 8	29·25	E.	...	56	52	47	48	49	Overcast
,, 9	29·11	S.W.	0·14	63	52	49	48	50	Cloudy
,, 10	28·95	S.	0·25	59	51	48	47	48	Raining
,, 11	29·16	S.W.	0·12	79	53	47	46	48	Cloudy
,, 12	29·39	S.	0·05	57	52	48	48	49	Overcast
,, 13	29·27	S.W.	0·13	66	53	47	48	51	Raining
,, 14	29·54	S.W.	0·15	66	52	50	48	50	Cloudy

Communications, Letters, &c., have been received from—

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An Address
ON
THE DISORDER OF MEDICAL CHARITY.

Delivered before the Stratford Division of the British Medical Association on Nov. 3rd, 1910,

BY LAURISTON E. SHAW, M.D. LOND., F.R.C.P. LOND.,
PHYSICIAN TO, AND LECTURER ON MEDICINE AT, GUY'S HOSPITAL.

GENTLEMEN,—I am obliged to the Stratford Division of the British Medical Association for giving me this opportunity of meeting some of its members, and hope that those who are present this evening will extend to my efforts to interest them in a branch of medical sociology a fair measure of that splendid commodity the disorder of which in its application to medicine forms the subject of my remarks.

Perhaps I ought at once to say that I do not propose to deal at any length with what one may call internal medical charity—the charity which one member of the profession may extend to his individual colleagues or to his brethren as a whole. As far as individual internal medical charity—a charity of spirit rather than action—is concerned, there is evidence that its growth is almost entirely proportionate to the opportunities which are afforded by such local meetings as this you are holding to-night for medical men to get to know each other intimately. There is nothing so effective as personal intercourse for promoting brotherly feelings amongst professional colleagues.

May I also say a few words on the question of collective internal medical charity? It appears to me that all who are jealous of the good name and fair reputation of our profession should spare no effort to secure that adequate arrangements are made for us to deal ourselves with those cases in which sickness or early death throws members of our profession or their dependents upon the indulgence of the community. Our profession should in this respect be self-supporting. Through some organisation it should be possible to make mutual provision for all such personal calamities. I lay stress on the mutual character of such provision. Whilst contributions should be collected from all members of the profession proportionate to their means, it should be recognised that the benefits of such a provident system should be restricted to those who had previous to their calamity shown the joint virtues of prudence, regard for others, and respect for professional interests by themselves subscribing to such a fund. Some such scheme of mutual medical benevolence seems almost a necessity if we are to hold up our heads as men of common prudence and common sense amongst the members of sister professions.

And now let us turn to external medical charity and divide it as before into individual and collective. It is to collective external charity that the title of my address is especially applicable, but before turning to its consideration I should like to refer to some aspects of individual external charity worthy of our consideration. To every one of us there will naturally be known a certain number of people whose circumstances will from various causes become straitened, and if such people will in the ordinary course turn to us for medical help we shall provide it, and any other charitable assistance that our compassion may suggest, on such terms and in such full measure as our means will allow. Such personal help in money or in kind is a matter entirely for our individual consciences, and we shall be guided by our knowledge of the circumstances and the character of the recipients, and shall do just as much harm or good as any other individual dispenser of charity who restricts his charitable instincts to cases within his own personal knowledge. But however private may be our practice, we can none of us be allowed to restrict our individual charity to this comparatively safe field, however extensive it may be. In addition there will be brought to our notice, often by people quite unknown to us, a large number of cases, also quite unknown to us, which we are asked to treat as private patients for nothing or at greatly reduced fees. Every general practitioner is familiar with the note, often on the choicest paper, which raises in his heart hopes of a new patient able to afford to pay a decent fee and which, beginning "Dear Dr. ——, knowing your kindness of heart," ends by putting upon his visiting list a "Kingdom comer" who will remain upon it till "relieved by art or released by death." Such vicarious philanthropists often sin rather more from ignorance than from real meanness, and they are too frequently encouraged by the complacency with which medical men respond to their requests. The means to do ill deeds makes ill deeds done, for, as I hope to show in a moment, ill-considered and promiscuous medical charity is an ill deed. Often it would be found that this patient taken on without fee at the philanthropist's request is paying a reduced fee to a brother practitioner with whose kindly attention the patient is entirely satisfied. A medical practitioner once told me it was his habit when asked by a third person to see a patient without fee to forward a contribution requesting that it might be used to secure for the patient paid medical advice which he was confident would prove more satisfactory than his own unpaid efforts. This course, though doubtless economical in the end, would be difficult for many of us to pursue, but all must recognise that steps should be taken to check vicarious private medical charity of this description by awakening the public conscience in the matter. Heaven knows that many poor people thus privately introduced to us are sadly in need of medical and other help, but this promiscuous private charity, like promiscuous public charity, is one of the most fruitful causes of the failure of suitable provident schemes whereby such poor people could secure without the pain of charity adequate provision in time of need.

Recently there came to my notice an incident which raised in me a hope that the evils of promiscuous individual charity might some day be brought home even to members of the medical profession. I chanced upon a personal explanation in the daily press from a bishop of a northern diocese of the Church of England. It appears that he had been snapshotted in the act of handing something to a beggar in the street and the photograph had been reproduced in a newspaper under some such title as "A Bishop giving Alms." Whereupon the bishop thought it necessary to explain that his action had been misinterpreted. He was not giving promiscuous alms, which might rightly be regarded as a social crime, but was merely handing to a beggar the address of some institution where his case could be investigated. I have sometimes thought the savage instinct for promiscuous charity which is so firmly implanted in us as a profession was an indication of our joint origin with the primeval priest. If our sister profession of the Church should set us an example in this matter there is hope that even we may in time see the errors of our ways.

But I must come to the main subject I am dealing with this evening—collective external medical charity, which is of greater moment because its greater volume causes greater harm, and because its reform requires our concerted action. To such an audience as this, medical men working in one of the densest areas of our industrial population, I need bring no evidence as to the excessive volume and uncoördinated character of medical charity. Nor will it ever again be necessary for conferences or commissions to collect evidence on this matter. Read where you like in the ponderous volumes of the Poor-law Commission's Report, wherever medical matters are dealt with, in special investigators' memoranda, in appendices of evidence, or in the "Majority" or "Minority" conclusions, you will find the most convincing indications that medical charity is excessive, without order, ineffective, obstructive. It is mere waste of time to pile up facts to make this indictment more damning; examination of the facts already established is only worth while in so far as it helps us to find remedies. If to-night I ask you to consider certain features which may explain why present conditions are so unsatisfactory, it will only be because such explanation needs to be appreciated before the defects can be dealt with.

Now at the outset I should like to say that the mere excess of the volume of medical charity is a splendid tribute to the quality of heart of all those who are responsible for it. Sympathy with pain and suffering of the individual and with the prospective grief of the friends and relatives in danger of seeing their beloved ones die is a quality none could see lessened one iota without fear for the future of our race. It is this sympathy which prompts us all, and will always

prompt us all whenever we are brought in contact with a sick person needing help, to throw to the winds all the most cherished convictions of the political economist and the charity organiser, and then and there to provide whatever is necessary without regard to ourselves, our colleagues, the patient's independence of character, or the destruction of the principles of thrift in the community at large. It is just because we recognise the impossibility of allowing our hearts to be controlled by our heads when face to face with cases of individual physical suffering that we should give the closest consideration in our cooler moments to the ultimate results of our actions. In any attempt that may be made to render the administration of medical charity more orderly the limitations of a civilised community in this direction must be reckoned with. We may, however, hope gradually to educate the impulsive philanthropist to take a wider view: encouraging him to neglect for the moment even an individual sufferer, we must lead him on to consider possibilities of prevention rather than cure of disease, and show him how his open hand and generous heart discourage arrangements which but for them would undoubtedly be made for dealing with sickness in those earlier stages when it is easily curable without entailing economic disaster.

But the imperative call of physical suffering and impending death does not appear to be by any means the sole cause of the excessive supply of medical charity. While there is no form of charity which makes so insistent an appeal to the charitable, and none which, from its immediate apparent results, seems so eminently satisfactory, there is none which in the carrying out is so cheap. I do not mean that the total cost of medical charity to the philanthropic subscribers is small, but that the quantity that can be bought for a given sum is very great compared with other charities. Think what one can buy for a thousand pounds by endowing a bed in a surgical ward of one of the great voluntary hospitals. In every year for evermore one could look forward to providing for 17 patients the usual average three weeks' residence in the ward, each occupant securing a first-class operation at the hands of a surgeon whose average fee for such operations would probably be 50 guineas, together with the same surgeon's visits two or three times a week, the visits twice a day of a qualified house surgeon, the help whenever needed of radiographers, actino-therapeutists, or other specialists, any form of laboratory investigation that may be required, and the constant attention of sisters, nurses, and dressers. Altogether for a sum, say of £30 a year, one can provide services which if they were provided at the normal rate for paying-patients in a private nursing home might easily amount to considerably more than the £1000 by the single payment of which the endowment is secured. No one can blame the philanthropist for laying out his money to such advantage. On such terms the wonder is that the actual growth of the volume of medical charity is not even more rapid than it is. If for the single payment of £100 one could secure each year for evermore 100 pounds' worth of the commodity provided by the Children's Country Holidays Fund, or by the London Playing Fields Association, one would feel disposed to invest every penny of one's savings at such splendid interest. The question is not why is such cheap charity so largely bought, but why is it so cheap to buy? Why can every philanthropist who thinks of building a hospital or founding a dispensary be confident that he can secure unlimited medical service free of cost?

If one were to accept as correct the remarks usually made by eminent laymen on ceremonial occasions connected with the laying of foundation-stones or the opening of new wings of hospitals, and allowed to pass without contradiction by members of the medical staff present, one must believe that medical men give their services to medical charities in the lavish manner I have described because they possess in even greater measure than other members of the community a spirit of self-sacrifice and devotion to the cause of suffering humanity. But even the orator must sometimes doubt the truth of his explanation, while I am confident that the members of the staff present on such occasions must often find it difficult to accept these implied compliments with composure. Some more satisfactory explanation must be found. It has lately been clearly set out for me by a correspondent criticising some remarks I made on the subject of medical charity in a recent Presidential address. My critic is a former pupil, whose distinguished career in medicine and in public affairs I am watching with great interest. He is not attached to the staff of any public medical charity, nor is he engaged in private practice. He writes to me: "In one point I venture to question in their entirety your conclusions as to the injustice of medical charities being run at the expense of the medical man who works them, in contrast to other charities run by parsons and schoolmasters. Parsons and schoolmasters have definite salaried jobs and are not engaged in private practice. They have, therefore, nothing to gain from the experience, advertisement, and honour of philanthropic charity." I am not at the moment defending myself from my friend's criticism, but I am making use of his admirably concise explanation of the motives which lead medical men to give their services so freely to charitable institutions. It is, as he clearly implies, because of the return they receive in the way of "experience, advertisement, and honour."

Must we not, as a body of medical men honestly endeavouring to understand the economics of medical charity with a view to its improvement in the public interest, admit the accuracy of my friend's description of the situation? Can anyone doubt that a chief cause of the cheapness of medical charity to the philanthropist is that it affords to the small section of the profession specially engaged in its administration experience, advertisement, and honour? It is for the public and the profession as a whole to consider how far the creation in this way of a small privileged class of the profession is really for the general advantage. Experience is a commodity which the public as a whole may well demand should be diffused throughout the general body of the medical profession mainly responsible for their treatment. Anything like a ring or corner in medical experience cannot be for the common good. The present system tends too much to make the experience gained by the staffs of public charities the prerogative of the very wealthy, who alone can pay high fees, and of the very poor, who alone can be regarded as proper recipients of charity. In the public interest arrangements should certainly be made for the privileged class freely to share their experience with their less favoured brethren by securing constant coöperation between the staffs of hospitals and the practitioners engaged in private practice amongst the neighbouring population.

How far the public gains by the advertisement of those engaged in charitable practice is in the main an economic question. I believe it is generally recognised in the commercial world that unless advertisement causes bankruptcy it is ultimately and in the long run paid for by the consumer. The peculiarity of advertisement by charitable medical practice is that the obvious and first cost is borne not by the advertiser but by his less prosperous colleagues, to whose possible patients he gives free service. Such patients could not in any case be the advertiser's paying patients and the amount of his advertisement is not, therefore, limited by any direct personal pecuniary consideration. Large as is the amount vicariously paid by the general practitioner for the consultant's advertisement, it is probable that in the long run the public as a whole pays the profession as a whole for the advertisement. Glaring financial injustices to individuals are incidentally caused by the system. Patients too honourable or too simple to seek charitable assistance at the hospital are often seriously crippled financially by the high fees which surgeons find themselves obliged to charge because of the large amount of free treatment given to others often far better able to pay. Even if the privileged member of the profession is amply repaid indirectly for his services, the general public and the main body of the profession are justified in looking askance at an arrangement which is largely responsible for the flood of medical charity, and has many other points of disadvantage for the community as a whole. Enough has been said, I think, as to the etiology of that part of the disorder of medical charity which consists in its excessive volume.

The next disorder of public medical charity which must claim our attention is the want of coördination between different medical charities and between medical charities and other agencies for providing medical assistance. This want of coördination is partly due to a want of proper definition of the aim of medical charity and partly to the natural individualism of all charity which makes it so resistant to schemes of organisation. The latter cause could doubtless be overcome if a successful attempt were made to define the real intention of the purveyors of medical charity. It should

be made clear whether medical charity is in competition with, or supplementary to, the Poor-law; whether it is desired to encourage or make unnecessary provident schemes whereby poorer patients can secure by insurance the benefits of ordinary medical attendance; and lastly, whether it is intended to provide ordinary medical attendance under all circumstances or only special services in the case of unusual or complicated injuries and diseases. Until these points are settled for medical charity as a whole, and for each individual institution which dispenses it, no proper coördination can be secured. Nor until this is done is it possible to deal with the third great defect of medical charity—namely, its failure to restrict its benefits to the proper recipients. All forms of inquiry as to the economic or medical fitness of those seeking medical charity are peculiarly difficult. One naturally revolts at adding any unnecessary physical or mental trouble to a patient in pain or discomfort. Unless it is quite clear what will be the upshot of our inquiries they seem particularly heartless. As a result of these considerations efforts at selection by means of inquiries are practically abortive, and none can doubt that by whatever criterion one measures the fitness for medical charity, the most glaring anomalies can everywhere be found.

The charges which are brought against medical charity by all who have investigated its problems are, first, that there is too much of it; second, that its operations lack proper coördination; and third, that the selection of its beneficiaries is unsatisfactory. I have endeavoured to lay before you some of the chief causes which lead to these disorders, and in the short time that still remains to us I would ask you to consider possible remedies. There are not wanting people of influence who are so distressed with the defects of medical charity and the apparent hopelessness of dealing with them, that they advocate a policy of ending rather than mending. Set up, they say, at the public cost means for doing in an orderly and efficient manner all that which charity now does, and collective medical charity will gradually disappear. They have precedent for this belief in the result upon charity schools of the establishment of a State system of elementary education. In estimating the likelihood of these people being able to gain their wishes we must not lose sight of the fact that the balance of political power is gradually passing from the hands of the classes who have hitherto governed medical charity into the hands of the masses who have received its benefits. Nor must we forget that our new masters are quite conscious of the truth of the motto of one of our great endowed charities, "It is more blessed to give than to receive." Is it not possible for us as a profession to put before the public a considered scheme for the control and direction of medical charity in such a manner that it shall not interfere with other schemes of medical help, and yet shall command the sympathy of large-hearted philanthropists anxious to promote the people's health and happiness?

There seem to be two outstanding features which must be met in any arrangement which can be expected to secure general acceptance. First, it must not interfere with any State scheme for dealing with the immediate treatment of the very poor nor with any provident schemes whereby the moderately poor may be enabled to insure by small payments for the cost of ordinary medical attendance. Secondly, it must recognise the splendid results which have in the past arisen from the partnership of medical charity, medical education, and medical research, and must foster a continuance of this association. Now, there is a custom honoured by long usage in the medical profession, and likely to be considerably extended as the complexity of medical practice and the development of specialism increase, whereby when cases under treatment by one practitioner develop conditions causing difficulty in diagnosis or treatment, or anxiety as to the ultimate outlook, a brother practitioner specially versed in the particular class of case, or more experienced in practice generally, is called in to confer or assist in any way mutually agreeable to the medical men concerned and their joint patient. Here, surely, is a rôle for medical charity. Let it provide the help corresponding to the second or consulting practitioner, refusing in any case to deal at first hand with patients, but freely offering assistance to those who in the usual way of private practice, by some provident system, or through the State, have secured the services of a medical attendant to deal with ordinary ailments and are found by him to require and to be unable to pay for further assistance. Here is a definite aim which would at once eliminate the greater part of overlapping and would enable charity satisfactorily to coördinate its activity with all other agencies for medical relief. Provident schemes would be given full opportunity for their development, while those interested in reforming the Poor-law would feel assured that their efforts would not be handicapped by competition with charity.

But how far would our second essential feature be fulfilled? Would medical charities conducted on these lines have due opportunity for continuing their good work in medical education and medical research? With one possible and unimportant exception I believe that some such arrangement as this would improve vastly the opportunities in both these directions in such of our medical charities as are also medical schools, and would raise to a higher level of excellence medical and surgical treatment in all charitable institutions. Incidentally it would provide for each member of the medical staff "experience" which he would always share with a brother general practitioner, "advertisement" far more valuable to himself and much less costly to his unprivileged professional colleagues, and "honour" unalloyed by any feeling that he was dealing shabbily with his less fortunate brethren. The cases sent to the charity would all be selected on account of some special interest or difficulty, and the appalling flood of trivialities which break the heart of the out-patient staff at all important hospitals would be relegated to general practitioners who could deal with them efficiently and at leisure and receive proper remuneration for the work.

The one point in which it seems possible this arrangement might fail fully to meet the requirements of medical education is as follows. The number of trivial ailments treated in the charities would, as has been said, be definitely diminished, and opportunities of practical instruction in the method of dealing with such simple cases might consequently be lessened. Personally I do not think much stress is laid upon this class of instruction in the medical schools at present. In any case it is clear that its loss could easily be compensated for by requiring each student to spend some time in attending the practice of a provident dispensary or similar institution. This would be a small matter for reorganisation compared with the far-reaching reforms effected by the proposed change. Can there be any fear that such an arrangement would alienate the sympathy of subscribers and check the voluntary support of hospitals? It should, indeed, have an opposite effect. The charitable public likes to see its money well spent. It is seriously and rightly disturbed by the reports of overcrowding, overlapping, and want of coördination in hospital methods as shown by its tendency to entrust its donations to central funds rather than to individual institutions. The principle of the out-patient department providing the sick poor with additional help in difficult cases has already been recognised as a reasonable basis for a special appeal for funds, and in the last annual report of one of our largest hospitals the prospective subscriber is informed that "the out-patients' section of the hospital in increasing degree fulfils its true function of 'the poor man's consultant.'"

If the profession should recognise in the development of medical charity in this direction a possible solution of many of its own difficulties and a hopeful way of maintaining the usefulness of our great voluntary medical institutions, of which as a nation we are justly proud, by what means is it possible to bring about the reform? The first essential step is the education of the governors of the charitable institutions. If they once appreciate that the value of the work of their institutions would be enhanced by this method they would not fail to adopt it, provided they could be assured that they ran no risk of losing subscriptions by so doing. I believe I have shown that any such fear is not warranted. But institutions are ever nervous of taking a new step unless they are assured that their competitors will follow them. Here we should receive great assistance from the central collecting funds such as King Edward's Fund and the Hospital Sunday and Saturday Funds. The announcement by these bodies that for a charity to conduct its work on these lines would be regarded as a virtue to be rewarded by extra grant would give moral and pecuniary courage to the individual hospitals. But the great force which I feel confident will in the end direct medical charity into this defined but effective field of activity is the public spirit of the medical men responsible for the work. It

is impossible to believe that men who possess the extraordinary advantages conferred on them by hospital appointments will tolerate much longer the continuance of a system which brings them "experience, advertisement, and honour" at such a heavy cost to their less fortunate colleagues, and hopelessly blocks the way to numerous urgently needed reforms in the medical treatment of the sick poor

An Address

ENTITLED

"MEDICAL STUDENTS AND MEDICAL PRACTITIONERS."

Delivered before the Aberdeen Students' Medical Society on Dec. 9th, 1910,

BY G. H. COLT, M.B., B.C. CAMB., F.R.C.S. ENG.,

ASSISTANT SURGEON, ROYAL INFIRMARY, ABERDEEN; AND ASSISTANT TO THE PROFESSOR OF SURGERY, UNIVERSITY OF ABERDEEN.

MR. PRESIDENT AND GENTLEMEN,—First let me thank you very much indeed for the honour you have done me by asking me to address you to-night. I very much appreciate the task, and although I may fail to do it justice the subject of the address is one of great interest to every medical man at the present time.

For our purpose this evening it is unnecessary to distinguish students from practitioners. The student becomes a qualified practitioner, and every practitioner is, or should be, a student to the end of his days. It is true that after qualification the outlook is different both as regards study and as regards responsibility, but just as there are things which are best learnt while you are unqualified, so there are matters which you will only acquire after you have begun practice. Let me urge you as students and as practitioners never to miss the opportunity of taking this responsibility. Nothing will teach you so much and nothing else will help you so well to learn and appreciate the difficulties of others. Responsibility is a great incentive to progress. It safeguards you from degenerating into mere money-making machines; it prevents you from taking advantage of others who are ignorant of medical things; it urges you to reassure and comfort the needy and suffering; and it brings you that sense of satisfaction and peace which is the one great reward that is your due.

VALUE OF PRACTICAL WORK.

In order to qualify yourselves for this responsibility it is absolutely necessary that you should have educated yourselves properly and should have acquired an accurate, scientific, and logical way of thinking. Moreover, you must be, above everything else, practical, and you will find that when you are confronted with any problem, especially with any sudden emergency, you will at once recall what you have already seen and observed for yourselves. You will as a rule be unable to call to mind what others have said or what this or that book says should be done. Of course, there are a certain number of broad lines of treatment, more particularly in surgery, that are easily learnt and remembered and that change slowly, but, speaking generally, the things that will be useful to you are the things which, as students and house surgeons, you have had the opportunities of seeing and watching. Let me urge you to take careful note of the patient's case and of his name and address, so that you may write to him or to his medical attendant from time to time, and so follow out the course of his disease. Many students leave hospital with an entirely erroneous idea of the natural history and course of disease, especially of malignant disease, because the inoperable and recurrent cases are stowed away in the workhouse. By employing the means I have mentioned you will at once learn a great deal that you would otherwise have missed. More especially will the need for early diagnosis and treatment in the case of malignant disease become apparent.

It is also essential that you should have been on the spot and should have observed for yourselves most, if not all, of the common emergencies of general surgery. Merely to come into a ward in the morning for half an hour and to learn that a patient was operated on during the night for a perforated gastric ulcer is valueless. You could have learnt that in the smoking-room. You should have been on the spot at the time that the patient was admitted, whether during the night or in the daytime, and you should have taken the history of the case accurately and gone thoroughly into the various physical signs which led up to the performance of the operation. The latter is such a very small part of the whole that if you have not actually seen and followed such cases for yourselves you will one day open the abdomen where the patient is suffering from alcoholic gastritis or from lead colic or you will operate for intestinal obstruction on a patient who has been taking diachylon in order to procure abortion. Still worse than this, you will delay operation in certain cases until it is far too late for you to relieve the patient at all. In passing, you should have asked yourselves this question, Could I have dealt with this case in an efficient manner without any assistance? At the present time there is hardly an emergency in general surgery, with the single exception of the surgery of the skull and brain, that you cannot deal with single handed if you lay your plans properly. Naturally, this is not a proceeding that one adopts for choice, but as a matter of necessity it is quite possible at the present day to carry through with success a large abdominal operation single-handed and often with comparative ease. Spinal analgesia when it is a success, is usually an unqualified success, and if by observation and practice you have learnt the fallacies and mistakes that contribute to mar the result you will succeed in the great majority of such cases. Local analgesia has also at the present time been brought to a state which is very near perfection. Automatic retractors can be bought or they can be improvised by means of weights, and, on the whole, if you have thought the matter out and are ready when the call comes you will not meet with any serious difficulty.

Consider the changes that occur in methods of treatment as may be exemplified by the study of appendicitis. Many a life is now saved by an early operation where formerly the patient would probably have died or would, at any rate, have had a long and tedious illness. Many such patients used to die with the symptoms of intestinal obstruction, from abdominal distension, general peritonitis, jaundice, portal pyæmia, subphrenic abscess, and pericarditis, the cause of the later symptoms being often extremely difficult and obscure by reason of the initial onset of the disease having been entirely missed. Study well, then, the natural course of disease, apart from medical and surgical interference, and study also the results of medical and surgical treatment, and compare all these things one with another.

At the present time the great question in surgery is this: "How can I best avoid the operation in my patient's interest, and is this course the right one to pursue?" The popular idea of surgery is one of the knife; diagnosis is entirely left out of account. The public forget that before an operation becomes necessary the question has to be decided as to whether there is any disease amenable to surgical interference present or not, and whether this disease is in the patient's head or his heels. The vomiting and constipation associated with cerebral tumour, or the symptoms of intraperitoneal injury associated with concussion of the brain are common instances, and there are many others. Thus diagnosis will be your first aim. No book will teach it to you but only practical work, and a great deal of that, and very conscientiously carried out. It should be automatic with you to doubt every statement that you hear or read, then you should go and look and see for yourselves and find out whether it is true, or false, or only partially true. Your state of mind should resemble that of the schoolboy who wrote in his examination paper: "We are taught that the natives of these parts used to dwell in caves, but no caves have been discovered and no natives." So many statements are copied from book to book without authority being quoted that theories become stated as facts. In the course of your verification of these matters you will come across many things that are not known, and it is your duty to the profession to stop and if possible investigate and record the issue for the benefit of others. Such opportunities are seldom repeated, and however small the new item may appear to be it should be published because there are always persons on the look out for these things or for confirmatory evidence of older knowledge, and these men will collect your information and place it with that obtained from other sources.

Even if the facts or theories that you publish are wrong they serve the useful purpose of making others think. Such a course sometimes proves to be expensive, but the benefit to the profession is great, and so is the benefit to those who have become sufficiently interested in the matter to stop and investigate it. For instance, at the present time there is great need of a book on the subject of the natural history and course of disease as observed over long periods in general practice. What is required could be written by a practitioner of long experience, but not by one of the younger members of the profession. It is, however, one of the greatest misfortunes that happen to us that hardly anyone sits down towards the end of his life to write out his experiences, facts, and conclusions for the benefit of others. Just at the very time when he is capable of putting these things in a proper light, when his wisdom is far greater than that of any book, at the time of his death this vast store of experimental knowledge perishes with him. There are so many things in medicine that are too long to be settled in a lifetime—it seems to need two or more lifetimes—that until some persons make this an object to be attained we shall be ignorant of much that deeply concerns us. Again and again you see the younger men begin the study of and the accumulation of facts concerning some more special branch of medicine; this leads to greater and greater experience and knowledge, far ahead of that possessed by the average man; the thing becomes a burden to its possessor; and when he retires he either does not care to put it on paper, or he is too much occupied with other things. Sometimes he does not consider it is worth while, and even if he did he would very likely find that it would take many years to touch on more than a few points in the whole. It should, however, be your endeavour, not merely to practise your profession, but to advance it a step or two further.

THE MEDICAL CURRICULUM.

This leads me to mention the obvious fact that all your teaching is very largely specialised. No one at the present time can possibly know all that there is to be known in the subjects of medical science, or about all diseases. Everyone lets some of it go and gives more time to other parts. In this way specialists arise, and the true specialist is the man who, having had a long and varied practical experience of general medicine and surgery, finds that he has been led to see and observe more in a certain limited area of it than in the rest. He is possibly attracted by this or that class of case and he takes to that kind of work more than to any other, and, as a rule, does it better.

Unfortunately, or perhaps fortunately, it is not possible for you to declare at the outset as students what branch you will ultimately take up. Were this possible you would perhaps save a great deal of time in obtaining your qualification, but you would not really gain much, and as matters stand at present you cannot adopt such a course, and it is doubtful if it will ever be possible for you to do so. Nevertheless, certain parts of our knowledge are far more advanced than others, and this results in much disproportion between the various subjects in the medical curriculum. For instance, a general practitioner could probably learn all the anatomy he is ever likely to require in a fortnight if he were properly taught. On the other hand, an aural surgeon can never hope to learn very much in the course of a whole lifetime about the physiology of the ear. All these matters are at sixes and sevens. It is said that the system you are put through teaches you to observe and to think, but it does not seem to occur to anyone that you can be taught to observe just as well, if not better, by employing material for the purpose that will ultimately be of use to you. You are not going to operate on crayfish, neither are you going to be professors of zoology. The question for the teacher should be, "How can I best ensure that at the end of his course the student shall have acquired a practical knowledge of his profession and shall still have some brains left to go on with?" It seems to me that if a student is correctly guided his brain should be at least twice as good at the end of his course as it was at the beginning, whereas sometimes it is undoubtedly twice as bad. It should be able to assimilate what it requires and store it away neatly pigeon-holed for future reference, but instead of that the brain that is left is often literally riddled with holes or sinuses, each one left by an examination. The one that extends between the two ears is a particularly large one. They discharge various facts and débris for a time and eventually become contracted, unimpressionable scars, incapable of further receiving facts or theories, much less of reasoning. The mill, in fact, receives you on an endless band, passes you along, shears off close all the tentacles and feelers and prolongations of your mind, sifts out and throws off as a useless by-product all the original thoughts and speculations that occur to everyone, and turns you out in tabloid form, duly labelled, with a string of letters dragging behind like the tail of a comet, of which the average layman does not know the meaning. But the comet is an abnormal one; the head of it is not as bright as the tail. The system, in fact, forces you to conform to a set standard at peril of being burnt at the stake, and if it does not succeed it labels you "chronic." It prevents you from doing your own work in your own way at the very time when your brain is most receptive. You enter the mill at the age of 8; if you are very lucky indeed you may leave it at 22. For 14 years you have to pass at least three examinations a year, the preparation for which effectually prevents you from educating yourselves in literature, languages, history and arts. During that time you transfer the brains of other people in a scrappy and imperfect manner to notebooks, which once you have used you will take good care never to open again. The substance of the lecture has passed through your head on to paper; it has not remained where it was designed to remain and where you paid for it to be placed; neither has it made you think. If the system were correct it might have done so, but it is incorrect. The chief function of a lecturer is to point out the relative importance of the various parts of a subject, and his power of doing so is much impaired if he has to give lessons in dictation. The system has outgrown itself in all directions; it is incongruous, it no longer teaches you to reason, but merely to pass examinations and to write badly. Incidentally it fills your brains with a smattering of rubbish that is too little to be of use for research and too voluminous to leave room for anything useful. If you come to define the system—not necessarily the medical system only—of so-called modern education you arrive at this statement: "A system that takes money from those who can seldom afford to part with it and gives it to those who sometimes do not deserve it." It should be the duty of everyone in this room to try to improve the present system of general education and of medical education in particular. It is a national duty, and one that we owe to those who come after us. Do not merely get quit of the system and say, "Anyhow, it does not affect me any more and so I will not make any suggestion." This is a sin of omission. To begin and live by it without trying to improve it is worse and is a sin of commission. Many others have to follow, and unless the way is properly paved the nation as a whole will degenerate. Remember the case of the aniline dye industry. The system turns out some good enough men, but a different system would probably turn out many better ones. When you get into the wards you are too old by some three years at least, and you are heartily tired of the whole thing. You do not stay long enough at the clinical part of your work, though you stay as long as you can; and where does your preliminary medical education come in? Is it not true that it proves to be almost entirely useless?

SUGGESTED REMEDIES.

It is true that many of your teachers are teachers by accident and not by design. These men will, as a rule, demonstrate to you things that are of use, and such as they have proved for themselves. They do it at great cost of time and patience, and if it were not that they themselves learn by doing it and are kept up to a high standard by it very likely the system would break down. It is probable that a remedy lies in a combination of the old apprenticeship system with the examination system, the student being apprenticed to his hospital and not to an individual, with two-thirds of the marks given for the apprenticeship and one-third for the examination; but there are objections to this arrangement, and it would be difficult to work. The subjects of preliminary medical education can be materially cut down. For instance, the whole study of biology can be reduced to the description of a single cell to which is added a *résumé* of the principles underlying the different methods of investigation of its structure and functions, and a long and complete demonstration under the microscope of very many different kinds of cells. Pharmacology, too, for your purpose can be greatly cut down, and as to materia medica, not one practitioner in a hundred remembers a tenth part of what he has to acquire for

examination purposes. For actual purposes of treatment or research he can always refer to the known and listed facts if he has been taught the correct use of his books. The manufacturing chemist has taken the place of this part of the older knowledge, and as a matter of business it is far cheaper and safer for you to employ him as part of your system than it is for you to spend your capital and brains in acquiring the minutiæ of such knowledge. After qualification you can always stop and return and verify or look up anything bearing on the subject. The subjects referred to and others that you study are so fascinating that you are apt to spend too long a time at them and to have too little time for clinical work. The weak point in the present system is that the really plodding, conscientious man who tries to learn his work and to get "signed up" as well is often unable to do so; moreover, he is not always the man who scores; the less conscientious but more superficial man sometimes does better. As showing the fallacy of assuming that passing preliminary examinations helps the study of medicine, you will often see men who have taken up the study of medicine late in life simply sail through and turn out well afterwards, and who up to then "did nothing in particular and did it very well."

TEXT-BOOKS.

As to books, the modern text-book is complete and cheap. Consider the vast store of information that has been multiplied quickly by modern printing and illustrative processes. If from such a book you only obtain one really sound idea you have had more than your money's worth; but you will obtain many. The proper use of such a book is as a guide-book. Medical classics are perhaps in a different class. To mention only a few of the more modern ones: Hilton's "Rest and Pain," Foster's "Physiology," Paget's "Lectures on Surgical Pathology," Macready's "Treatise on Ruptures," Clerk Maxwell's "Matter and Motion," Goodeve's "Elements of Mechanism." The system will effectually prevent you from having time to read them, for they do not pay. If ever a treatise did set out in well-expressed logical sequence the facts and theory of a science, that book is Foster's "Physiology," and his "Life of Claude Bernard" is similar. But instead of being given time to read them you are condemned to memorising the absorption bands of blood, tracts in the nervous system that resemble the trains in the "Continental Bradshaw," the names rather than the principles of rare surgical instruments and operations, and a mass of theory stated as fact in a most illogical sequence. Such things are crammed up regularly twice a year, although you always have access to them whenever they are wanted, but just because someone may once have asked a question bearing on them they must be memorised in case they are wanted at the examination. Avoid comparing the exquisite lithographic plates in Macready's "Ruptures" with the present-day photographic reproductions on heavy glazed paper; it is all too sad. Again, by reading the current numbers of the weekly and monthly journals as they appear, you will largely avoid the necessity for reading the more advanced and specialised text-books. You need not pay much attention to the names of the authors so long as you know the substance of the chief papers that deal with common things. But read everything critically, especially the text-book. Such a book may miss out an important point in a subject. For instance, in describing the operation of excision of the upper jaw the danger of fracturing the base of the skull is not mentioned, but I have twice seen it occur. Twice, also, have I seen gross malignant disease left behind in performing this operation in a suitable case, simply because the teacher said the malar bone was not to be removed and the operator had this obsession in his mind. If you study the septum between the maxilla and malar bones you will see what a large amount of harm has resulted from the teaching and practice of a cut-and-dried examination subject without at the same time pointing out its fallacies and limitations in practice. Therefore listen, but do not believe until you have looked for yourselves, and then not always, and certainly never in a hurry.

MEDICAL ETHICS AND OTHER MATTERS.

Now, as practitioners there are certain things that you should know about, certain things that you should have acquired, and certain others that you should do, which the tabloid gentleman has never heard of. They were left out in the scheduled list of the attainments that he should possess. In the first place, secrecy and no gossip. The fact that the patient is consulting you must on no account be known to anyone but the two of you without his consent. You must on on account give any information about any patient, rich or poor, either in hospital or in private practice, without consent. Secondly, you should have a sincere manner totally devoid of pompousness, a manner which has been described as being easy and free without being free and easy. Thirdly, you should know a good deal about the etiquette of your profession. Most of this knowledge is only an application of common sense and good manners, but still, there are certain special points that you should have inquired about, notably the proceeding at consultation. You should do as you would be done by, and never take the bread out of the mouth of another practitioner by underselling him. You should play a straight and honest game, and although I regret to say you will sometimes find that this course is not the one that pays best at the time—for we are all human—there is no doubt that it will do so in the long run. If you cannot cure your patient at least prevent him from falling into the hands of the quack, whose advertisements promise so much to all those who suffer from the things that everybody has got. As a local practitioner said the other day, "I think all medical men should have had a sporting education." Fourthly, on the day you register your qualification you should join a society for medical defence. Self-defence is the first law of nature. Alone you are powerless against the attacks of sundry people, but united you are strong and powerful, for your knowledge is very great and has been acquired laboriously and at great cost. This last fact should always be with you, and it is occasionally useful, as, for instance, when a patient comes to you demanding an explanation of certain symptoms and talking glibly of them. He has read them up in one of the popular "Child's Guide to Knowledge" series, sold by the publishers for the purpose of taking the money. He wastes your time and gives you nothing for it, a proceeding which, if carried on too long, leads to the workhouse. You say to him, "How long can you spare me to tell you this?" He says, "How long do you require." You say, "It took me five years to learn, and it will take at least that." He leaves shortly after. Then, again, you must not be nervous in your practice. You are not likely to be. That you may be very nervous in the totally abnormal mental atmosphere of an examination is nothing. Everyone is, some more so than others, but when you come to practice, if you have succeeded in screwing sufficient time out of the system as you go through it, you will be dealing with matters of which you have already had practical experience, or, at any rate, you will be able to recall a somewhat similar case and you will find that you are really not nervous. For much the same reason things will not frighten you; indeed, sometimes the difficulty will be for you to get sufficiently excited to act quickly. The earthworm and the snail move so slowly, their parts are so intricate, that if you have devoted much attention to them you may possibly still be pondering and thinking, and, indeed, you may be so polarised on them that the flash of the symptoms of angina across the patient's countenance will pass unobserved when you come to see it. Again, you should among other things be able to draw up a will or to take a deposition and see that such is duly executed. Remember, above all things, that the dead cannot speak, and when the speculative insurance agent comes to see if he can avoid his obligation to the widow and children of the dead man, be very careful what you say as to the length of time the patient had been afflicted. In a case of doubt surely the dead should have the benefit of it.

The public are ignorant of medical matters, and it is a good thing that this is the case, because otherwise many of them would become hypochondriacal. The press, however, is teaching the public too much without at the same time warning them that they can never understand medical things without a five years' practical training. A few words in plain language from the patient's point of view will always be acceptable, and if you put the matter clearly you will not have any difficulty and will not be worried when things do not run a rapidly successful course. And never say that there is no risk in an operation, however simple. There is always a risk, but fortunately it is usually a small one. Most distressing incidents occur through neglect of this simple precaution.

Your profession should be taken seriously, though the

humorous side of it will often appeal to you irresistibly. This serves to help you on your way and you will often need it. Another practitioner here remarked lately: "Three things are necessary for a successful practitioner; first, the patience of Job; secondly, the temper of an angel; and thirdly, the power to work miracles." So you see you are likely to need a little fun as well.

PROSPECTS OF SUCCESS.

Then as regards success. In general practice your manner will be the making of you. It has also been facetiously stated that you will make a large practice if you give the mother a clinical thermometer and get on the telephone. You may also succeed by being able to eat a large number of dinners without getting ill. You may even succeed by ability, but this is rare. In whatever way you manage it, do not become mere hurried, money-making machines, devoid of courtesy and observation. You owe more to your profession than that. If you want to make money go into trade; buy carpets from the natives at twopence each and sell them elsewhere at five pounds. It is fairly simple and is also very intellectual, especially if there is competition, but it is not professional, though you will be able to have a holiday whenever you like and you will seldom work more than six hours a day. As medical men you will work all day and most of the night, and will seldom get a holiday.

As practitioners, using the term in the widest sense, we have several advantages. We are at once admitted to any class of society that we like. We carry our profession with us; a certain small stock-in-trade is often necessary, but speaking generally we have only to be in attendance for the matter to be settled. We are nearly certain, if we remain well, to be able to make a living, and we undoubtedly earn the unbounded gratitude of the whole of the civilised world. It would take too long this evening to go into the question of our other privileges. They are well set out in Kipling's address. We are subject to many disadvantages. Our labour is sweated at every turn. In our junior appointments we at least expect in return for giving our labour cheap to have sufficient leisure in which to study and digest the cases that are passing through our hands; it is what we pay for; but in some parts of the country the amount of material passing through the infirmaries has so increased latterly that the junior men are run off their legs with routine work and this reward is denied them. Although the possessors of skill and knowledge, which presumably should be valuable to our employers, our time is wasted in having to enter names in books and files, such work, in fact, as we should give to our children to do at home. In practice we contract a large number of bad debts that we cannot recover without losing our patients, and we are generally the last to be paid. Throughout our lives we have none of the pleasures such as fall to an actor or a statesman. We do not experience the joy of waiting for a fine reception and the plaudits of the crowd. We cannot go on and count our laughs; indeed, they are more usually scored up against us. We are engaged in continually summing-up evidence impartially and trying to steer clear of excess of fashion or of a craze. We become impassive, so much so that sometimes we fail to appreciate the value of the evidence ourselves and become mere mechanical ciphers rather than integral parts of a train of circumstances which we ought to guide intelligently, and when the day's work is finished we may have no interest left unless we have our hobbies. Towards the end of our careers there are only a small number of pensions for us, although as a professional class we are relatively numerous.

And in conclusion, the poet observes with respect to age and health:—

> "God doth not need
> Either man's work or his own gifts; who best
> Bear his mild yoke, they serve him best: his state
> Is kingly; thousands at his bidding speed,
> And post o'er land and ocean without rest;
> They also serve who only stand and wait."

RUSSIAN SURGEON'S CENTENARY.—The centenary of the birth of the famous Russian surgeon, N. I. Pirogoff, was celebrated at the Pirogoff Museum, St. Petersburg, on Nov. 13th (26th) last in the presence of many distinguished members of the surgical and medical professions.

THE TREATMENT OF SPLENIC ANÆMIA BY SPLENECTOMY.[1]

BY G. A. SUTHERLAND, M.D. EDIN., F.R.C.P. LOND.,
PHYSICIAN TO THE HAMPSTEAD AND NORTH-WEST LONDON HOSPITAL, AND TO THE PADDINGTON GREEN CHILDREN'S HOSPITAL;
AND
F. F. BURGHARD, M.S. LOND., F.R.C.S. ENG.,
SURGEON TO KING'S COLLEGE HOSPITAL AND TO THE PADDINGTON GREEN CHILDREN'S HOSPITAL.

SPLENIC anæmia or primary splenomegaly is a disease almost always, if not invariably, fatal, whatever the medical treatment may be. The pathology is not yet clearly determined, and reliance on the diagnosis must be placed at present on certain clinical features which are fairly clearly defined. In former years the term splenic anæmia has been loosely applied to other disorders of the blood and other diseases of the spleen, as is clearly shown in many recorded cases. But if surgical treatment is to be adopted it is of the greatest importance to have the disease clearly defined, as otherwise disastrous results may follow and the operation be unjustly condemned.

Professor Osler[2] has done much in differentiating the characteristics of splenic anæmia, and Dr. H. D. Rolleston[3] has summarised them as follows: 1. Anæmia of the type usually spoken of as chlorotic—i.e., a diminution in the number of red corpuscles, with a diminished corpuscular value in the hæmoglobin. 2. Absence of any leucocytosis, usually leucopenia. 3. Considerable splenic enlargement, which cannot be correlated with any other known cause, such as leukæmia, syphilis, tuberculosis, malaria, or hepatic cirrhosis. 4. The prolonged nature of the disease. 5. The tendency to gastro-intestinal hæmorrhage from time to time. 6. The termination of the disease, if sufficiently prolonged, in hepatic cirrhosis with ascites (Banti's disease).

The last three of the above criteria may be described as accidental and non-essential. While Osler and Irving Lyon lay stress on the prolonged course of the disease, Frederick Taylor and Samuel West emphasise the fact that death usually occurs in from six months to four years. As a matter of fact, there would appear to be acute or subacute cases and chronic cases, the latter of which may last from 10 to 20 years. It may be that the juvenile type of disease tends to run a more acute course than that met with in adult life, as so often happens in the case of other affections. Certainly in the two cases to be related it was the steady progress of the patients downhill which led to the adoption of surgical treatment. Another of the points noted above—namely, the occurrence of hæmatemesis—does not appear to be so common in children as in adults, but Osler has recorded one instance. The termination of splenic anæmia in Banti's disease, hepatic cirrhosis with ascites, seems open to question, at least as regards the majority of cases, and Osler and Senator have pointed out that ascites may occur as a terminal event in anæmia without any hepatic cirrhosis.

The first three of the above criteria give the essential features of the disease. It will be noted that they rather exclude other diseases than indicate any special characteristics of splenic anæmia. In addition the appearance of the patient is very striking, the profound pallor, with a creamy tinge in the skin generally. We hope it may be possible to add a fourth criterion of the disease, at least in the case of children—namely, the rapid disappearance of all symptoms after splenectomy. Further experience of the results of operative treatment must be obtained before this can be done. The treatment by splenectomy is not new. Armstrong[4] has collected from the literature 32 cases of splenectomy for splenic anæmia, with 23 recoveries and 9 deaths. At the same time, it must be noted that many cases are included in which the diagnosis is by no means clear. The operation has rarely been performed in this country. In the Transactions of the Clinical Society of London there is only one case of splenectomy for disease recorded; the disease was leukæmia and the result fatal. It

[1] A paper read at the Clinical Section of the Royal Society of Medicine on Dec. 9th, 1910.
[2] American Journal of the Medical Sciences, January, 1900.
[3] Clinical Journal, vol. xix., p. 403.
[4] Brit. Med. Jour. vol. ii., 1906, p. 1273.

is clear also from the recorded cases that too often splenectomy was performed as a last chance, when the disease had lasted for many years and when a successful result could scarcely be expected.

CASE 1.—The patient, a girl aged 12 years, was admitted to hospital on April 24th, 1906, suffering from rheumatism. For the previous two years she had been languid and complaining of pains in the extremities. At times the knee and other joints had been swollen and painful. No abdominal swelling had been noted previously to admission. The parents were healthy and there were five other children—all boys—alive and healthy. Four children had died—all girls—three of them when quite young, and the fourth from splenic anæmia at the age of 13 years. Her case has been published by Dr. Frederick Taylor in the Guy's Hospital Reports for 1895, under the title "A Case of Splenic Anæmia or Primary Splenomegaly."

On admission the patient was well nourished but distinctly anæmic, the skin having a pale yellow tint all over, and the lips having little colour. The conjunctivæ were not jaundiced. There was a deeper pigmentation, of a brown colour, at some pressure areas—e.g., above the knees where the garters had been worn. The left side of the abdomen was occupied by a large solid mass, evidently an enlarged spleen, which measured 8 inches in its longest diameter, as tested by percussion and palpation. There was no pain or tenderness about this swelling, which was freely moveable in all directions The liver was not enlarged and there was no bile in the urine. The heart was slightly enlarged and a soft systolic murmur was present at the apex, considered valvular in origin. Apart from the subacute rheumatism from which she was then suffering there was no evidence of constitutional disease, such as syphilis, tuberculosis, or malaria. There were no hæmorrhages and no enlarged lymphatic glands. The result of examination of the urinary system and of the fundus oculi was negative. The temperature at times reached 100° F. in the evening, but there were no definite pyrexial attacks. On admission the red blood corpuscles were 2,420,000, the hæmoglobin being 56 per cent., and the white blood corpuscles numbering 9800. A differential count of the white cells showed nothing abnormal. The results of the various blood examinations are seen in the accompanying chart. (Fig. 1.) It will be noted that on May 30th there is a condition of leucopenia, as is common in this affection, but the coexistence of subacute rheumatism may at other times have kept up the number of white cells, although a definite leucocytosis did not occur until after the operation. Treatment was carried out by means of arsenic, iron, X rays (three sittings), and full diet, and later the patient was sent to the convalescent home.

On readmission at the end of June the patient was distinctly more anæmic, and both red cells and the hæmoglobin were found to be diminished. After consultation it was decided to excise the spleen, and this was done on July 20th. The spleen with the contained blood weighed 2 pounds, and showed general hyperplasia of all the tissues. There was no marked shock after the operation, and when the effects of the anæsthetic had passed off the patient made a rapid recovery. Three days after the operation it was found that the red cells had increased from 2,500,000 to 4,700,000, and the hæmoglobin from 40 per cent. to 76 per cent., an improvement which was maintained until at the end of another week the red cells were normal in number. This alteration was also visible in the appearance of the child; the yellow tinge of the skin had gone, the cheeks were pink in colour, and the lips were taking on a healthy red hue. There was no compensatory enlargement of the lymphatic glands.

The further history of the case as regards symptoms of splenic anæmia is negative. A condition of subacute rheumatism continued for two years, during which mitral stenosis developed, and an attack of chorea occurred. She was seen again in November, 1910, at the age of 17½ years, and four years after the operation. She was then a well-grown girl in service as a nursemaid. The cardiac lesion persisted, but there had not been any symptoms of active rheumatism for two years. There were no marked signs of anæmia in her appearance. Blood examination showed red blood corpuscles 3,600,000, hæmoglobin 78 per cent., and white blood corpuscles 6400. The girl expressed herself as feeling quite well and able for her work.

CASE 2.—The patient, a girl aged 6 years, was sent to hospital on April 7th, 1910, by Mr. W. M. Noott of Kensington, with a diagnosis of anæmia and enlarged spleen. The mother stated that the child had been pale since birth, and that this pallor had not increased recently. She had been short of breath on exertion for some time. Two months previously she had had a feverish attack, with pain in the splenic region, and Mr. Noott had then discovered the enlarged spleen. There had never been purpura or any form of hæmorrhage. Her previous health had been good, and she had not suffered from any other form of illness. The family history was unimportant and revealed no other case of splenic disease.

On admission the child was found to be well nourished and of healthy appearance apart from the anæmia. The skin of the face was pale, of a creamy tint, with a faint pink flush on the cheeks. The lips, eyelids, and gums were pale. The yellowish tinge of the face was seen also in the conjunctivæ, and in the skin generally. There was no deeper staining over pressure points. Some of the cervical glands were slightly enlarged, but there was no evidence of any general glandular enlargement. A large solid mass was felt in the left side of the abdomen which was evidently an enlarged spleen. It extended downwards a finger's breadth beyond the umbilicus, and its longest diameter measured six inches. The spleen was freely moveable and not tender or painful. The liver was not enlarged and there was no bile in the urine. Examination of the blood showed red blood corpuscles 2,550,000, white blood corpuscles 6300, and hæmoglobin 34 per cent. No increased bleeding occurred on pricking for the blood examination. There was no evidence of disease in the cardiac, pulmonary, or renal systems. The fundus oculi showed no abnormalities. Von Pirquet's test and the Wassermann reaction were negative. The temperature usually rose to 100° F. at night, falling to normal in the morning. Epistaxis occurred once during her stay in hospital. The treatment was rest in bed, full diet, arsenic, and iron. After a fortnight in the hospital the patient developed measles and was sent home. During the summer she spent some weeks at the convalescent home and her colour improved considerably. The spleen varied in size from time to time, but only to a slight degree.

The patient was readmitted to the hospital on Oct. 8th, 1910. The only changes to be noted were the increasing pallor, listlessness, and tiredness. Examination of the blood on Oct. 10th gave the following result:—Red blood corpuscles, 1,870,000; hæmoglobin, 30 per cent.; white blood corpuscles, 2400; and colour index, 0·8. The red corpuscles were very various in size, megalocytes, microcytes, and all intermediate gradations being present. There was a little polychromatophilia in some of the corpuscles, but it was not marked, and there was no punctate basophilia. The red cells were normally shaped, poikilocytosis being absent. Nucleated red cells, all normoblasts, were present to the extent of about 600 per cubic millimetre. Amongst the white cells there were large hyalines (0·4 per cent.), myelocytes (1·2 per cent.), and mast cells (1·2 per cent.). After consultation it was decided to excise the spleen and this was done on Oct. 17th. The patient stood the operation well, there was no marked shock, and after the effects of the anæsthetic had passed off she had no untoward symptoms of any kind. The temperature continued normal after the third day. On removal the spleen showed no gross changes save its great size and congested appearance; it weighed one pound. As regards the histological changes, Dr. W. d'Este Emery found no very marked abnormalities of structure save the general hyperplasia. On Oct. 21st—four days after the operation—it was noted that the patient's colour had decidedly improved, that the lips were redder in colour, and that the yellow tint of the conjunctivæ and skin had gone. Examination of the blood on the same day confirmed these signs of improvement. A blood count gave red blood corpuscles 4,000,000, hæmoglobin 52 per cent., white blood corpuscles 10,800, and colour index 0·6. There were no abnormal red corpuscles, nucleated or degenerated forms, seen, and no abnormal leucocytes. The child improved daily, and the languor and listlessness which had been present all through the illness passed off. There was no compensatory enlargement of the lymphatic glands. On the seventeenth day after the operation the red corpuscles were 5,200,000, the white corpuscles 3400, and the hæmoglobin

was 65 per cent. The patient is at present—seven weeks after the operation—at the convalescent home, and is doing well.

The operation.—The steps of the operation call for little remark. In both cases the incision was made through the left rectus parallel and just internal to the left linea semilunaris. In the first the spleen was so much enlarged that its undue mobility allowed it to be dislocated into the wound and outside the abdomen with great ease. In the second case the mobility of the organ was not so marked, and the only difficulty experienced in the operation was to dislocate the spleen without injuring it. In order to accomplish this satisfactorily the outer edge of the incision had to be depressed forcibly with large retractors.

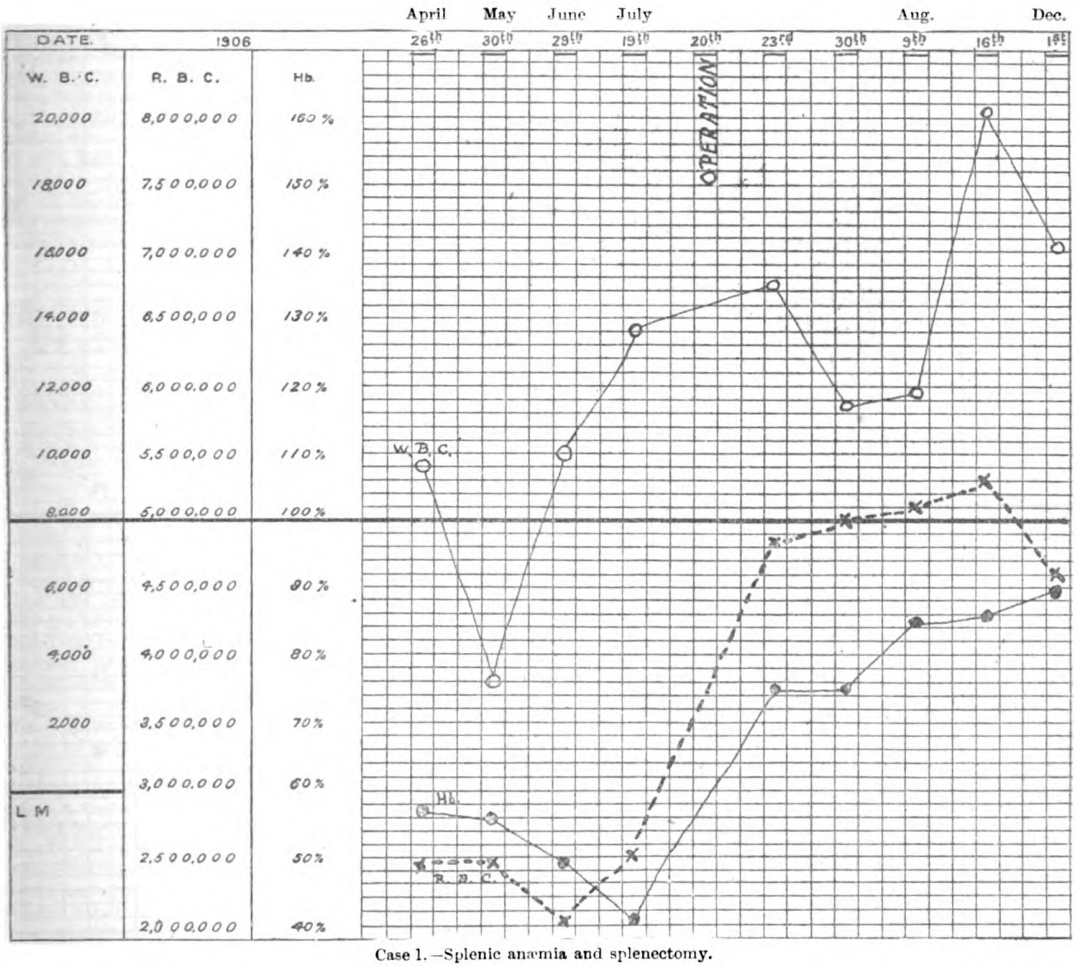
In neither case were there any adhesions between the capsule of the spleen and the abdominal wall, and the question of hæmorrhage never caused the least anxiety. The only bleeding was from the abdominal incision, and care was taken to reduce this to a minimum by clamping every bleeding point as it was met with. The actual removal of the spleen was done methodically as follows. When the spleen had been protruded through the wound, cautious traction was exerted so as to put upon the stretch the gastro-splenic omentum running from the hilum of the spleen to the fundus of the stomach. The anterior layer of this was then divided separately between pressure forceps, three pairs being used on each side of the line of division. This exposed the left gastro-epiploic artery and the vasa brevia lying in front of the posterior layer of the ligament. These vessels were pushed aside, while the smaller vessels were controlled at their entrance into the hilum by a large clamp forceps and the posterior layer of the omentum was then taken up in sections quite close to the fundus of the stomach by three pairs of pressure forceps and divided with scissors between the forceps and the clamp. This severance of the gastro-splenic omentum allowed the spleen to be rotated still further outwards, and pulled up into easy reach the lieno-renal ligament with the splenic artery and vein between its layers. This traction proved very useful as it converted this structure into a true ligament, so that it was easy to transfix it with one blade of the pressure forceps where it was clear of vessels. A large clamp was put on near the hilum, and the ligament and the vessels were then secured by two pairs of pressure forceps about half an inch nearer the spine, and the tissues were then divided between and the spleen removed.

An interesting practical point developed in connexion with the ligature of the vessels. In the first case no ligatures were applied until the spleen had been removed. It was then found that the forceps on the splenic vessels and the lieno-renal ligament at once retracted deeply into the abdomen under the vault of the diaphragm, and great difficulty was experienced in tying the ligatures owing to the cramped space in which the hands had to work. In the second case, therefore, each ligature was applied and tied immediately the forceps were freed by dividing the tissues upon which they were placed, and in this way no difficulty was experienced in securing every vessel as it was divided. The ligatures were of medium-sized chromic catgut and it was not judged necessary to reinforce them by a surrounding ligature.

The entire operation was done in a very short time and at no time was any shock apparent. The abdomen was closed in three layers in the usual way.

In this paper we are concerned with the pathology of splenic anæmia only so far as it relates to the question of

FIG. 1.



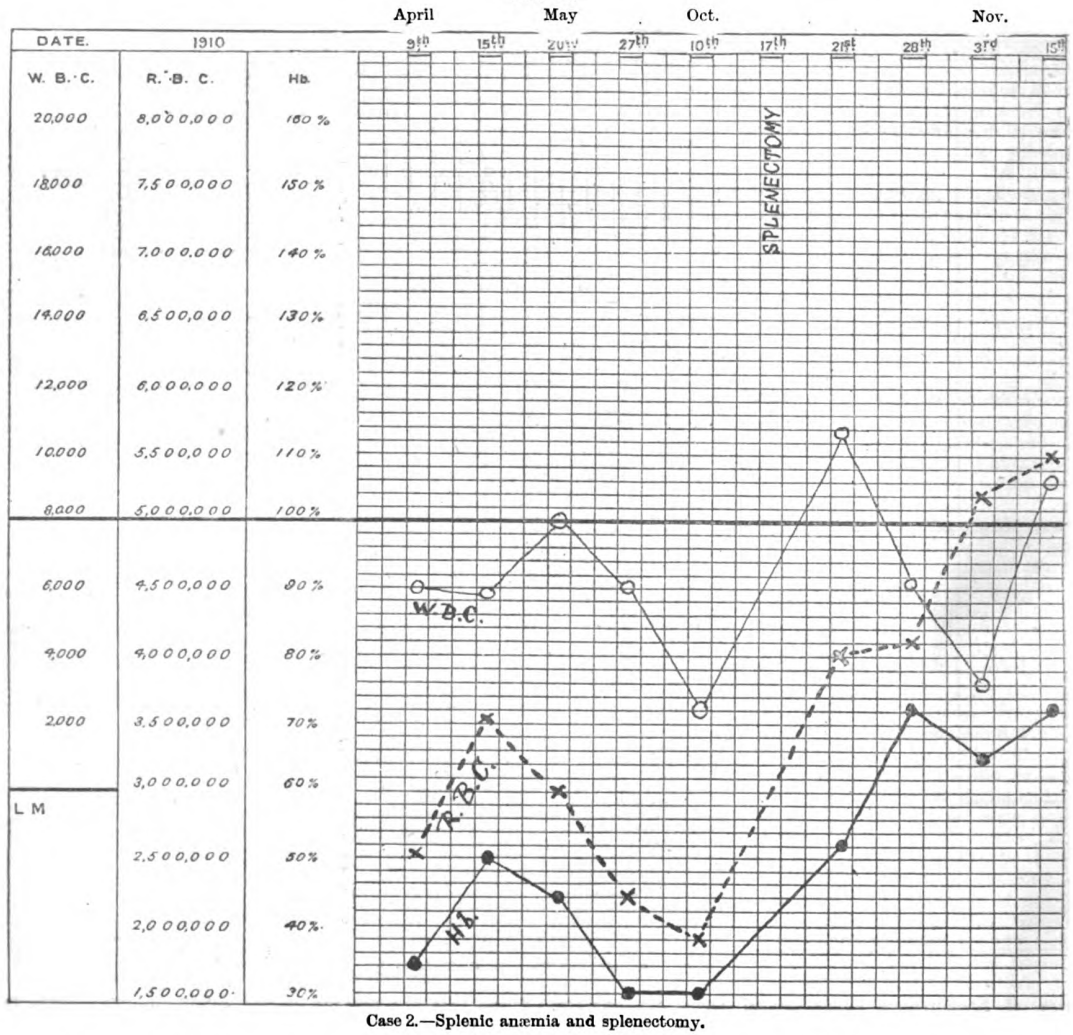
Case 1.—Splenic anæmia and splenectomy.

surgical treatment. There is no direct evidence of primary disease in any other tissue of the body than the spleen, and if a constitutional disease like malaria is present the case cannot be regarded as one of primary splenomegaly. Rolleston has suggested that "a chronic infective or toxic process has its headquarters in the spleen, and that the poisons produced there give rise in the first instance to endothelial hyperplasia and fibrosis of that organ, and later so inhibit blood formation as to produce anæmia of the type usually regarded as chlorotic." Our experience does not support the view that there is an inhibition of blood formation. We believe that the spleen is actively engaged in the destruction of blood cells. The yellowish tinge in the skin and in the conjunctivæ is probably due to active hæmolysis in the spleen—it is certainly not due to any disturbance of the liver function. The condition after splenectomy supports this view. The pigmentation of the skin and conjunctivæ disappears within a week, and at the same time the number of red cells and the amount of hæmoglobin increase with astonishing rapidity. If there had been inhibition of blood formation we should not have expected such a rapid return to normal, but if the blood-forming organs had been working at high pressure to make up for the destruction of red cells this rapid recovery, when hæmolysis had ceased, is exactly what would have been expected. In connexion with Case 2 it will be noted that the abnormal and degenerated red blood cells which were present before operation had entirely disappeared at the time of the first blood count after the operation. This also points to a condition of active hæmolysis in splenic anæmia, which ceases with the removal of the spleen.

The examination of the spleen, post mortem and after excision, has been most elaborately carried out, more especially by American investigators, and has failed to reveal any clear evidence as to the nature of the disease. The tendency has, therefore, been to fall back on some theory of toxæmia due to the changes in the spleen. Yet the toxæmic result may be described as an exaggeration of what is usually considered the normal function of the spleen—namely, the removal or destruction of red cells.

On the other hand, if we assume a loss of vaso-motor control in the splenic artery leading to overfilling of the spleen with arterial blood, it is possible to understand all the morbid changes in the spleen and in the blood. The spleen itself would be enlarged and its substance generally, Malpighian corpuscles, endothelial cells, connective tissue, &c., would be in a state of active hyperplasia. This is the usual condition found after splenectomy or post mortem, with the added changes which time has brought in prolonged cases. At the same time, the functional activity of the spleen would be increased, and the function which is usually ascribed to it is that of removing red corpuscles by means of its large endothelial cells. Instead of mere scavenging work it is easy to understand that these endothelial cells, in greatly increased numbers, may attack not only effete cells but those which are healthy, and that active hæmolysis and destruction of hæmoglobin follow. The hæmatemesis which is such a striking feature in many of the cases will be easily explained on the same assumption—i.e., that the arterial blood sent to the stomach through the splenic artery is excessive in amount, and over-distension and rupture of the stomach vessels result. An analogous condition is seen in the case of

FIG. 2.



Case 2.—Splenic anæmia and splenectomy.

the thyroid gland in Graves's disease. The thyroid is distended with blood, its tissues are in a state of hyperplasia, and its normal secretion is poured out in increased and toxic amount. We do not wish to press the analogy, but to emphasise the point that a disease of the thyroid is not assumed to be present in Graves's disease, but only a disturbance of function, and that similarly a disease is not necessarily present in the spleen in splenic anæmia, but simply a disturbance of function. If this be accepted, and if it be recognised that this disturbance of function will usually have a fatal termination, the operation of splenectomy will be fully justified and will probably be more extensively carried out in the future than it has been in the past.

As regards the ultimate result of the operation we can only give particulars in one case, the other having been so recently operated on. The first patient when seen at the age of 17½ years, four years after the operation, was a healthy girl without any signs of splenic anæmia. This result may be contrasted with the fate of her sister, who died at the age of 13 years from progressive anæmia and debility. In the published cases of this disease in which the spleen was successfully removed the ultimate result seems to have been a complete cure, records having been obtained up to eight years after operation. It is probable that the two factors present in our cases, the youth of the patient and the comparatively early stage of the affection, were of importance from the point of view of prognosis. While a preliminary course of medical treatment will naturally be adopted in all cases of splenic anæmia, experience has shown that it is never curative, and if the diagnosis is clear treatment by splenectomy should not be unduly delayed.

THE SURGICAL TREATMENT OF CANCER OF THE VULVA AND ITS PRE-CANCEROUS STAGES.

BY FREDERICK J. McCANN, M.D. EDIN., F.R.C.S. ENG.,

PHYSICIAN TO IN-PATIENTS AT THE SAMARITAN FREE HOSPITAL FOR WOMEN MARYLEBONE ROAD, N.W.; LECTURER ON GYNÆCOLOGY, MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, CHENIES STREET, W.C.

IT is a matter of common knowledge that the ultimate results of operations for vulvar carcinoma hitherto published are unsatisfactory, both local recurrence and recurrence in the inguinal and iliac glands being frequently observed. I believe the unsatisfactory results are due to the operations which are advised and practised for this disease either being incomplete or only employed when the disease is already advanced. Improved results will be obtained by the employment of a complete operation in the early stages of the disease. A nodule or a suspicious ulcer on a labium is not difficult to recognise, but what is of greater importance is to recognise and to treat the precancerous stages. Leucoplakial patches occur on the labia and precede the development of cancer, bearing a similar relationship to the disease in this situation as they do to cancer of the tongue. They are also commonly associated with a labial carcinoma, and it is absolutely necessary that they should be freely excised, for recurrence will certainly take place where such patches are situated. This important fact was impressed on my mind some years ago when doing the incomplete operation generally advised. I had removed the growth with a margin of healthy tissue from one labium, and at the operation I observed a white patch of about the size of a sixpence situated on the opposite labium. This was not removed, and 12 months later the patient returned with a cancerous growth which had appeared in the situation occupied by the leucoplakial patch.

Cancer of the vulva is essentially a disease of elderly women from 55 years of age onwards. When it attacks the labia there is frequently a history of pruritus which has existed for months or even two or three years. The skin of the vulva is white, sodden like the hands of a washerwoman, and numerous cracks or fissures are distributed over its surface. The pruritus continues, is aggravated by scratching, and later a cancerous growth makes its appearance. This sodden skin constitutes the precancerous stage, and when recognised in elderly women should be treated by free excision.[1] Well-marked leucoplakia is seen in younger women in association with syphilitic elephantiasis, and here, too, complete excision is indicated.

A further argument in favour of a more thorough excision is the frequency with which contact infection is observed in the labia, so that when one labium is affected it is not sufficient to do a limited operation, for the surface with which the growth has been in contact on the opposite side may have already been infected.

In every case, however early the disease, the vulva should be completely excised and the glands and fat removed from both inguinal regions. The operation is commenced by removing the inguinal glands. For this purpose an incision is made parallel with Poupart's ligament from the anterior superior iliac spine into the labium (see Fig. 1, B). Poupart's

FIG. 1.

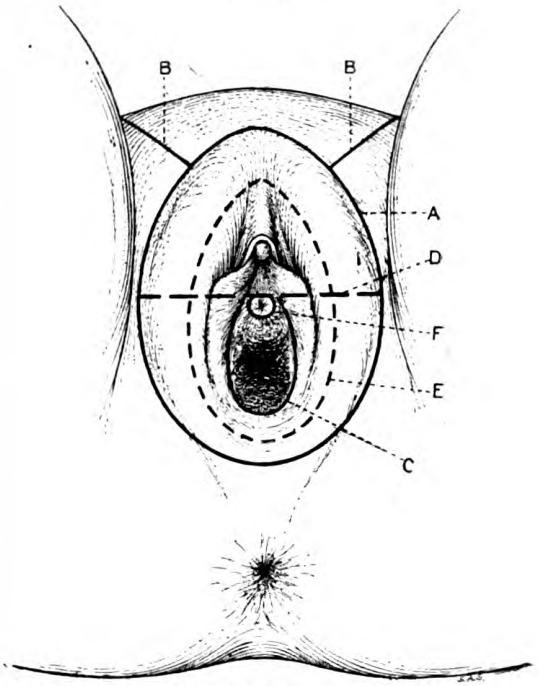


Diagram to illustrate the lines of incision described in the text. A, Incision employed for the removal of the vulva. B, Incision for the removal of the inguinal glands. C, Incision around the vulvar inlet. D, Incision required when the vulva is removed in two portions. E, Incision required for the treatment of severe pruritus. F, Incision around the urethral orifice.

ligament is defined and the glands and fat removed in one piece. Special care is taken to remove the fat and lymphatics at the inner part of the incision (B, Fig. 1). It is necessary to excise the gland in the saphenous opening, and may be others of the vertical set of glands. The gland in the saphenous opening, although it belongs to the vertical chain of glands, is frequently infected with cancer. The gland in the crural canal should also be removed, care being taken not to injure the femoral vessels.

In advanced cases the glands along the iliac vessels are involved in the disease and they can be removed after careful separation of the peritoneum by an incision corresponding to the middle third of Poupart's ligament made through the abdominal wall. Unfortunately, many of the patients are very old and not infrequently suffer from chronic bronchitis, and for these reasons do not stand an operation unduly prolonged. If, however, the patient's condition will stand it the iliac glands should certainly be removed. All hæmorrhage should be carefully arrested, and before stitching the skin all dead spaces should be obliterated by catgut sutures. The skin is then accurately sutured and a dressing applied.

It is sometimes stated that if the inguinal glands are not felt to be enlarged it is not necessary to remove them. If the inguinal glands are *not* enlarged there is greater reason for removing them, for it may indicate early implication and a better prognosis. If the inguinal glands are enlarged to any extent the iliac glands will also be involved and the

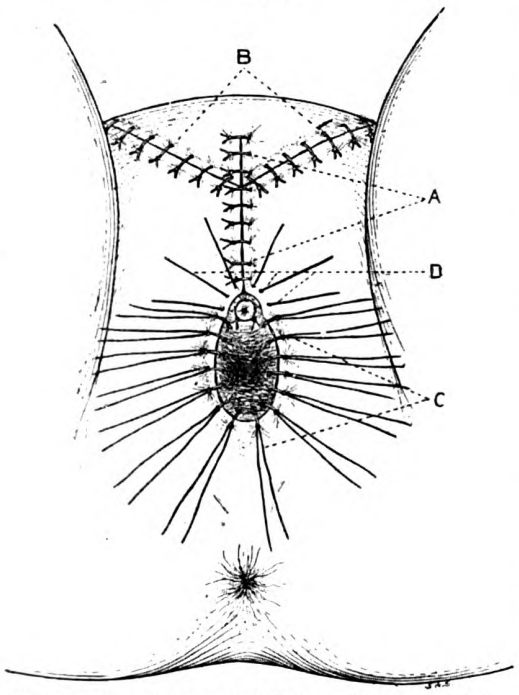
[1] Clinical Journal, Polyclinic Journal, Nov. 15th, 1905, p. 78.

prognosis is bad. I have removed inguinal glands no bigger than a pea which showed under the microscope well-marked cancerous invasion. Moreover, there is considerable difficulty in palpating the inguinal glands when the patient is fat, and many women who suffer from vulvar cancer have a tendency to obesity. *Inability to palpate the inguinal glands is no reason for neglecting to remove them, nor is it a reason for concluding that they are not invaded by the disease.*

When the inguinal glands and fat have been excised on both sides the patient is placed in the lithotomy position and the excision of the vulva is commenced. With a scalpel a curved incision is made on either side from the mons veneris downwards and outwards, terminating at a point midway between the anus and the vulvar inlet (Fig. 1, A). These incisions must be carried well beyond the labia majora. The incisions are deepened by snipping with the scissors, and the bleeding points are caught with Spencer Wells forceps. If the incisions are not made *into the labia* the vascular bulb is not cut into and therefore the amount of bleeding is lessened; a result which is aided by using scissors instead of a knife. Indeed, the amount of hæmorrhage during the whole operation should be comparatively trifling.

All the structures are removed down to the triangular ligament and the clitoris is divided. At this stage it is well to make a circular incision around the urethral orifice (Fig. 1, F) so as to define its position should the cancer be close to the urethral orifice, or a transverse incision may be made above the level of the meatus (Fig. 1, D) when the cancer involves the clitoris, and the vulva is then removed in two portions. In this way the urethra can be seen and avoided, and it is not necessary to pass a sound into the bladder as a guide. During all the manipulations the cancer should be covered with iodoform gauze and the two cut edges of the vulva grasped with a vulsellum to minimise the risk of cancer infection.

FIG. 2.



Illustrates the appearance when the operation is completed. A, Skin incision united. B, Incisions for removing the inguinal glands. C, Silkworm-gut sutures tied and left long to facilitate subsequent removal. D, Mattress sutures of catgut for fixing the meatus. They are represented untied.

After the structures have been freed all round a circular incision made around the vaginal orifice completes the excision (Fig 1, C). The bleeding points are now tied, and in so doing a needle armed with catgut is of service owing to the tendency there is for the vessels to retract in certain situations. Where the clitoris has been divided the hæmorrhage is best arrested by the passage of a mattress suture to embrace the divided vessels. All bleeding having been completely arrested, the edges of the incisions are now united by silkworm-gut sutures.

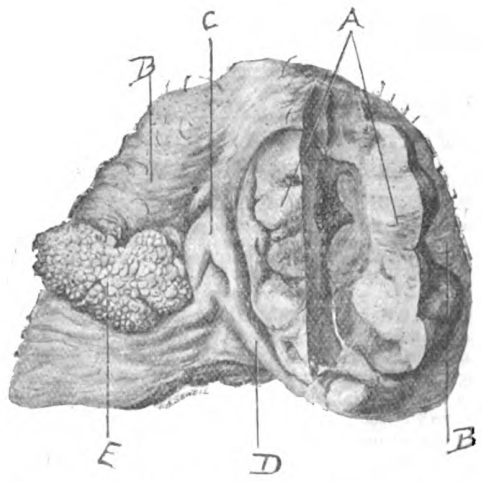
The urethra is fixed in position by lateral mattress sutures of catgut which pass through the sides of the urethra close to the meatus, and a median suture passing through the superior wall (Fig. 2, D). These sutures prevent the urethra falling downwards and tend to maintain the normal forward curve. Where it is found necessary to excise a portion of the urethra the cut end should be divided longitudinally and transversely and the four segments united to the skin edges with catgut.

The silkworm-gut sutures around the vaginal orifice should be left long as there is a tendency for the line of incision in this situation to be retracted towards the vagina, and the long threads facilitate removal. There should be no tension on the sutures if the skin edges have been judiciously undercut.

The wound is dressed with iodoform gauze, wool, and a T bandage. The inguinal wounds are redressed and a double spica domette bandage carefully applied.

I have now performed this operation ten times. In eight of the cases the cancer originated in the labium and two in the clitoris. All were microscopically squamous carcinomata. The healing was rapid and in no case was the use of the catheter subsequently required, the patients being encouraged to pass urine naturally.

FIG. 3.



A, Growth in left labium majus. It has been divided in the centre and the two halves pulled asunder to show how it is penetrating into the subjacent tissues. Note also the ulcerated surface. B, The skin of the mons veneris and labia majora. C, The clitoris. D, The left labium minus. E, The papilloma.

The routine employment of a more extensive operation in the treatment of this disease will, I feel sure, lead to much better results in the future. No operation should be considered sufficient which does not include the removal of the entire vulva and the glands and fat in both groins. The earlier such an operation is employed the better will be the after-results.

To excise the thickened white sodden skin associated with pruritus it is not necessary to cut so widely, but every portion so affected should be removed, otherwise the pruritus will not be cured and cancer may subsequently develop on the thickened areas left behind. When the region of the clitoris is involved this organ should also be removed.

This operation will be found a most valuable remedy for cases of intractable pruritus, and in elderly women in whom the peculiar changes in the skin have already occurred it may be the means of preventing the development of carcinoma. What I desire to advocate here must not be confounded with what is known as the Marion Sims operation, in which a very limited amount of tissue is removed around the vulvar inlet and which is recommended for cases of pruritus. In my operation a complete excision of all the sodden skin, including the clitoris if involved, is

done, so that every trace of disease is removed. The hæmorrhage is carefully arrested, and the wound edges then united with silkworm-gut sutures.

I believe this operation to be of great value, and if done more frequently would prevent the subsequent development of carcinoma. The great frequency with which long-continued pruritus antedates the development of vulvar carcinoma seems to have been overlooked, and when it occurs in an elderly woman prompt and radical treatment is required.

Fig. 3 represents the anterior portions of the labia majora with the clitoris and adjoining parts of the labia minora. The left labium majus is the seat of an extensive ulcerating carcinomatous growth which has invaded the entire thickness of the corium as far as the subjacent fat. Histologically the growth is a squamous-celled carcinoma, the cell columns of which show typical cell nests and central keratinisation. On the opposite labium majus there is a second growth about one inch in diameter which overlaps its base of attachment and presents an intact papillary surface beneath which the corium is uninvaded. Microscopically it is a papilloma. The specimen is preserved in the Museum of the Royal College of Surgeons of England (4690 c). The parts were excised by me from a woman, aged 69 years, who for six months had noticed a growth on the labium, from which there was a slight blood-stained discharge. She had previously suffered from pruritus, and the skin of the vulva presented a thickened whitish appearance. The patient could not say which of the two growths appeared first. With the vulva the glands in both groins were excised.

Wimpole-street, W.

THE VALUE OF VACCINATION AND REVACCINATION.

BY F. M. SANDWITH, M.D. DURH., F.R.C.P. LOND.,
GRESHAM PROFESSOR OF PHYSIC.

FOR more than a hundred years we have known how to prevent small-pox, a repulsive disease of great antiquity, which used to be a common scourge, and at the end of the eighteenth century was the cause of 1817 deaths every year in London alone.

Nearly twenty years elapsed between the time when Edward Jenner began to ponder over the connexion between vaccinia and variola and the day when he announced to an incredulous world "that the cow-pox protects the human constitution from the infection of small-pox." Like Bacon, Harvey, Newton, and Darwin, he preferred to delay the publication of a new truth for which he felt the world was hardly prepared. Before his famous *Inquiry* was published in 1798, Jenner travelled from Berkeley to London in order to exhibit the cow-pox to his professional brethren and prove to them that an individual who had been accidentally or purposely inoculated with vaccinia was rendered immune to subsequent inoculations of variola. We can imagine the cruel disappointment of the country practitioner when, at the end of three months, he was obliged to return home without having persuaded a single individual to be vaccinated! The medical profession was temporarily blind, while the public clung to the conservative belief that it was better to be inoculated with small-pox, with its preliminary horrors of bleeding, purging, and starving, than to test a novel method of prevention. The tide of opinion, however, shortly turned, and vaccine was carried to so many foreign countries that within ten years of its introduction upwards of 20,000,000 people were vaccinated, with the result of an immense reduction of the death-rate from small-pox. Yet in England, and especially in London, the opposition continued inexplicably. Hideous prints and scurrilous newspapers were published, and in 1807, when Parliament awarded Jenner a second grant of £10,000, a popular leader sent a messenger to his lodgings to advise him "immediately to quit London, for there is no knowing what an enraged populace may do."

Times have changed, but we still have amongst us an energetic body of antivaccinators, some of whom might be the lineal descendants of those who could not see that Jenner was a benefactor to mankind. The trend of modern legislation has invariably been to grant concessions to these agitators, and the Vaccination Act of 1907, which came into force on the first day of 1908, has been associated with an increase in the percentage of exemptions of children, in whose case a statutory declaration has been obtained. The figures for 1907, which are the latest published, show that only 70·9 per cent. of children born in England and Wales were vaccinated, a considerable reduction from 74·9, which was the average of the preceding five years. The percentage of children born who were exempted under certificates of conscientious objection has been increased from 4·8 in 1905 to 5·8 in 1906 and 8·4 in 1907, while it is believed that the figures for 1908 will show a further increase.

We must face the fact that we have among us an increasing number of persons who are susceptible to small-pox in consequence of the neglect of vaccination, and that the only other factor necessary to produce an epidemic is the introduction of the disease. We are unable to prophesy when the next outbreak will occur, but, as regards London, we can guess that, if history repeats itself, the day is not far distant when crowds of frightened people will be clamouring for revaccination, as they did when small-pox was last prevalent in 1902. The latest report of the Metropolitan Asylums Board tells us that during the 38 years of the existence of that Board 72,691 small-pox patients have been admitted to its hospitals, but statistics show that, whereas during the first 15 years of the Board's life London was visited by small-pox every third or fourth year, during the last 23 years these outbreaks have only occurred every seventh or eighth year. Moreover, it is satisfactory to know that for the third year in succession not a single death from small-pox has occurred in London. Besides a diminution of the visitation of variola there seems to have been a feebler intensity of the virus of late years in this country.

During 1908 small-pox occurred in 13 towns in England and Wales, the greatest number of cases being reported from Liverpool and Southampton, and in nearly every instance the infection appears to have been introduced from foreign countries. Six cases were notified from London and several in other towns during the first quarter of 1909. At Bristol a limited but somewhat severe outbreak occurred, causing 35 cases and 9 deaths, while in the neighbouring districts there were 22 additional cases with 3 deaths. The infection was introduced from abroad and was spread to some extent by the non-recognition of early cases until warning notices had been issued to local practitioners. Every year that small-pox becomes more rare there must be an increasing number of young medical men who have no real working knowledge of the disease, and in some recent outbreaks there has been a greater tendency than usual to confuse cases of mild small-pox with chicken-pox. On the other hand, in 1908 six persons in London certified to have small-pox were found on examination by an expert to be suffering from chicken-pox. The more unusual the disease, the more errors in diagnosis must occur. The failure to recognise a hæmorrhagic case at Bristol led to the second introduction of small-pox into a general hospital. The sanitary methods of fighting this Bristol outbreak may be taken as typical of what ought to be done under similar circumstances. All known contacts were immediately vaccinated or revaccinated, each patient being thus promptly surrounded by a circle of protected friends and relatives; all neighbours willing to undergo protection were revaccinated; every suspected case was at once isolated; contacts were traced and watched so effectually that 16,396 visits were paid to 1354 persons. If we cannot obtain complete protection by vaccination and necessary revaccination, we must perforce be content, directly a case of small-pox is discovered, with the intelligent coöperation of the sanitary authority and the board of guardians. The duty of the former is to isolate the sick and to supervise contacts, while the latter should at once vaccinate all known contacts and as many others in the district as are unprotected. The Bristol board of guardians refused to provide special facilities for vaccination, and furnished an additional argument for the transference of vaccination work from the control of the guardians to that of the sanitary authority, as recommended by the Poor law Commission. However, the necessary vaccination in Bristol was secured in spite of the unwillingness of the guardians to take special measures.

The comparative mildness of recent outbreaks in the United Kingdom is no guarantee that future epidemics will not be severe, though this is one of the points which antivaccinators fail to understand. Neither are they convinced by the

accumulated evidence of the immunity of efficiently revaccinated doctors and nurses in small-pox hospitals, facts which cannot too often be repeated to the public, not forgetting the exceptions to this immunity provided by nurses or other employees who have declined or evaded revaccination. Any fair-minded person should appreciate the lesson furnished by the nursing staff in 1892–93 at Leicester, where disbelief in vaccination is rampant. Among 40 nurses six refused to be vaccinated; one of these six caught small-pox and died from it, while four others contracted the disease and recovered. The sixth disbeliever, who escaped infection, was the matron, whose relations with the small-pox patients were of a less intimate character than those of the nurses.

One of the latest pieces of evidence of the immunity furnished by revaccination has been brought to my notice by Professor Osler.[1] At the end of October, 1898, the 2nd United States Volunteers were sent to occupy a district in the north of Cuba, which was said to be devastated by small-pox. The men were carefully revaccinated, and it was found on their arrival that the epidemic had been progressing since March and that there were some 4000 cases of small-pox, occasioning 30 deaths a day. By vaccinating 30,000 inhabitants in two months the small-pox mortality was reduced from 29·5 to 9·6 per cent., and the Americans then had the pleasure of burning the isolation hospitals which were no longer needed. Not a single case of small-pox occurred in the Volunteers, though the men were constantly exposed to a most malignant type of the disease, and served for six months in the district. Previously to the arrival of this regiment only 5·6 per cent. of the Cubans had been vaccinated, but it is worth mentioning that none of these died and their cases were all discrete.

Let me very briefly recapitulate the facts which prove the value of vaccination.

1. There has been a marked fall in the mortality from small-pox in all countries dating from the time of introduction of vaccination.

2. The vaccinated suffer much less from small-pox than the unvaccinated. Medical men, for instance, have a well-proved immunity, though in scarlet fever, against which doctors have no special protection, the statistics show that 59 per 1,000,000 die, as against 16 per 1,000,000, of the general population.

3. The age-incidence of small-pox is quite different since the introduction of vaccination. Formerly most children took it, and in Gloucester, where 85 per cent. of the children were unvaccinated, 64 per cent. of the patients in the small-pox epidemic of 1898 were children under ten years of age. To-day, where infantile vaccination is thoroughly carried out, most of the patients are adults; for instance, in Glasgow in 1900 only 5·5 per cent. of 1730 small-pox cases were under the age of ten, and of these children two-thirds had never been vaccinated.

4. The vaccinated, even if not efficiently protected by revaccination, have a much lower death-rate when attacked by small-pox than the unvaccinated. In the London epidemic of 1900–01, 9659 cases were treated in the small-pox hospitals of the Metropolitan Asylums Board, and of these 11·5 per cent. of the vaccinated and 33·1 per cent. of the unvaccinated died.

5. Systematic successful revaccination protects from small-pox. The German Government in 1874 made vaccination obligatory during the first year of life and revaccination at puberty. Since 1875 there have been no epidemics of small-pox in Germany, and the disease there is almost extinct. It is frequently introduced by foreigners, particularly on the Russian and Austrian frontiers, but it can find no resting place. In Prussia, where the population has been steadily increasing from 35 to 38 millions, the small-pox deaths for six years have varied from 10 to 41, being an average of considerably less than 1 per 1,000,000. This figure compares well with the year 1872, when 2700 Prussians per 1,000,000 died from small-pox.

6. In many small-pox hospitals it has been necessary to keep healthy children for weeks in the wards whilst their mothers underwent the disease; the children remained healthy, and were protected by one thing only—prompt vaccination.

There are several points connected with the question of vaccination which I venture to think are not always remembered. Jenner hazarded the guess that vaccinia was small-pox modified by passing through the cow, but for many years after his death no one could explain how the immunity was acquired. Proof has recently been obtained that monkeys can be infected with both vaccinia and variola, and that in them the diseases run much the same course as in man.

In Dr. S. Monckton Copeman's experiments human small-pox material was first tested on calves, but always with negative results. But inoculation of this material on monkeys invariably proved successful, and when, after one or more passages through monkeys, calves were again inoculated, an effect was produced which, after one or more removes in that animal, could not be distinguished from typical vaccinia. From the vesicles of these calves children were vaccinated, and every one of these vaccinations passed through its course normally. The importance of these experiments consists in the fact that they gave us scientific confirmation, to an extent previously unattained, of the definite relationship of cow-pox to small-pox. The mystery has yielded to investigation, and we may now agree that vaccinia is small-pox which has lost its virulence and its infectious character. Jenner's labours have helped to make the present generation understand the idea of immunity from specific diseases and the methods of procuring temporary immunity by introducing into the body a weakened or altered form of the virus producing the disease. Small-pox no longer stands alone as the one disease which we can prevent by vaccination, for, to mention human diseases only, we have acquired means of preventing, under certain circumstances, hydrophobia, plague, cholera, and typhoid fever.

Jenner before his death was forced to the conclusion that vaccination did not protect an individual from small-pox for the whole of his life, and we now know that the operation must be repeated at intervals in order to ensure the highest degree of protection which vaccination can give. Is the value of revaccination, say at puberty, sufficiently brought before the public by the profession? At how many schools in this country is it systematically carried out? Have we, the legitimate advisers of the public, not become somewhat supine and allowed our opponents to capture too many strongholds?

The Government Lymph Establishment at Colindale-avenue, N.W., supplies the army and all public vaccinators with excellent calf lymph, glycerinated, bacteriologically examined, and so prepared as to make it impossible to convey any other disease; but this lymph is, unfortunately, not available for the private practitioner. During the year ending March, 1909, the number of tubes of lymph despatched was 499,820, each tube containing sufficient lymph for one vaccination. Reports from 446,492 cases show 99·3 per cent. case success and 95·9 per cent. insertion success. The year's lymph was derived from 320 calves, all of which were examined after death and certified to be healthy. Four other calves, which seemed healthy during the course of their vaccination, proved at the necropsy to exhibit evidence of tubercle; none of the lymph from these four calves was issued.

In Germany there are said to be 22 State laboratories for the preparation of glycerinated calf lymph. It is regrettable that in Great Britain there is but one. The private practitioner can procure reliable lymph from at least two well-known institutes in London as well as from other vendors, none of whom, however, are under Government control, so that he has, for the most part, no guarantee as to the age and quality of the lymph, or as to its source of origin.

Is the operation of vaccination always performed under strict aseptic precautions? What instructions are given to the mother about the after-care of the vaccinated arm? Public vaccinators, whose work is inspected by the Government, and who receive a money grant in proportion to their success, strap a pad of wool, with or without a sprinkling of boracic powder, to the child's arm and forbid any interference with the arm for a week. Others, who are content to use no precautions, or to tie a dressing to the arm which the mother can remove at will, would be horrified to see the septic tricks which are sometimes played at home with the sore arm, and in such cases it is wonderful that abscess and erysipelas do not more often occur. Again, the public vaccinator inserts lymph into at least four places, and naturally complains that some of his colleagues, to please the friends, make only one or two insertions. Judging by

[1] Small-pox as Found and Treated in Cuba during the Spanish-American War, Pennsylvania Department of Health, August 9th, 1909.

analogy, we should expect that one insertion might be sufficient, but we know from the statistics of many small-pox hospitals that the highest protection is afforded by a total area of marks of not less than one-half of a square inch. The public vaccinator further complains that his unofficial colleagues sometimes give a certificate as successful vaccination when there is only one spot of doubtful value. If such a patient eventually contracts small-pox this obviously throws discredit on the value of vaccination.

I feel constrained to mention these criticisms because, with the present facilities for obtaining pure calf lymph, I do not see why the Registrar-General should have to report every year a few deaths from "cow-pox and other effects of vaccination." Lastly, we may agree with antivaccinationists that general hygiene, including prevention of overcrowding, prompt diagnosis and isolation, disinfection, and watchful care of contacts, are all valuable auxiliaries in the fight; but, in the words of Milton—

> "What boots it at one gate to make defence,
> And at another to let in the foe?"

Cavendish-square, W.

A FATAL CASE OF ANÆMIA IN WHICH THE WIDAL REACTION WAS OBTAINED.

BY PERCY GULLY, M.R.C.S. ENG., L.R.C.P. LOND.

A CASE of pernicious anæmia complicated by enteric has probably never been recorded. This may have been such a case, and it is as well that it should not go unnoticed.

The patient, an unmarried girl, aged 22 years, had been healthy and of good colour until the present illness. She had always been subject to slight menorrhagia, which, however, had never affected her health and had been no worse latterly. She had never had typhoid fever or any symptoms pointing to it. Measles had been her only illness. The patient thought that her illness dated from about August 20th, 1909, when she began to notice dyspnœa on exertion. She consulted her medical attendant on August 28th. He found her a little paler than usual and there was a hæmic bruit. She was put on iron and arsenic, given suitable directions, and seen again on Sept. 10th. She was no better, but a careful examination revealed nothing further. Her temperature was normal. There was nothing at this time to suggest to the medical man in attendance, a very able and experienced physician, that this was the commencement of a serious and fatal illness. On the 20th she left home for a change of air and came under my care for the first time on the 28th. From the time she left home she became rapidly worse, weaker, paler, and more breathless, and was compelled to take to her bed on the 29th. She did not improve, and four days later I was asked to see her. For about a month before this she had been slightly constipated. There had been no wasting. She thought she had had slight occipital headache about a week ago (? Sept. 21st). The headache had lasted only one day. The patient menstruated at the usual time early in September. She had had no abdominal pain, vomiting, diarrhœa, melæna, cough, rigors, or sweating—in fact, no symptom beyond what has been recorded. The following notes of the patient's condition were made on Sept. 28th:—"Deadly waxen pallor, suggesting pernicious anæmia. Rather inclined to be stout. Face full, not in the least drawn or cachectic. Pleasant expression. Talks cheerfully, but is breathless. She lies on her back. Pupils equal and moderately contracted. Skin dry. She has no pain. Pulse 120, low tension; temperature 100·5° F.; respirations 26 when quiet, but alarming dyspnœa on least exertion. No restlessness. Very healthy condition of teeth and gums. Tongue pallid but not furred. No enlarged lymphatic glands. *Heart:* Diffuse impulse in nipple line fifth space. Systolic bruit all over cardiac area. Most marked at second left space. Is carried from apex into axilla. Heard below scapula. Carotids throbbing. No obvious increase in cardiac dulness. *Lungs:* Nothing to be noted about lungs and pleura except feebleness of respiratory murmur all over chest. *Abdomen:* No distension or rose spots. Abdomen moves well. No sign of free fluid in peritoneum. No pain or tenderness on deep pressure. No enlargement of liver or spleen is evident. No mass or resistance in pelvis or elsewhere. In fact, abdominal examination quite negative. Rectal examination not made at this time, but subsequently a thorough examination gave negative result. Urine: S.G. 1020, alkaline, amber-coloured, no sugar or albumin. No diminution in quantity has been noticed." The condition of the patient remained about the same during the 29th and 30th. The period commenced on Oct. 1st (a few days before expected). There was slight epistaxis on this day. The period lasted four days and there was slight menorrhagia during second and third days. Menstruation almost ceased on the fourth day. On Oct. 3rd the patient complained of slight blurring of vision of the left eye. On the 4th she had blurring of vision in the right eye, but the left eye was almost well. The pupils were equal and not dilated. The right pupil was dilated and the fundus was examined. Recent retinal hæmorrhages were seen. The fundus was very pale. Widal's test was negative. A blood count gave red cells 1,500,000, hæmoglobin 25 per cent., and colour index 0·83. Films showed slight poikilocytosis; no nucleated red cells and no obvious leucocytosis. On the 5th, 6th, 7th, and 8th there were troublesome vomiting and nausea. The temperature was of remittent type. The patient obviously was in a desperate condition. Syncope and dyspnœa intervened on the least exertion. The constipation was easily relieved by enemata. The patient's expression was becoming anxious and she refused a great deal of the fluid food offered her. On the 7th she looked like a corpse. There was a peculiar odour about the bed—a cadaveric odour. During the last three days of her illness the pulse-rate was between 130 and 140, and the respirations ranged from 30 to 40. On the 8th the medical attendant already referred to and myself examined the blood and the result was somewhat remarkable, giving red cells 572,000 per cubic millimetre, hæmoglobin 14 per cent., and a colour index normal or slightly above it. Films showed few poikilocytes and no obvious leucocytosis. Nucleated red cells were not seen in the two films examined. This examination was done 18 hours before death, and while doing it I took another specimen for a Widal test—quite as an after-thought. The result (not known until after the patient's death) *gave a positive reaction in dilutions of 1 in 30 and 1 in 50 within one hour.* This dilution and this time would make the reaction a very certain one. On the morning of the 9th the patient died after a night of delirium, alternating with intervals of complete consciousness. No post-mortem examination was made, but a thorough bimanual examination of the abdomen and pelvis revealed nothing to suggest internal hæmorrhage.

I may say that her own medical attendant was astonished at the pallor of his patient on Oct. 8th, just a month from the time he last saw her. He believed her case to be one of the severer anæmias, and he did not alter his diagnosis when I told him of the positive Widal reaction—a reaction in such a dilution and in such a time as to make it almost a certainty that the patient giving it was suffering or had suffered from enteric fever. I must say that I agree with him, but typhoid fever may have come in as a complication. Oral sepsis was absent, and this plus the fact that no nucleated red cells were seen in the two or three films examined are the only points against acute pernicious anæmia, complicated, it may be, with enteric fever in an early stage. The colour index had risen between the counts of Oct. 4th and 8th. It is reasonable to suppose that a further rise might have occurred. A blood count so extraordinarily low as 572,000 recalls the fact that Osler's series of 18 cases, in which the blood was examined on the day of death, all exhibited less than 700,000 red cells per cubic millimetre. My count was made 18 hours before death, and, so far as I know, in no condition other than pernicious anæmia is such a diminution of red cells observed.

Is it possible that some cases of the severer anæmias possess a blood serum abnormally charged with the substances which cause Eberth's bacilli to agglutinate? Although I put this forward as a mere possibility, it does seem worth while to test the agglutinating power in similar cases. An exceptionally high agglutinating power would be *additionally* suggestive of an intestinal origin to these fatal cases, and might give some hint as to the nature of the organism causing pernicious anæmia. It will be observed that the whole of the illness only occupied seven weeks. Osler relates a case which was fatal on the tenth day.

I am aware of the deficiencies in these notes from the pathologist's point of view. Notwithstanding this, I feel that such a remarkable case ought not to go unrecorded.

The case was treated as one of pernicious anæmia with a restricted diet in view of the possibility of enteric being a complication.

Shanklin.

ON THE USE OF PITUITARY EXTRACT IN OBSTETRICS AND GYNÆCOLOGY.[1]

BY S. JERVOIS AARONS, M.D., C.M. EDIN., M.R.C.P. LOND.,

GYNÆCOLOGIST TO ST. ANTHONY'S HOSPITAL, NORTH CHEAM.

THE briefest possible mention of the anatomy, physiological properties, pharmacology and therapeutic action of the pituitary gland and its extract will be useful to introduce my subject.

Anatomy.—The pituitary gland consists of three parts—the anterior lobe, the pars intermedia, and the posterior lobe. The anterior lobe (hypophysis) is the larger and is made up of cubical or polygonal epithelial cells; in structure it is rather like the fœtal thyroid (Blair Bell[2]). Disease of this part of the pituitary gland is associated with the condition known as acromegaly. The pars intermedia lies between the anterior and posterior lobes and is developed in connexion with the anterior lobe. The posterior lobe is connected with the floor of the third ventricle, from which it is developed by the neck or infundibulum. In man both neck and body are solid, with traces of a cavity in the neck.

Physiology.—In the earlier days of medicine physicians held the idea that the function of the pituitary gland was to secrete nasal mucus, and from this belief the gland derived its name (pituita = mucus or phlegm). It was shown that removal of the gland in its entirety in animals produced great depression, increasing muscular weakness, dyspnœa, progressive emaciation, and finally death. Removal of the anterior lobe leads to genital infantilism. The pituitary gland generally hypertrophies after removal of the thyroid and suprarenal glands, and after castration. Insufficiency of the pituitary gland is associated with muscular weakness, wasting, and modification of the skeletal structure. Excessive secretion of the pituitary gland is followed by high arterial tension, polyuria, glycosuria, and acromegaly.

Pharmacology.—In 1894, Schäfer and Oliver[3] discovered that the extract made from the whole pituitary gland, when injected intravenously, caused a marked rise in blood pressure akin to, but not so powerful as, that caused by the extract of suprarenal gland, which they first discovered. Later, Howell[4] showed that this rise of blood pressure was produced only by an extract of the posterior and infundibular portion of the gland, and this observation was subsequently confirmed by Schäfer and Vincent.[5] The rise of blood pressure is due to a general vaso-constriction, the beat of the heart being, as a rule, slower. Schäfer and Magnus[6] observed that the extract of the posterior and infundibular portions of the gland caused marked diuresis. It was found by H. H. Dale[7] that uterine contractions were produced by intravenous injections of an extract of the gland; later, Blair Bell and Hick[8] described more fully the action of pituitary extract on the uterus and were the first to point out its effect upon intestinal muscle. It may be said that the extract of the posterior lobe and infundibular portions of the pituitary gland is a general stimulant of plain muscle, the organs which appear specially affected being the arteries, spleen, and uterus. The active principle diffuses slowly through animal membrane. It is less active than the suprarenal extract in producing local anæmia. It is absorbed slowly from the stomach and is destroyed by pancreatic digestion. It should therefore be administered by intramuscular or intravenous injection.

Therapeutics.—The first to use pituitary extract clinically was F. Golla.[9] A patient suffering from advanced Addison's disease was given a subcutaneous injection from which a marked rise of blood pressure and diuresis resulted, the latter continuing for 24 hours. Delille[10] tried the extract in such various conditions as typhoid fever, tuberculosis, Graves's disease, and paralysis agitans, as a result of which experience he recommended it in those conditions when it is considered desirable to raise the blood pressure, lessen the rate of the pulse, produce diuresis, and exert a stimulating effect on nutrition. To Blair Bell, however, belongs the chief credit of having systematically used the pituitary extract clinically. He, after numerous experiments on animals in conjunction with Hick, gave it a thorough trial in cases of shock, uterine atony, and intestinal paresis. The value of the extract in shock had been previously pointed out by Lockhart Mummery and Symes,[11] but only experimentally, because they were deterred from using it clinically owing to the powerful action of the extract and uncertainty as to the uniformity of its preparation at the time.[12] In June, 1909, through the courtesy of Messrs. Burroughs, Wellcome, and Co., who supplied me with a quantity of the extract, I was enabled to give the drug a thorough trial. The extract of the infundibular body of the pituitary gland is put up and placed on the market by Messrs. Burroughs, Wellcome, and Co. in hermetically sealed glass flasks which they have issued under the name of "Vaporole," each vaporole containing 1 c.c. of sterile extract equivalent to 0·2 gramme of fresh posterior lobe and infundibular portion of the pituitary gland. As the activity of the preparation is not destroyed by boiling, each flask and its contents are sterilised in this manner. The stability of the pituitary extract has been proved by comparing a sample a year old with a fresh preparation, and the effects produced by the two samples were equal within the limits of experimental error. The contents of each vaporole constitute the ordinary dose for an adult, whilst for children the dose should be proportionately diminished. An extract of the infundibular portion of the pituitary gland is also put up by Parke, Davis, and Co., under the name of "Pituitrin" in ampoules containing 0·5 c.c.

When it is necessary to give a second dose it should be remembered that such will not produce more than a small fraction of its proper effect unless some time has elapsed since the previous dose was given. It is important to note that infundibular extract, like other powerful pressor substances, has been shown experimentally to produce arterial degeneration if administration is long continued. (I shall refer to this again.) The extract is essentially a remedy for emergencies and is only to be used in a routine method with the greatest possible caution. I append here a short note of some of the cases in which I have used the pituitary extract. I have applied it in 70 cases altogether, but, as many of these were of a similar nature, for the sake of brevity they are not all particularised. For the purpose of contrasting this preparation with that of ergot and its allies—namely, ernutin, tyramin, &c.—I have used the pituitary extract in a number of cases of normal labour and have found that the uterus contracts better and more quickly and that the contraction remains for a longer period than when ergot or the other preparations have been employed. I have never used it, nor do I think it should be used, until after the completion of the third stage of labour, with the possible exception of certain cases of placenta prævia. The only drawback at present to its general use is on the score of expense, but it is within the bounds of possibility that the active principle of the infundibular portion may be synthesised by chemists, when the cost will be materially reduced.

CASE 1.—A woman, aged 27 years. Secundipara. Her first parturition was an interesting one. The child weighed 12¾ pounds. There was marked deficiency of liquor amnii. The head was in the right occipito-posterior position and could not be rotated, being delivered in this position with forceps. The placenta and membranes were adherent and had to be removed manually. There was smart post-partum hæmorrhage which was checked by an intra-uterine douche of water at a temperature of 120° F., an intramuscular injection of ergotin, and by kneading the

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[1] A paper read at the Fifth International Congress of Obstetrics and Gynæcology held in St. Petersburg, September, 1910.

[2] W. Blair Bell: Brit. Med. Jour., Dec. 4th, 1909, p. 1609.

[3] G. Oliver and E. A. Schäfer: Journal of Physiology, vols. xv., xvii., and xviii., 1894-95.

[4] W. H. Howell: Journal of Experimental Medicine, vol. iii., p. 254, 1898.

[5] E. A. Schäfer and Swale Vincent: Journal of Physiology, vol. xxv., p. 1, 1899-1900.

[6] E. A. Schäfer and R. Magnus: Ibid., vol. xxvii., p. 9, 1901.

[7] H. H. Dale: Ibid., vol. xxxiv., No. 3, 1906.

[8] W. Blair Bell and P. Hick: Brit. Med. Jour., February, March, and December, 1909.

[9] F. Golla: THE LANCET, Feb. 15th, 1902, p. 442.

[10] Delille: L'Hypophyse et la Médication Hypophysaire. Published by G. Steinheil, Paris.

[11] Lockhart Mummery and Symes: Brit. Med. Jour., Sept. 19th, 1908, p. 786.

[12] Since the above paper was written an interesting article by Mr. George Rowell, senior anæsthetist at Guy's Hospital, has appeared in which he gives his experience with pituitary extract in the treatment of shock. Brit. Med. Jour., Sept. 17th, 1910, p. 757.

uterus. Her second labour was induced at the thirty-eighth week owing to the large size of the fœtal head, which was in the right occipito-posterior position, but was easily rotated. Delivery was accomplished normally, but the placenta had to be expressed by Credé's method. There was some post-partum hæmorrhage, but not so severe as in the first labour, which was controlled in the same manner as in the first confinement. The third labour was normal as far as position and delivery of the child was concerned, but again the placenta had to be expressed, immediately after which there was a smart rush of blood. An intramuscular injection of the pituitary extract was given and the bleeding ceased at once, while the uterus was firmly contracted and remained so for over three hours.

CASE 2.—A woman, aged 38 years. Secundipara. This case was one of placenta prævia; the bleeding commenced at the fourth month, but was checked by rest in bed, opiates, and neutral cotarnine phthalate. It recommenced at the fifth month and continued intermittently until five and a half months, when there was a smart hæmorrhage. The membranes were ruptured, version was performed, and a leg brought down, the fœtus being expelled naturally three hours later, the placenta being adherent and having to be removed manually, which procedure was accompanied by profuse hæmorrhage. An intra-uterine douche of weak perchloride of mercury was given at a temperature of 120° F., and pituitary extract was injected deeply into the buttock, after which there was no further loss and the uterus remained well contracted.

CASE 3.—A woman, aged 36 years. Secundipara. Labour was precipitate, the second stage consisting apparently of only a couple of pains; the child was born before my arrival, the nurse informing me that it was literally shot out, and the placenta followed in half an hour, by which time I was with the patient. There was considerable hæmorrhage; pituitary extract was injected deeply into the buttock and the bleeding ceased at once, the uterus contracting firmly.

CASE 4.—A woman, aged 32 years. A primagravida. Labour was uneventful, but after the expulsion of the placenta the uterus was relaxed and flabby, though no bleeding occurred. An intramuscular injection of pituitary extract was given, when the uterus immediately contracted and remained so.

CASE 5.—A woman, aged 37 years. A large multilocular ovarian cystoma, with a twisted pedicle and numerous adhesions, was removed without rupturing the tumour, but the adhesions were difficult to separate and caused some delay. At the completion of the operation, which lasted nearly an hour, the patient was in a state of shock, the pulse being small and compressible. Rectal injections of normal saline solution and an intramuscular injection of pituitary extract were given, the effect being instantaneous, and the pulse immediately became full and the tension high. On the second day there was a good deal of abdominal distension, and as no flatus had been passed a rectal injection of turpentine was given, the rectal tube being passed later but without result. As her condition now gave rise to some anxiety and the patient was restless and complained a great deal of pain, an intramuscular injection of pituitary extract was given, and in 15 minutes large quantities of flatus were passed. From this time on she made a rapid and satisfactory recovery.

CASE 6.—A woman, aged 28 years. This was a case of subinvolution of the uterus, the patient suffering from menorrhagia, for which she had recently been curetted but with no satisfactory result. Her uterus was enlarged (the cavity measuring 5 inches) and flabby, her tissues generally were soft and flabby (she might be termed "of the heavy lethargic blonde type"), and her blood pressure was low. I decided to try what effect repeated doses of pituitary extract might have, and accordingly gave her an intramuscular injection of this drug, taking her blood pressure at intervals, giving in all six injections spread over as many weeks. I was justified in my expectations, for her uterus contracted down, the cavity of that organ when measured by the sound being found to be 3 inches, while her general condition was much improved, for, in her own words, she "had not felt so well for many years," and after the lapse of six months her condition is still quite satisfactory. Incidentally, I might add that during the administration of the pituitary extract she had marked polyuria.

In recording this case I must refer to my remarks concerning the routine use of pituitary extract. I still think that this drug is one for emergency cases, but the low blood pressure and general flabby condition of this patient warranted, in my opinion, a trial of pituitary extract. In this particular case there have been no deleterious effects whatever, such as arterial degeneration. These cases, however, are few and far between, but should one of a similar nature present itself to me I should be inclined to repeat the experiment. I can find no recorded instance of the employment of this drug in subinvolution of the uterus, and only suggest its use in this condition provided that the subinvolution is associated with a low blood pressure.

CASE 7.—A woman, aged 24 years. This was a case of secondary hæmorrhage following an operation for perineorrhaphy. I was called in consultation by the medical man who had performed the operation the previous afternoon. The nurse was apparently an incapable woman who had not noticed that the patient was bleeding, and it was not until the following morning when the doctor paid his visit that the condition was recognised. He immediately sent for me, and when I arrived the patient was blanched and pulseless, she was sighing and throwing her arms about, but when I examined her I could see no signs of bleeding. The wound had broken down slightly but the bleeding had ceased, and as her condition was grave in the extreme I gave her an injection of pituitary extract and a large submammary injection of normal saline solution. The wound was plugged tightly with gauze steeped in adrenalin solution, a firm bandage applied, and continuous injections of normal saline solution were ordered to be given by the bowel. In less than 20 minutes after the injection of the pituitary extract the pulse was perceptible at the wrist, and in an hour it was quite distinctly beating at the rate of 120 per minute. I ordered another dose of pituitary extract to be given in an hour's time, and next morning her pulse was still 120 beats to the minute but full and of good tension. The pituitary extract was repeated twice that day and saline injections were continued. The patient made ultimately a good recovery, and I am convinced that she owed her life to the use of the pituitary extract.

CASE 8.—A woman, aged 23 years. Primipara. Her first labour was terminated by forceps owing to a tedious second stage. The child in the present labour also had to be delivered with forceps owing to inefficient pains; there was smart post-partum hæmorrhage caused by an atonic uterus, but this was quickly checked by an injection of pituitary extract deep into the buttock.

CASE 9.—A woman, aged 37 years. This was a case of a large multilocular ovarian cystoma weighing 10 pounds. There was no difficulty in the operation, the cyst being removed intact, but the patient developed intestinal paresis and retention of urine; the latter was relieved by catheterisation, but the former, which was causing acute discomfort, was not relieved until after the injection of pituitary extract; 20 minutes later a large quantity of flatus was passed, which gave the patient much relief. She was up on the tenth day, and left the nursing home at the end of the second week.

CASE 10.—A woman, aged 22 years. This patient had an ectopic gestation at about the third month, the operation presenting no difficulty beyond some adhesions of the sac to the bowel which took a little time to separate. There was a considerable amount of intestinal paresis on the third day, which yielded promptly to an injection of pituitary extract.

CASE 11.—A woman, aged 32 years. This was a case of abortion, the removal of the ovum being accompanied by the most alarming hæmorrhage which it has been my lot to see. The ovum was removed in its entirety, but the hæmorrhage still continued and douches of water at a temperature of 120° F. failed to check it; the uterus was firmly packed with gauze and an injection of pituitary extract was given, after which the patient was put back to bed very collapsed and in a state of profound shock. Next morning, on removing the gauze plug, the hæmorrhage recommenced, but was checked by another injection of the same drug. Later there was considerable abdominal distension accompanied by great pain, and a third injection of pituitary extract was given which resulted in the passage of large quantities of flatus with considerable relief to the patient. I have never seen a case of abortion accompanied by such a tremendous loss of blood as this patient suffered, or one which gave rise to so much anxiety. Her convalescence, although prolonged, was ultimately complete.

Of the other cases in which I have used this preparation I do not propose to speak, as some were normal confinements and the others were cases similar to those I have already mentioned. In order to economise time I have condensed the notes of the cases reported above to the narrowest limits, but I think that I have mentioned a sufficient number to warrant my laying before the notice of this important assembly so valuable a drug as pituitary extract as an addition to our armamentarium in the treatment of hæmorrhage, intestinal paresis, and shock.

Harley-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

PROTRUSION OF THE URINARY BLADDER INTO THE INGUINAL CANAL.

BY A. H. GIFFORD, M.R.C.S. ENG., L.R.C.P. LOND.,
LATE HOUSE SURGEON, ROYAL SURREY COUNTY HOSPITAL, GUILDFORD.

AN interesting condition, and one of some import, is that of protrusion of the urinary bladder through the anterior abdominal wall in the inguinal region. I have recently met with two such cases. In both instances the patients were sent into hospital for radical cure of inguinal hernia.

The first case was that of a child 5 years of age. The "rupture" was on the left side in the inguinal region, and had only been noticed for five months or thereabouts. No swelling was present when the patient stood upright, even after he had been on his feet for some time. Both testicles were in the scrotum. There was a scar on the right side resulting from an operation for a cure of a "rupture" when a baby. On coughing there was a protrusion on the left side of a swelling of the size of a date in the lower half of the inguinal canal, but which immediately disappeared; repeated coughing did not increase the size of the swelling. On inverting the scrotum by the finger and introducing it into the inguinal canal no evident rupture was felt, and the external abdominal ring was not large.

On Nov. 1st, 1909, an operation was performed with a view of curing an inguinal hernia; it was found, however, that no hernial sac was present, but there was a weakening of the abdominal wall external to the conjoined tendon, and a protrusion of a thick-walled sac, which on investigation proved to be the urinary bladder. The very thin fibres covering the protruding mass were divided in the direction of

the fibres—viz., parallel to Poupart's ligament, and the weakness remedied by stitching together the inner and stronger fibres of the external and internal oblique muscles to Poupart's ligament above the cord.

The second case was that of a man aged 33 years. The rupture was said to have been produced three weeks previously by straining. As in the previous case there was a swelling at the lower part of the inguinal canal only on coughing, but which immediately disappeared, and which was not present except during the act of coughing. The swelling was on the left side and was of about the size of a chestnut.

An operation was performed on Feb. 4th, 1910, but no hernial sac was found; it was noticed, however, that there was some bulging of the posterior wall of the inguinal canal, and on turning the cord outwards there was revealed an area external to the conjoined tendon and above Poupart's ligament, where the muscular support was entirely wanting, and through which protruded a thick-walled viscus, which proved to be the bladder. The repair of the wall was accomplished by stitching the conjoined tendon and internal oblique to Poupart's ligament beneath the cord, and the external oblique to Poupart's ligament above the cord as in the ordinary operation for radical cure of an inguinal hernia.

In both cases the bladder was uncovered by peritoneum.

I am indebted to Dr. W. B. De Jersey and to Mr. A. H. Brodribb for permission to publish these cases, which I hope may be of interest.

Bassett-road, W.

NOTES ON A CASE OF PAROXYSMAL TACHYCARDIA.

BY J. A. DRAKE, M.B. LOND., M.R.C.S. ENG.

THE patient was a healthy looking, well-developed male, aged 29 years. When I was called to see him he was complaining of "palpitation," slight difficulty in breathing, and moderate pain in the chest, behind and to the left of the upper part of the sternum. His appearance was normal except for very slight cyanosis, his respirations were somewhat embarrassed (24 per minute), and he had some difficulty in drawing a long breath. He said that he felt quite well except for slight difficulty in breathing and moderate disinclination for food. The pulse was very rapid (200 and more), regular, but small and perceptible only with difficulty. There were no cerebral symptoms, the extremities were warm, and the capillary circulation there quite normal. An examination of the chest showed the apex beat to be in its usual position internal to the nipple and visible as very rapid pulsation. There was no increase of cardiac dulness. The rate of the heart was about 200 beats per minute; there were no murmurs; the first and second sounds followed each other with no apparent interval, and had a somewhat flapping character. There were no signs in the lungs and the urine was normal. The symptoms persisted for nearly 24 hours and then suddenly stopped.

The first attack occurred when the patient was 14 or 15 years of age, coming on when he was sitting down at school. No reason could be assigned for the onset. Since then he has had on an average two attacks a year, more or less. The tachycardia is sometimes brought on by a sudden shock, such as slipping while walking; sometimes apparently it stops for the same reason. Usually, however, no reason can be given either for its onset or cessation. The patient says that before the attack ceases he becomes conscious of an increasing pain behind the sternum, and that soon afterwards the symptoms disappear, and the heart-rate suddenly returns to normal.

The duration of the present attack was by far the longest of any; he attributes this to the fact that he went to bed and stayed there instead of keeping about as is his usual custom. When seen on the following day he appeared perfectly well except for a furred tongue. The pulse was 80, strong, and regular. His only other illnesses have been malaria when abroad and appendicitis. He is not an excessive drinker or smoker. No other members of the family suffer from the same symptoms, neither is there any history of epilepsy or any neurosis.

Treatment in the present instance consisted of strong doses of sal volatile and spirit of chloroform slowly sipped, given with the idea of exciting a reflex action on the heart *viâ* the gastric nerves, and later painting the region of the vagus in the neck with the liquor iodi fortis. The attack stopped shortly after the latter treatment, so possibly it may have had some effect. A subsequent attack appears to have been cut short by the sipping of hot, strong coffee.

Tenby.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

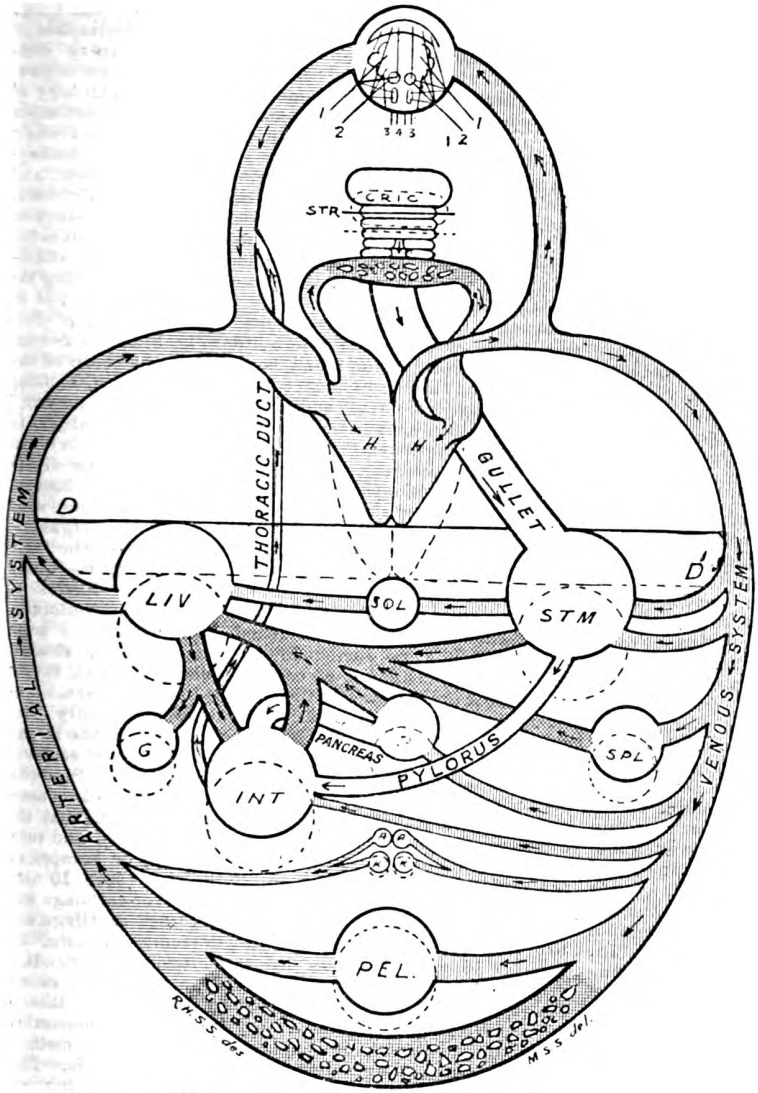
LARYNGOLOGICAL SECTION.

Epidiascope Demonstration, illustrating the Topographical Anatomy of the Rigid Resistances of the Larynx and Adjacent Parts.—Exhibition of Cases and Specimens.

A MEETING of this section was held on Dec. 2nd, Dr. P. WATSON WILLIAMS, the President, being in the chair.

Dr. R. H. SCANES SPICER gave an epidiascope demonstration of lantern slides illustrating the Topographical Anatomy of the Rigid Resistances of the Larynx and Adjacent Parts, bearing on the subject of the sites of initiation and maximum development of cancer of the larynx. A statement on the agenda paper ran as follows: "The object of this demonstration is to present some of the evidence available for the conclusion that the sites (*a*) of initiation, (*b*) of maximum development of laryngeal cancer are determined by the mechanical interaction of the rigid resistances of the laryngeal endo-skeleton on the one hand and certain cell constituents (e.g., epithelial and fibrous) of the soft tissues (e.g., mucous membranes) on the other. The larynx, from the ease with which it can be inspected, is peculiarly advantageous for the clinical study of the origin of internal cancer. It has the disadvantage that laryngeal cancer is comparatively rare. In both these respects a marked contrast appears between the larynx and the stomach. According to the American mortality returns, in every hundred cancer deaths 43 are stomach to 1 larynx, while in the English in every hundred cancer deaths 21 are stomach to 1·8 larynx (Roger Williams). In the seventieth annual report of the Registrar-General for England and Wales the total number of deaths from larynx cancer per year (seven years average) is only 313. Again, Sir Felix Semon's series of 246 cases took him over 30 years to collect at the rate of 8 per annum. As but few cases, then, are likely to be seen by any individual laryngologist at a sufficiently early stage to be watched throughout so as to test inductively the suggested causal relationship, it is the collective observation of many specialists directed to the point at issue that is required. This should soon confirm or disprove the alleged connexion. Deductive reasoning on the observations actually made will be, however, pre-eminently necessary since the real origin is but seldom on the *free* surface of the mucous membrane, as seen in the laryngoscope, but somewhere on its *deep* surface, and perhaps in a hidden laryngeal recess. If in an animal with an endo-skeleton—i.e., a vertebrate—certain muscular actions are, from any cause, habitually exaggerated, the corresponding rigid resistances and soft tissues are reciprocally influenced in such a way as to cause undue stress, strain, or friction of those soft tissues—i.e., to produce a chronic, intrinsic, mechanical irritation of the latter. The result is, under certain conditions of nutrition, warmth, moisture, senescence, obsolescence, &c., to stimulate an excessive and disorderly growth of the epithelial, endothelial, or connective-tissue cells entering into their structure. The association of local irritations of extrinsic and palpable origin, such as the pressure of a clay pipe, rough tooth-plate, smoking, paraffin soot, betel-chewing, Kangri stoves, and injury, with the starting of cancer is widely accepted. The 'sharp tooth' irritation cause of cancer forms a natural transition to the view now put forward that hitherto unsuspected intrinsic irritations are even more frequent and potent causes of the initiation of cancer, and this is not only in the larynx but throughout the body. The sites of preference for the commencement of cancer, whether in the gullet, stomach, intestinal flexures, rectum, breast, skin, uterus, &c., are found to be those sites at which the resultant of excessive mechanical forces chronically impinge or act, and where,

FIG. 1.



Schema to illustrate a theory of the determining cause of cancer in man.

FIG. 2.

Enlarged Detail.

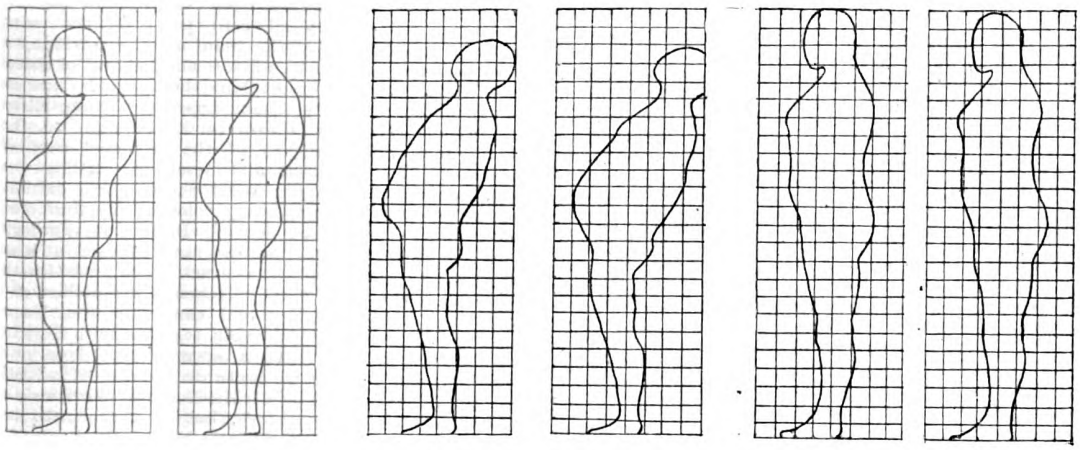
= Cerebrum.
{ } = Cerebellum.
OO = Postural Centre
OO = Respiratory Centre.

1	=	Postural receptors.
2	=	Respiratory receptors.
3	=	Postural effectors.
4	=	Respiratory effectors.
CRIC	=	Cricoid.
STR	=	Sternum.
H	=	Heart.
LIV	=	Liver.
SOL	=	Abd. sympathetic.
STM	=	Stomach.
G	=	Gall-bladder.
P	=	Pancreas.
SPL	=	Spleen.
A	=	Adrenals
K	=	Kidneys
PEL	=	Pelvic area.
INT	=	Intestine.
D	=	Diaphragm.

Channels whose patency and efficiency are interfered with by abdominal respiration are indicated by arrows. Longitudinal lines show arterial, and transverse lines show venous, circulation, their decussation indicating the lymphatics. The portal circulation is shown reticulated.

D D. Position at end of thoracic inspiration.
D' D'. Position at end of abdominal inspiration.

FIG. 3.



Shows normal and faulty erect postures.

normally, there is no provision for escaping the consequences of such excess. This is seen if the springy joints, elastic lungs, and contractile muscles, which are little liable to primary cancer, are compared with such areas as the region of cricoid excursion, the œsophageal gastric junction and the rectum opposite the coccyx, where various rigid resistances and soft tissues undergo relative changes of stress and position with reference to each other with often excessive force. The chief muscular mechanisms concerned in producing undue tissue stress, strain, and friction are believed to be (1) the motor mechanism for maintaining equilibrium in posture, (2) that for respiration, and (3) that for digestion; but important factors arise in the relative displacements and mutual pressures of the internal moveable organs constrained in part by mesenteries and ligaments, and also from the artificial compression of the trunk by corsets. Faulty postures and mode of breathing in man, whether from habits, occupation, imitation, intestinal derangements, or other causes, bring about persistent portal congestion, intestinal stasis, and general autotoxæmia. This is especially seen in marked types of belly-breathing, in which *habitual inspiratory descent* of the diaphragm takes place, with *no* expansion of the base of the thorax by the muscular mechanism of respiration. Such abnormal muscular action of the diaphragm tends to produce, simultaneously but independently, two things: (1) abnormal increase of intrinsic mechanical strains and irritation, causing cell overgrowth at sites of impact or restraint—e.g., the inspiratory pulling down of the cricoid; and (2) through relatively lessened thoracic suction chronic portal congestion occurs, leading to intestinal autotoxæmia, general blood cachexia, and hence wasting of the tissues at large. The central nervous system, through the deep afferents and viscero-muscular reflexes, endeavours to coördinate the motor mechanisms so as to minimise undue strain and to adjust the deranged thoracic and abdominal functions, but under the influence of the chronic autotoxæmia, or perhaps from the emotional depression of sorrow, grief, or worry, sooner or later the higher coördinating centres strike work and the mechanical and portal derangements run further riot. In this way the biological syndrome of cancer in the working of the human machine is believed to arise. The power wasted in undue stress, strain, and friction appears to be converted into the energy of those unknown complicated chemical and physical constructive processes concerned in cell growth and multiplication—a marked contrast to those destructive results of similar forces on the material substance of a non-living machine in causing wear and tear." Dr. Scanes Spicer said: "Some may think I am premature in bringing this subject forward yet, but, at all events, I have not been precipitate. As evidence thereof, in debate and in the *British Medical Journal* in 1889,[1] I was upholding the rôle played by the movements of breathing, swallowing, speaking, and generally of injuries from irritation and pressure during functional movement in the production of disease in the larynx; while at intervals ever since I have persistently urged the need for physical training, for erect posture, breathing, thorough expansion of the chest, and special education for the re-acquirement of lost coördinations. My first slide (Fig. 1) is a schema or plan to indicate diagrammatically the centrifugal expansile action of the diaphragm in thoracic inspiration and the centripetal descending action of the same in abdominal inspiration. In Fig. 2 the top part of the schema is shown in larger form. Abdominal breathing produces with every breath: 1. Excessive pulling down of the thorax and the thoracic viscera generally, including the trachea, gullet, cricoid, and sternum, and therefore increased stress, strain, and friction of displaced, stretched, and compressed parts, causing persistent rhythmic mechanical irritation at points of attachment of soft parts, or where these latter are compressed by rigid resistances of the endo-skeleton. 2. (*a*) Displacement, compression, and derangement of the abdominal viscera; (*b*) lessened thoracic suction on the in-breath as compared with thoracic breathing; and (*c*) loss of the normal influence of the expiratory contraction of the abdominal wall in emptying the portal area and promoting the general circulation. Thus are produced simultaneously irritation about the larynx, throat, and gullet (and elsewhere as indicated), and likewise concurrently a blood cachexia. In general terms, I suggest that cancer is the manifestation of a specific biological conjunction, pathological syndrome, or symptom-complex of deranged processes in the working of the body, which processes are: (1) neoplasia from chronic irritation of either extrinsic or intrinsic origin; and (2) a faulty constitutional state or blood cachexia, produced as above. The influence of stress, strain, and friction in the etiology of disease is too well known and accepted to demand illustration here. I am therefore introducing no new factor into etiology or pathology. The novelty of my suggestion is the conception of how the influence of such chronic stress, strain, and friction can arise intrinsically, and can act as such a chronic intrinsic irritation as to cause neoplasia; while in conjunction with this the same deranged bodily working which causes the abnormal stress, strain, and friction brings about simultaneously a chronic constitutional cachexia by deranging the efficiency of the portal system. My interpretation is not in antagonism to any of the ascertained facts of cancer. It is supplementary to them. My next slide (Fig. 3) shows normal and faulty erect postures and how the transmission of the weight of the head and viscera to the ground differs, causing different degrees of stretch and compression about the larynx." Dr. Spicer then showed radiograms of the living subject in which different positions of the head and curves of the cervical spine vary the positions, compressions, and stretching of the larynx. He continued: "The series of coloured lantern slides of photographs of frozen sections which you have seen show clearly and quickly the relations of the rigid resistances—i.e., the bones and cartilages—to the soft tissues about the larynx, and how their conditions would be altered by the different postures and modes of breathing previously shown. If the cartilages are calcified, ankylosed, roughened, or thickened, such conditions must increase unduly the surrounding working stresses, strains, and frictions. These, if chronic and not too great, favour irritative neoplasia in addition to the irritation-factor provided by chronic and habitual exclusive inspiratory diaphragmatic descent. It is curious how cancer in the larynx appears to dog the steps of cartilage. The two best series of operated intrinsic laryngeal cancers are those of Sir Felix Semon and Mr. Butlin. These demonstrate the close association between cancer and cartilage in the fact that the cartilage was usually involved in the diseased mass, and such cartilage had to be removed (if removeable) or scraped at the radical operation. Thus, in Butlin's 13 cases 10 were stated to have cartilage involved; removal of cartilage was indicated in 7 and scraping in 2; in 1 case cartilage was bare: no note as to scraping: growth recurred *in situ*. In Semon's 10 cases cartilages had to be removed in 6. It is generally assumed that cancer spreads, attacks, and causes disease of the cartilage secondarily. I suggest that it is excessive stress, strain, or friction in connexion with the movement, resistance, and sometimes ossification of the cartilage that initiates the neoplasia. This latter subsequently takes its revenge by cutting off the blood-supply of its irritating tormentor. My theory affords a rational interpretation of the natural history of cancer of the larynx. It is in agreement with the age, sex, and site incidences, the left side predominance, the obscure commencement, the diffuse deep origin, the persistent hoarseness, the early vocal cord paralysis, the relative greater extent in the depths than on the surface, and finally the success of laryngo-fissure and removal of diseased parts. What other theory explains these facts? Numerous anatomical diagrams after Quain, Luschka, Killian, Elsberg, and others, especially drawn and coloured to bring out the form and relations of the laryngeal cartilages, particularly the cuneiform and sesamoid cartilages and the anterior and posterior vocal nodules, are exhibited, and a collection of published coloured illustrations of cancer of the larynx by leading British laryngologists. Though it is rare to publish diagrams of such at a sufficiently early stage to define the exact site of initiation there are a few such. Sir Morell Mackenzie's sketches of the earlier stages of the laryngeal cancer of the Emperor Frederick are on view, and, taken together with Gerhardt's description, point to either a sesamoid cartilage or the posterior vocal nodules as probably the site of initiation. Sir Felix Semon's diagram of Mr. Montagu Williams's case apparently opposes my theory, but on the growth being removed it was found to be attached at the back of the laryngeal ventricle about which the arytenoid plays in

[1] Brit. Med. Jour., Sept. 14th, 1889, p. 592.

functioning. At a later stage the relation of the bulk of a laryngeal cancer clustered over a subjacent cartilage is usually apparent and I show many instances."

Mr. HERBERT TILLEY showed an instrument which he had found useful in the Removal of the Nasal Spines in the operation of submucous resection of the septum.

Dr. H. J. DAVIS exhibited: 1. A case of Leprosy being treated with subcutaneous injections of Nastin B. 2. A Thyro-lingual Cyst and a patient who had recovered from Acute Sphenoidal Sinusitis after operation. 3. A boy, aged 7 years, who had suffered from Empyema of the Maxillary Antrum, thought by some members to be due to osteomyelitis of the upper jaw.

Mr. CHARLES A. PARKER showed an interesting Tonsillolith of very large size, successfully removed by traction with forceps.

Dr. ADOLPH BRONNER exhibited a Pedunculated Fibroma of Posterior Pillar of the Fauces.

Dr. W. H. KELSON showed a case of Lupus of the Larynx in a woman aged 36 years; treatment by cautery had been only partially successful, and Dr. Kelson proposed to try tuberculin and show the case again later.

Mr. J. GAY FRENCH showed a case of Stricture of the Lower End of the Œsophagus which he considered spasmodic. Some other members, however, were inclined to deny the existence of spasmodic stricture at all.

Mr. SOMERVILLE HASTINGS showed a case of early Myasthenia Gravis with laryngeal symptoms. The patient was unable to whistle or to close his eyes, but was improving.

Dr. E. A. PETERS exhibited cases showing very good results in which Singer's Nodules had been removed from the cords by means of the galvano-cautery.

Mr. CYRIL A. B. HORSFORD showed a case of Laryngeal Tuberculosis, apparently cured by amputation of the epiglottis and application of pure carbolic acid.

Dr. G. WILLIAM HILL exhibited a case of Carcinoma of the Œsophagus, in which very great improvement—? temporary cure—has been obtained by radium treatment. Also other cases of malignant disease.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.

A MEETING of this society was held in the Royal Infirmary, Edinburgh, on Dec. 14th, Dr. BYROM BRAMWELL, the President, being in the chair.

Dr. DAWSON TURNER exhibited: 1. A boy, aged 5 years, suffering from a Pigmented Nævus with Hairs of the Left Ocular Region. It had been visible at birth but had been growing. It measured 5 centimetres each way and was brownish-black in colour. It had been treated by the application of 13 milligrammes of radium for 10 hours (130 mg. hours) with great improvement. In places the colour had been washed completely away. As this method destroyed the hair follicles it was not a suitable means of treating angiomata of the scalp. 2. A woman, aged 25 years, who had a port-wine stain of congenital origin on the right cheek, temple, and neck. It measured 2 by 1¼ inches and had been treated with weak preparations of radium since January. Dr. Turner thought that strong preparations of radium were likely to produce permanent atrophy. It was a painless form of treatment.

Dr. F. GARDINER showed a case of Pityriasis Rubra Pilaris in a young boy. The eruption affected the face, arms, and legs on their exterior aspects and closely resembled psoriasis. The eruption had come on only three weeks ago after he had been playing football. This disease was thought to be a tuberculide, and in this case von Pirquet's reaction was slightly positive. Arsenic was usually contra-indicated in such cases, but in the present one great improvement had followed its use, while 2½ per cent. salicylic acid vaseline had been applied externally.

Dr. J. V. PATERSON showed: 1. A man, aged 48 years, suffering from Dystrophia Epithelialis Corneæ (Fuchs). He first had noticed a visual defect eight years ago. On the left cornea, rather below its centre, a patch of epithelium, roughened and œdematous or actually raised into small vesicles, was seen, and in the right cornea a similar but less marked appearance was noted. The sensibility of the corneæ was much impaired; the tension of the eyes was normal. The etiology was unknown. 2. A case of very advanced Arterio-sclerotic Changes in the Retinal Vessels of the Left Eye. The disease was extraordinarily pronounced, and the lower retinal arteries showed as silvery branching lines (silver wire vessels) empty of blood; a large area of the retina was thus rendered bloodless. Many small hæmorhages were scattered over the fundus.

Dr. EDWIN BRAMWELL showed a young man with Brown-Séquard's Paralysis due to a bullet wound. In the middle of August he was behind a hayrick at which his brother was firing with a Lee-Enfield rifle 90 yards distant. He felt a peculiar sensation in the back of his neck, with tingling down the back, but no pain; he then fell down, and was completely paralysed in all four extremities. In this condition he remained for some days, but then the left arm and leg began to improve. At present there was atrophic motor paralysis of the right triceps, hand muscles and extensors, and flexors of the fingers. The oculo-maxillary syndrome was present on the right side; there was paresis of the right leg, with ankle and knee clonus and Babinski's sign. There was loss of temperature and pain sensation on the left side below the fourth rib, with defect of sense of position and bone conduction of the right side. There had been a unilateral lesion of the spinal cord. The entrance wound was situated one inch to the right of the middle line at the level of the seventh cervical spine, and the exit wound at the level of the cricoid cartilage. The lesion affected the seventh and eighth cervical segments and the first dorsal on the right side, both motor and sensory nerves being affected.

Dr. NORMAN WALKER exhibited: 1. A case of Actinomycosis of the Neck and Lower Jaw in a man, aged 31 years, who worked among cattle and often chewed straw. The ray fungus was found at the first examination on Sept. 26th, but it had never been found since. The patient had been treated with potassium iodide, and this drug seemed to have destroyed the fungus. Great improvement had been noted since the man had received two doses of actinomycosis vaccine. 2. A vanman, aged 30 years, suffering from Multiple Sarcoma of the Skin. The disease was first noted eight weeks ago with a vague form of illness; then an attack of rheumatism was followed by one of pleurisy. The earliest lesion appeared on the face, and when the patient was first seen on Nov. 10th there were extensive lesions on the scalp, face, trunk, and limbs. The glands behind the sterno-mastoid and the epitrochlear glands were enlarged and hard. Nodules were present all over the forearms, and hæmorrhages were observed in parts of these; the blood appeared normal. These nodules were observed to have increased in size and number within one week. Under the action of potassium iodide the lesions had improved greatly on the arms, but the tumours on the back were increasing in size.

Dr. G. A. GIBSON showed: 1. Partial Acromegaly in a man aged 32 years. There was evidence of excessive growth of the cranial bones with enlargement of the sinuses, as well as of the facial bones; there was, however, no appearance of hypertrophy elsewhere. 2. A girl, aged 4 years, with a Patent Arterial Duct. She had been observed to become breathless on playing, but was otherwise in perfect health with no cyanosis. There was the pathognomonic thrill and murmur, which began in the middle of the ventricular systole and continued beyond the second sound, which latter was sometimes doubled. Such cases were by no means rare, and in Dr. Gibson's ward at the present time there was a young woman, aged 29 years, with a similar affection.

Professor Sir THOMAS R. FRASER showed cases of Beriberi illustrating the œdematous and the atrophic varieties. The œdematous variety showed the beneficial results of treatment and the atrophic variety the signs and symptoms of peripheral neuritis. The cases occurred in coolies from a ship which traded from Hong-Kong, &c., and this country. Eight Chinamen on board became affected, but none of the white people. On admission cases of the first variety were entirely bloated, the face, hands, feet, and abdomen being greatly distended with fluid. They soon began to improve, and at first passed 180–120 ounces of urine per diem until the fluid was entirely drained away from them. A remarkable fact was the very great distension of the heart, which underwent rapid contraction on the patients being put to bed. In the case of the atrophic variety, certain areas on the lower extremities were painful on pressure, and in these the deep

reflexes had gone; one case showed foot-drop with motor paralysis.

The PRESIDENT showed: 1. A case of Obscure Nervous Disease. It occurred in a dock labourer aged 29 years. Since the age of seven he had had a fœtid discharge from the ear, but he remained well in health until the age of 21, when he gradually developed difficulty in moving the right arm, right leg, left arm, left leg, facial muscles, and tongue, and had had three attacks of difficulty in swallowing. His family history was good. The present condition was that he was a big, robust-looking, tall man, unable to stand or walk, with a vacant expression; mentally he was bright, but unable to speak on account of spasm of the muscles of articulation; his palate was high; the tongue was very large and the point was always turned upwards. Scoliosis was present, and any voluntary movements were attended with spasmodic muscular contractions which passed off on attempting further movements. The muscles reacted briskly to faradism and galvanism, the contractions were not persistent and there was no polar change; the deep reflexes were absent; plantar flexion was present and the organic reflexes were unimpaired. The cerebro-spinal fluid was normal and the sensory functions were normal also. On shutting the eyes there was spasmodic contraction of the muscles which prevented him from opening them for some time. 2. A case of Myxœdema with Ascites. A cure followed tapping and the administration of thyroid extract. The disease occurred in a woman, aged 50 years, who had had typical myxœdema of six years' duration and which followed severe "floodings." Thyroid treatment caused great improvement, and she remained well for three years. With an attack of influenza this treatment was suspended, when the myxœdema redeveloped. On admission she weighed 15 stones 4 pounds, and the abdominal measurement was 48½ inches. Thyroid treatment was commenced and the abdomen was tapped, 400 ounces of yellowish-green fluid being withdrawn. The fluid has not reaccumulated, and the weight has been reduced to 10 stones 11½ pounds, with complete disappearance of the myxœdematous condition.

Professor F. M. CAIRD showed: 1. A Partial Gastrectomy for Carcinoma of the Stomach in a man aged 28 years. A year previously he had suffered from pain in the stomach with vomiting after eating, but medicines relieved him for some months. On recurrence he was admitted to the medical ward and treated for gastric affection. The free HCl was abundant. On operation a malignant degeneration of a peptic ulcer was found adherent to the pancreas. The diseased area was removed and found to be a columnar-celled carcinoma. The patient was now well. 2. A male, aged 55 years, after removal of half of the stomach, a portion of the liver, and 7 inches of the transverse colon for a Large Carcinoma of the Body of the Stomach. On admission a swelling of the size of a cocoanut was seen in the epigastrium. The operation lasted two and a half hours and the patient was transfused while on the table. He had made a good recovery.

Professor H. ALEXIS THOMSON showed: 1. A patient after removal of Impacted Stone from the lower end of each ureter. The patient, a man, aged 29 years, a miner, had had symptoms pointing to renal and ureteral stone for four years. The X rays showed two small shadows placed symmetrically at the level of the floor of the bladder. The stones were removed by the vesical route. 2. A boy, aged 12 years, previously shown to the society, who had had a Periosteal Sarcoma of the Right Humerus removed. Musculo-spiral paralysis supervened, but had been recovered from. The lower half of the humerus became the seat of further new growth, and was resected on Sept. 6th, a portion of the right fibula being inserted in its place. The first operation had been performed more than a year ago, and the case was encouraging, as all the other cases of a like nature which Professor Thomson had operated on had died within a year. He thought this method of resection was quite as satisfactory as amputation.

Mr. DAVID WALLACE showed: 1. A patient after Nephrectomy. The woman, aged 30 years, had been operated on on June 28th for acute suppurating appendicitis. In August she suffered from pain in the right lumbar region. No urinary symptoms developed until September, when she had rigors, and the urine became alkaline with much pus. On Oct. 19th cystoscopy showed a healthy bladder. A perinephric abscess was detected on Nov. 4th, and pointed in the ninth intercostal space; this was opened and showed Gram negative bacilli. On Nov. 29th nephrectomy was performed. 2. A woman, aged 36 years, who had complained of Difficulty in Swallowing for three months subsequent to some trouble with a fish-bone in her throat. Œsophagoscopy showed an annular stricture at the upper end of the œsophagus, and a portion removed and examined microscopically revealed squamous epithelioma. The operation consisted in making an incision along the anterior border of the left sterno-mastoid and excising the tumour. The upper end of the œsophagus was fixed to muscles and skin, and an œsophageal tube was introduced. There were no enlarged glands.

Mr. H. J. STILES showed: 1. A boy, aged 10 years, six months after operation for Congenital Hydronephrosis. He had had a fall four weeks before admission, and this was thought to have caused his symptoms. The abdomen had, however, been unduly large since birth. On admission the left iliac fossa was alone tympanitic; the urine contained a little albumin and red blood corpuscles. The cyst occupied the greater part of the abdomen, the apex beat being pushed up to the third left interspace. The cyst was excised extraperitoneally after having been tapped and 7½ pints of dark brown liquid with a urinous odour having been drawn off. The pedicle was very broad, and numerous large veins were present. The operation was done from the lumbar region, but Mr. Stiles found that the transperitoneal route was the most easy. 2. A patient, six weeks after Nephrectomy for Acute Infection of a Hydronephrotic Kidney. Three days before admission the man was suddenly seized with abdominal pain at the site of a former operation for appendectomy done 18 months previously. The abdomen was somewhat distended and tense, and the patient was admitted as a case of acute obstruction. The operation revealed no obstruction or adhesions, but an acutely inflamed hydronephrotic kidney which contained 10 to 12 ounces of sero-purulent fluid.

Mr. GEORGE L. CHIENE showed a patient after operation for Ruptured Ectopic Ovarian Gestation. She had complained of pain on the right side for three days previous to operation, but was suddenly seized with pain and collapse. She was sent to hospital as a probable case of acute appendicitis, but on examination the real cause was diagnosed. The menstrual history was misleading, as she had been absolutely regular, and expected her menstrual period within three days. The abdomen was full of fluid blood and clots, and the right ovary was ruptured, showing it to have been a true case of ovarian gestation.

Mr. J. W. STRUTHERS showed: 1. A case after Nephrectomy for Essential Hæmaturia. A woman, aged 35 years, with history of hæmaturia for two years, variable in amount but never completely absent. She was found to be bleeding from the left kidney only. This organ was exposed, slit open, but nothing was found. It was stitched up with through-and-through catgut sutures, and there has been a gradual cessation of hæmorrhage. 2. A lad after operation for Acute Obstruction due to a band, and also to tuberculosis of the termination of the ileum. The band was divided and a lateral anastomosis established between the ileum above the disease and the ascending colon, the diseased gut not being resected. The patient was now apparently well.

Mr. HENRY WADE showed: 1. A boy, aged 4½ years, three months after excision of the diaphysis of the ulna for Acute Infective Osteomyelitis. The operation was done 21 days after the onset of the disease, and primary union took place with complete osseous regeneration, massage and movement having been employed. 2. A boy, aged 4 years, one month after Nephropexy for Moveable Kidney. The child had gained a stone in weight and his intelligence had greatly improved.

Mr. D. P. D. WILKIE showed: 1. A male, aged 19 years, after operation for Perforated Duodenal Ulcer. He was very collapsed, and intravenous transfusion was done twice with no benefit. Oxygen gas was then led into the pouch of Douglas and allowed to bubble through the sero-pus there. Within three-quarters of an hour there was great improvement and the pulse became full and bounding. Oxygen was rapidly absorbed from the peritoneum and produced active intestinal peristalsis with well-marked leucocytosis. 2. A male, aged 36 years, after Implantation of the Omentum in the Abdominal Wall for Hepatic Cirrhosis with Ascites.

Mr. E. W. SCOTT CARMICHAEL exhibited: 1. A girl, aged 9 years, after operation for Tuberculous Disease of the Shaft of the Ulna and Tibia. Subperiosteal resection of the

diaphysis of both bones was done after Mr. Stiles's method. X ray photographs taken at two months' intervals showed the gradual growth of new diaphyses. 2. He demonstrated Oehsner's method of treating potential and acquired flat-foot by the application of oxide of zinc plaster strips.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Dec. 7th, Mr. W. Morley Willis, the President, being in the chair.—In opening a discussion on the Mortality of Appendicitis and How it can be Reduced, Mr. A. R. Anderson mentioned that during the last ten years there had been 973 operations for appendicitis performed at the Nottingham General Hospital with 89 deaths; of these 89 fatal cases in only one had pus been absent at the operation. While the number of operations at the hospital had yearly increased, the mortality had shown a yearly decrease. During the last 11 months there had been 138 operations with only seven deaths. This showed that the disease was now earlier recognised and the cases were sent up earlier for operation, with a corresponding increase in the safety of the operation. Ten years ago the routine treatment was first of all medical, and the surgeon was only called in to severe cases. Mr. Anderson then described what actually happens during an acute attack of appendicitis. Within 12 hours of the attack he had found the appendix crimson in colour and rigid and filled with muco-purulent fluid; a few hours later black and then greyish spots appeared in the wall of the organ, lymph became deposited on the neighbouring coils of intestines, and perforation might take place at any moment. The rapidity with which the symptoms might pass from bad to worse was amazing. Most operators had found pus present within 24 hours of the commencement of an attack. Defective drainage of the appendix, leading to stagnation of the contents and increase of the virulence of the organisms, was responsible for this rapid change of symptoms. The diagnosis might be confused with perforation of the intestinal canal elsewhere, but as a rule it was easy. Early operation, in his opinion, was the best and safest method of treatment. In cases, where from delay or otherwise an abscess had formed, the best treatment was to protect the peritoneal cavity with gauze and to empty the abscess and to find and remove the appendix. This latter point was still *sub judice*, but Mr. Anderson considered that it was wiser to remove the organ, as it had been known to lead to subsequent trouble if left. Septic general peritonitis accounted for 75 per cent. of the deaths from appendicitis. In these cases drains should be inserted in several positions and the patient kept propped up in bed and continous saline infusion administered. But the patients should not arrive at this serious condition, because they should be operated upon in the acute and early catarrhal stages. If this was done the mortality would immediately decrease.—Mr. R. G. Hogarth said that 80 per cent. of all cases of appendicitis, no matter what complications should arise, recover without operation. To reduce the mortality, the diagnosis and technique of the operation should be improved. He himself had mistaken for appendicitis cases of acute suppuration of the gall-bladder, parametritis, and tubal trouble in the left side. In children, too, the diagnosis was often difficult. Morphia was to be avoided and the pulse carefully watched. The "quiet interval," due to perforation of the appendix, was very dangerous, as it led to a feeling of false security.—Dr. C. H. Cattle said that many patients had safely got through three or four attacks of appendicitis. Where these attacks became so frequent as to incapacitate the patient, he advised operation. One never knew when a mild case would become serious, and therefore he advised operation if the symptoms did not improve after 24 hours.—Mr. K. Black advised operation where the symptoms persisted after 48 hours. Operations were free from mortality in the early cases; but it was so difficult for the surgeon to get hold of these cases. He had had the opportunity of watching 400 operations for acute appendicitis performed by various eminent surgeons at four large hospitals; and he observed that the mortality varied greatly with different surgeons. If the operation was properly performed in the early cases the mortality should be *nil*.—Dr. W. T. Rowe related a case of perforative appendicitis where the pulse did not rise above 72 per minute, but during the convalescence of the patient it was found that the normal pulse-rate was 56.—Mr. A. R. Tweedie did not advocate the removal of the appendix in cases of peri-appendicular abscess.—Mr. T. B. Gilbart-Smith gave morphia in those cases where the pain was acute and the signs were not clear.—The President recommended immediate and early operation where possible. In localised abscesses of several days' duration he preferred simply to drain the cavity and to leave the appendix alone. It was impossible to foretell whether a case would run a mild course or not, and he advised operation, leaving the responsibility of a refusal with the friends. In doubtful cases tenderness and rigidity were most important diagnostic signs.

OXFORD MEDICAL SOCIETY.—A meeting of this society was held in the Radcliffe Infirmary on Dec. 9th, Mr. R. H. A. Whitelocke, the President, being in the chair.—Mr. E. C. Bevers showed: 1. A woman, who for several years had suffered from a large Ventral Hernia, which had been cured by the implantation of a wire filigree. 2. A man, aged 60 years, whose large Irreducible Inguinal Hernia had been successfully treated by McGavin's double filigree operation. The method of inserting the filigrees in each case was demonstrated. Mr. Bevers advocated the use of a wire filigree in those cases of ventral hernia which were of large size and when the muscles had undergone such wide separation that to bring them together and overlap them would necessitate a severe operation, accompanied by shock and an undue increase in the intra-abdominal pressure. The final result in such cases without filigree was always doubtful. With a wire filigree a firm unyielding plaque was formed which could neither stretch nor bulge, and appeared to be the most rational method of closing a gap in the abdominal wall. In inguinal hernia the operation was indicated when the rings were large and the inguinal canal practically non-existent, due to atrophy of the muscles. The double filigree method would here give a good result, and, as McGavin stated, would bring all varieties of hernia within the reach of the surgeon.—Mr. A. P. Dodds-Parker showed a Tumour which he had removed from the abdomen of a woman. It consisted of a cyst the size of a large cocoanut firmly attached to the convex surface of the spleen. The spleen had to be removed with the tumour. Clinically the tumour had been freely moveable in the abdomen, but no certain diagnosis of its anatomical relations had been possible previous to the operation. The interior of the cyst contained a thickish jelly in which no evidence of its origin could be seen microscopically. Sections of the wall showed that it consisted of granulation tissue, and by none of the ordinary methods of examination was any evidence forthcoming that it was caused either by a parasite or by a bacterium.—Dr. A. S. GIBSON demonstrated a heart which showed Aortic, Mitral and Tricuspid Stenosis due to old-standing rheumatic lesions. The patient in the wards had shown the ordinary features of severe heart failure of the right side.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on Dec. 7th, Mr. E. Stanmore Bishop, the President, being in the chair.—Dr. C. P. Lapage read a paper on the Diagnosis and Treatment of Malnutrition in Infancy. The causes of malnutrition in infancy were enumerated and discussed, attention being called to general diseases not especially connected with the digestive system and to rarer conditions, such as mongolism and congenital heart disease. Tuberculosis, though not uncommon in infancy, must not be diagnosed without definite evidence, the von Pirquet skin reaction and the examination of the sputum being important. The treatment of the majority of the cases consisted of exact and scientific methods in infant feeding, the percentage method being most valuable if not carried to unnecessary elaboration. The value of lavage and gavage in suitable cases is very great, especially when there is a tendency to spasmodic contractions of the stomach. Infusion was another therapeutic measure which often had striking results, especially in those cases suffering from great loss of fluid. Tuberculosis and other general diseases should be suitably treated and the prognosis of tuberculosis in infancy was by no means hopeless.—Mr. A. A. Bradburne read a paper on the Early Diagnosis and Treatment of "Simple" Glaucoma. He laid emphasis on the importance of the disease and its early recognition. He discussed the effects of hypertension and described the symptoms which such gave rise to, pointing out that these two

combined to afford the most valuable evidence in the early stages. Mr. Bradburne referred to the difficulties associated with the treatment of these cases. He advocated a modification of the ordinary disfiguring operation of iridectomy in selected cases. The modification, he considered, lessened the reactionary leucocytic infiltration—which tended to block up the already inefficient excretory channels and ultimately to seal up the iridectomy wound; it also permitted early massage, the latter being necessary in that cases of "simple glaucoma" did not, as was the case with acute and chronic forms, possess the tendency to hypertension which would assist maintenance of the patency of the wound.

Reviews and Notices of Books.

A Manual of Operative Surgery. By Sir FREDERICK TREVES, Bart., G.C.V.O., C.B., LL D., F.R.C.S. Eng., Sergeant Surgeon to H.M. the King, Surgeon-in-Ordinary to H.R H. the Prince of Wales, Consulting Surgeon to the London Hospital; and JONATHAN HUTCHINSON, F.R.C.S. Eng., Surgeon to, and Lecturer of Surgery at, the London Hospital, formerly Examiner in Surgery, Royal Army Medical Department. Third edition. With new coloured plates and many new illustrations in the text. In two volumes. Vol. I., pp. 775; Vol. II., pp. 821. London: Cassell and Company, Limited. 1910. Price 36*s.* net.

THE chief characteristic of the earlier editions of Sir Frederick Treves's "Operative Surgery" was that the work was a faithful reflex of the personal opinions of its distinguished author, and an edition edited by another surgeon, must of necessity fail to preserve this special quality. But Mr. Jonathan Hutchinson occupies a position which fits him thoroughly for the revision of Sir Frederick Treves's work, for he also represents the teaching of the London Hospital, of which Sir Frederick Treves was an exponent. The second edition has been long out of print and we have before us now, not merely a reprint of the early issue with omissions supplied and redundancies removed, but what is to all intents and purposes a new book, retaining many of the virtues of the previous issues while conforming to modern progress.

The book commences with a chapter on general principles, in which is considered the condition of the patient as influencing the desirability of an operation. This is a matter which often does not receive the full attention it deserves. The attitude taken with regard to the costume of the operating surgeon is reasonable, inasmuch as there is not too much insistence upon unnecessary detail, while due regard is paid to asepsis. On the question of gloves the surgeon is the best judge of what should be done, and no general rule can be laid down as universally applicable. We find mentioned a fact which is too often forgotten—that at some important German clinics the use of rubber gloves has been abandoned in favour of cotton ones. The authors are a little sarcastic as to the great preparations made by some surgeons, and they tell us that they have heard of a surgeon who before driving to an operation always has his carriage wheels washed with ether and carbolic solution. The description of the operating theatre and its fittings is all that could be wished, and the account of the instruments contains numerous illustrations. In the description of ligature material and suture material we think attention should have been drawn to the fact that many surgeons never employ any other material than catgut for a ligature or suture that has not to be removed.

The importance nowadays of operations on the abdomen is shown by the fact that the surgery of the abdomen comes first and occupies practically the remainder of the first volume. A general description is given of abdominal section, and we find an account of the value of the Fowler position in cases of septic peritonitis, but we have been unable to discover any reference to the value of Murphy's method of irrigation of the rectum with saline solution. Great stress is laid on the counting of instruments, pads, and sponges used in abdominal operations; it is surely far safer not to put anything entirely within the abdominal cavity; every instrument placed within the abdomen can usually have attached to it tape or gauze which would remain outside the wound. Cases have been recorded in which foreign bodies have been left in the abdomen in spite of counting. We thoroughly agree with the authors when they say that the simplest and most efficacious measure in the treatment of flatulent distension is to turn the patient on one side for a time. Many surgeons do not seem to realise the great increase of comfort which a change of position gives to a patient after abdominal section, and we fail to see that any harm can accrue from it.

In speaking of the results of cholecystotomy, Kehr is quoted as having operated on 397 cases of gall-stone, and the source of the quotation is dated 1898. Kehr's operations are very much more numerous than that, for he has now got well beyond his thousandth case, and a more recent reference should have been given. Our opinion on the value of pyloroplasty fully agrees with that expressed in this volume, and that is that though the method is ingenious and theoretically should give a very definite enlargement of the opening, practically it fails. The authors tell us that for suture of the intestine Dupuytren's continuous suture takes less time than Lembert's and is equally efficacious, a view that will be generally taken. We are glad to see that in the account of inguinal colotomy the credit of introducing the operation into this country and of several improvements in the method of its performance is given to Mr. H. A. Reeves. A modified Bassini operation is recommended for the radical cure of inguinal hernia, and for the buried stitches kangaroo tendon is advised. We think that the authors have done well to include chapters on ovariotomy, hysterectomy, and ruptured perineum. We are glad to see that McGill receives the credit which is his due for devising the operation of suprapubic prostatectomy, and that to Freyer is rightly ascribed the advocacy of enucleation of the entire prostate in preference to any partial operation.

The second volume commences with the surgery of the head, and we may specially refer to a good description of the operation for removal of the Gasserian ganglion. It is surely unnecessary in a modern text-book of operative surgery even to mention the use of the ligature and of the écraseur in the removal of the tongue for malignant disease. We are indeed told, in the chapter on excision of the tongue, that these methods are now quite obsolete, but nowadays they do not even require mentioning. The operation recommended for removal of the tongue includes preliminary ligaturing of the lingual arteries and the dissection of the groups of lymphatic glands in the submaxillary region and those lying over the jugular vein; at the same time the tongue is removed. The division of the operation into two stages is considered to be unnecessary. The discussion on the choice of operation for removal of the tongue is extremely good. The surgery of the breast is well described, though perhaps a little briefly. The operations on vessels and amputations need no special comment. For disarticulation of the hip-joint the anterior racket incision is preferred, and the operations on bones and joints and on tendons conclude the work.

We are thoroughly impressed with the excellent character of the whole book. There are undoubtedly many points in which individual opinion would not coincide with the procedure advocated by the authors, but the views of the authors throughout the book are wise, temperate, and founded on great personal experience. It should be added that the coloured illustrations representing the anatomy

of various parts of the body are excellent. Most of these have been based on dissections in the Medical College of the London Hospital or at the Royal College of Surgeons of England, and we have never seen illustrations of this kind which surpass them.

Radio-Activity: A Brief Guide to its Use in General and Specialist Practice. By GUY STEPHEN, D.P.H. Lond.; Officier de Santé (France). London: Van Alexander and Co. 1910. Pp. 44. Price 1*s.*

THE author in his foreword states that he has merely endeavoured to compile a fair summary of what is at present known clinically and scientifically of a method of treatment still in the growing stage. It may be said at once that he has succeeded admirably in his object. The vast amount of literature dealing with radium-therapy already in existence—and by far the greater part of it is written in a foreign language—renders it difficult for a busy medical man seeking information on that subject to obtain precisely what he requires, save at the expenditure of much time and trouble. To such persons this little treatise may confidently appeal.

The author very wisely concerns himself but little with the chemistry and physics of radium; he formulates briefly and in the clearest possible manner the fundamental points which must be grasped by would-be workers with radium, and relies upon their supplementing this knowledge by reference to any of the large text-books on radio-activity should occasion arise. He describes the various forms of apparatus employed for the application of radium, and remarks that the use of radium salts loosely contained in a glass tube is now falling into abeyance, an opinion with which we are in complete accord, such a procedure being both unscientific and inaccurate and ill adapted to procure satisfactory results. For the measurement of the initial radio-activity he adopts the scale laid down by the French school, 1 centigramme of pure radium bromide evolving 2,000,000 units of radio-activity as compared with the 1 unit evolved by the same quantity of pure uranium oxide. He points out that in most instances when used therapeutically the pure radium salt is diluted in varying proportions with barium or some other inert element, and that thus by dilutions of 1 in 2, 1 in 4, or 1 in 10, initial radio-activities of 1,000,000, 500,000, or 200,000 are easily and correctly obtained.

In dealing with the radio-therapeutic principles he gives a short but sufficient account of the histological researches on radiumised tissues which have been carried out by Barcat and Dominici, and which showed that, speaking generally, the first effect of the radium rays was to cause stimulation of growth of the cells of normal tissues, but to produce a marked lessening of vitality of the neoplasic cells of tumours, which often proceeded to definite necrobiosis. This is the so-called "selective action" of radium as described by Wickham and Degrais. With increased dosage or prolonged application of radium the stimulative action of the rays on normal cells is converted into a destructive one; and it is mainly to the proper appreciation of these principles and the correct selection and combination of radium apparatus and filtering screens that all successful radium therapy is due. In dealing with the somewhat technical subject of filtration the author describes the differing powers of filtration possessed by sheets of aluminium and lead, varying from 4/100th millimetre to 2 millimetres in thickness, and points out that the thinnest of these suffices to cut off all alpha and most soft beta rays, whilst a screen of 5/10th millimetre of lead will stop all alpha and nearly all the beta rays, leaving only the "ultra penetrating" radiation of Dominici. With regard to radium reactions, he emphasises the fact that the application of radium is absolutely painless, even analgesic. We think he might have laid a little more stress upon the latter point, as in many instances, notably in malignant disease, the relief obtained by radium applications is wonderful. He shows that there is no hard-and-fast line between destructive and reconstructive action, but that the two processes shade insensibly into one another; and also gives a word of caution as to the relative susceptibility of various tissues, of which full note must be taken in determining the dosage to be employed. Turning to cases which offer the best hope of successful radio-therapy, he details those in which the most favourable results have been obtained, and which are for the most part definite lesions or chronic inflammations of the skin.

Referring to the very important and much discussed question of the treatment of malignant growths he is of opinion that the results vary chiefly in accordance with the depths of the tissue involved, and alludes to the difficulty of successfully dealing with epitheliomata of the mucous surfaces, which are invariably more resistant to treatment than those affecting a glabrous surface. We fully agree with his view that radium should not replace the surgeon's knife in the treatment of all operable cases of malignant disease, but should be used as an adjunct to it. It may often be advantageously employed before an operation to induce retrogressive changes in the growth, or after the operation to destroy possible small deep-seated and imperceptible foci.

The last chapter is devoted to a consideration of the therapeutic use of radio-active earths, mud-baths, &c. This mode of treatment has so far obtained no footing in the British Isles, but is greatly in vogue at some of the continental spas and in Paris. The technique is simple and harmless, and good results in the treatment of rheumatism and allied conditions are claimed for it, but much yet remains to be done before a positive pronouncement can be made thereon.

In conclusion, we congratulate the author on an interesting little treatise, which should be on the bookshelf of every practitioner who desires to acquaint himself with the present position and future possibilities of radium therapy.

Meteorology, Practical and Applied. By Sir JOHN W. MOORE, M.A., M.D.Dub., D.P.H., D.Sc. Oxon. (Honoris Causâ), F.R.C.P. Irel. Second revised and enlarged edition. London: Rebman, Limited. 1910. Pp. 492. Price 10*s.* 6*d.* net.

THE last 10 years have seen very great advances in meteorological science, arising partly out of the increasing scientific interest taken in the subject and partly from an increasing conviction of its importance in industry and in health. It is open to everybody to study meteorology, for it involves no elaborate machinery, no specially equipped laboratory, no complicated apparatus, and yet there are few who take advantage of these facts. A few people "tap the glass" occasionally, and make perhaps in addition a note of the variations of temperature, the only significance of which to them is the question of whether it is going to be a fine or wet day. The direction of the wind, the kind of cloud that hangs in the sky, the hygrometric indications, the electrical storm, are regarded as interesting natural phenomena, the meaning and significance of which, however, are rarely seriously studied. We may hope for better things, perhaps, when the subject is discussed more widely, and amongst the observers doing excellent work in this direction is Sir John Moore, the author of the interesting and attractive volume before us. No intelligent person will start reading a chapter in this book casually without going on seriously with it. The interest once started continues. Sir John Moore has been at great pains to make the second edition of his book "reflect to an adequate extent the advances which have been achieved." He has drawn freely on the works written by well-known authorities. He gives references to the

journals which contain the original account of researches in meteorology, and the result is an admirable and up-to-date collection of the world's work on the subject. It is an advantage that he has written from the point of view of the amateur observer, for his writing appeals to the reader who requires technical and scientific terms explained. His object has been to convey a clear idea of the science of meteorology to the person of ordinary intelligence and education, who for some reason or other has not previously had his attention attracted to the subject, in spite of the notorious willingness of all the inhabitants of this country to talk about the weather. Mainly Sir John Moore writes as a physician, but the application of the study of weather to questions of health he has reserved for the closing chapters. He starts with a brief introduction, partly historic and partly an emphasis of the importance of the subject, which is succeeded by an account of the methods employed in practical meteorology, the uses of the barometer, thermometer, hygrometer, anemometer, electroscope, kites, and so forth. Then follows an engaging section on climate and weather, and, lastly, in Part IV., three chapters on the influence of season and of weather on disease. The book is well and usefully illustrated and is full of the most interesting and entertaining material.

The Flora of Algeria. By ALFRED S. GUBB, M.D. Paris. London: Baillière, Tindall, and Cox. Price 5*s*.

BOTANY has ever been a favourite pastime with medical men provided with adequate leisure, and the exotic vegetation of Algeria is well calculated to stimulate into activity any latent taste of the kind. This comely volume is a photographic album of trees, plants, and flowers met with in that favoured clime, not necessarily indigenous to the soil but which have been acclimatised. The author is careful to disclaim any scientific pretensions for his work, and contents himself with giving a brief description of each plant in order to facilitate identification. Naturally, the first thing the visitor to Algeria asks is the name of the various vegetable eccentricities that attract his attention, and we can quite believe from personal experience that it is the exception to meet with trustworthy informants, the knowledge even of professional gardeners being limited in most instances to the score or so of flowers which they are accustomed to handle. On the whole, we may congratulate the author on the success of his photographic efforts, which are well produced on art paper. In any future edition, however, he would probably be well advised to amplify his descriptions, which, if anything, err on the side of brevity, and if he could see his way to give his readers a leaf index they would assuredly be grateful for its assistance in the pursuit of knowledge.

British Rainfall, 1909. By H. R. MILL, D.Sc. London: Edward Stanford. 1910. Pp. 120 + 308. Price 10*s*.

IN this, the forty-ninth annual volume, Dr. Mill gives an account of the organisation started by the late Mr. G. J. Symons, carried on by him until his death in 1900, and since then under Dr. Mill's own control. Nine other observers are now associated with him as trustees in the British Rainfall Organisation. The total number of complete records furnished during the year 1909 was 4681, an increase of 143 over 1908. Dr. Mill shares in Mr. Symons's strong belief that freedom from the conventional red-tape of official procedure is essential for the success of the undertaking; with this view, no doubt, very many scientific observers will agree. Mr. Gethin Jones contributes an article on the spot in England and Wales where snow lies latest; this is in a gully (not marked in the Ordnance maps) at an elevation of 3000 feet, lying 1200 yards N.N.E. of Carnedd Llewelyn in the Snowdon range, where snow lay until the end of June in the present year (1910), as shown in photographs reproduced in this volume. The outstanding feature in the rainfall for 1909 was the large number of hours' fall recorded in all parts of the country: at Camden-square the figure was the highest (576·5 hours), except in 1903, during 29 years. The average fall for England and Wales was 35·30 inches, being 4 per cent. above the average of 29 years; for Scotland it was 45·59 inches (4 per cent. below average); and for Ireland 38·13 inches (10 per cent. below average). The wettest place in England and Wales was The Stye, Cumberland (176·30 inches); in Scotland it was Loch Quoich (151·10 inches); and in Ireland, Killybegs, Donegal (78·71 inches). The least rainfall was registered at Fortrose, Ross (19·45 inches). The value of the labour of Dr. Mill and his coadjutors in British climatology can hardly be over-estimated, though we fear that it is quite true, as he says, that "at present the Local Government Board has no idea of the vast importance of the accumulated rainfall data at the service of the country."

LIBRARY TABLE.

Sanitary Law in Question and Answer. By CHARLES PORTER, M.D. Edin., Barrister-at-law. London: Longmans, Green and Co. 1910. Pp. 150. Price 3*s*. 6*d*.—In very small compass and without any padding Dr. Porter has provided the student of public health with all that he need know in regard to sanitary law at this present date. The various Public Health Acts are summarised and their provisions and intentions expressed in plain English; in the second part the principal allied Acts are similarly dealt with. The work is strictly up to date, last year's Housing and Town Planning Act being concisely but adequately described. The form of question and answer is not much in favour nowadays for a text-book, but for such a subject as sanitary law it appears to be quite suitable. This is a convenient manual, and the author's experience as medical officer for a metropolitan borough guarantees that the information is to be relied on.

First Aid to the Child. By D. HASTINGS YOUNG, M.B., M.S. London: G. Routledge and Sons, Limited. Pp. 317. Price 3*s*. 6*d*.—The object of this book is twofold: to teach mothers and nurses how to maintain the health of infants and young children, and also to serve as a "first aid" guide in the treatment of their diseases. The first section deals with the feeding of infants, the second with their diseases. The book is written in simple language, and though not of striking originality would be useful in cases where a medical attendant is not available. As in most books of the kind, the writer seems to have found it difficult to determine how much medical knowledge should be assumed in the reader and how much technical instruction should be given to persons presumably unacquainted with the groundwork of medical science. The instructions as to feeding are carefully given and the preparation of "humanised" milk is clearly described. The writer seems to have a prejudice against pasteurisation of cows' milk, which is barely mentioned; neither are dried milks noticed. Mumps is described as a disease of the mouth, and no precautions against infection are mentioned. Not everyone will agree with the statement that in connexion with post-nasal growths hearing is but rarely affected. Speaking of asthma it is rightly said that late suppers should be avoided; but such an injunction applies rather to adults. Diphtheria is said to be supposed to arise originally from defective drainage; no mention is made of milk as a vehicle for infection. Chorea is barely named, and not described, nor its importance in connexion with the rheumatic diathesis appreciated. The subjects of ringworm and parasites are also very lightly touched on. On the whole, although there is

useful information in the volume, it does not convey the idea of being the outcome of any large practical experience.

An Elementary Course of Food Testing. By B. A. BURRELL, F.I.C., Lecturer on Food and its Adulteration, Central School of Commerce, Leeds. London: Baillière, Tindall, and Cox. 1910. Pp. 92. Price 2*s.* 6*d.* net.—This is a very short and simple introduction to the chemical analysis and microscopic examination of some of the commoner food substances, compiled for the use of a class formed for the study of food and its adulterations. It is written simply, and makes no pretence to originality. Short and elementary as it is, there are some omissions that one is surprised to find. The origin of the metre is mentioned, but not the reason for adopting the weight of 1 cubic centimetre of water at 4° C. as the unit of weight. A few illustrations of starch grains, &c., are given, but very little use is made of the microscope. In a book published in 1910 we should expect to find the nitrogenous principles of food called proteins and not "albuminoids," this term having been practically abandoned by scientific chemists. Red litmus paper, again, is not the best indicator for alkalies, while turmeric is not mentioned.

Livingstone College Year Book, 1910. London: Livingstone College, Leyton, E. Pp. 128. Price 6*d.*—This account of excellent work in the medical training of missionaries records a slight falling off in the number of students at the college during the past year, which we trust is only temporary. An account is also given of the work in various parts of the world carried out by past students of the College, together with some notes on recent advances in tropical medicine. As to the value of the training afforded at the College there can be no question; those who pass through the course do not become "medical missionaries," nor do they assume to themselves the status of qualified medical practitioners. But they receive sufficient medical training and instruction in tropical hygiene to enable them to look after their own health, and to be of great use to the people with whom their lot is cast "in places where they themselves, or those about them, may sicken and die from curable diseases before the doctor could be summoned, even supposing he could leave his post and come."

BRITISH MEDICAL BENEVOLENT FUND

AT the November meeting of the committee 28 most distressing cases were considered and grants amounting to £300 made to 27 of the applicants. So few contributions have been received during the last few months that to do this it was necessary to draw upon, and indeed nearly exhaust, a small fund which has been carefully reserved for such an emergency. The committee therefore urgently appeals for help to enable them to deal with the numerous applications which are certain to be received at the next few meetings. Appended are particulars of the cases relieved:—

M.D. Lond., aged 43 years. After holding responsible resident posts in this country went abroad and worked up an excellent practice, but two years ago had an attack of hemiplegia and is now quite incapacitated. Two children, aged 10 and 9, at present being looked after by a relation. Has a small income, but it is insufficient for present unavoidable expenses. Voted £6.

Wife, aged 61 years, of L.F.P.S. Glasg., who is at present acting as ship's surgeon. Applicant lets lodgings, but in her husband's absence has unavoidably got a little behind with the rent. Voted £2.

Widow, aged 46 years, of M.R.C.S. Eng. Quite unprovided for at death of husband nearly 20 years ago, and finds great difficulty in supporting herself as a maternity nurse. Relieved four times, £46. Voted £12 conditionally.

Widow, aged 53 years, of L.R.C.P., L.R.C.S. Edin. Quite unprovided for at recent death of husband, and the small sum obtained for the death vacancy was swallowed up by debts. Endeavours to support herself by taking boarders, but at present has only one paying a small weekly sum. Voted £10.

Widow, aged 40 years, of M.D. Durh. Has been acting as a companion, but is temporarily in a state of health which necessitates a complete rest. Voted £12.

Widow, aged 62 years, of M.R.C.S. Dependent on an annuity of £10 and 5*s.* a week from an old age pension. Children unable to help. Voted £6.

L.R.C.P. Edin., aged 52 years. Used to have a fair practice in London, but for the last five or six years has been in very bad health and is now quite destitute. Hopes shortly to obtain a ship's surgeoncy. Voted £5.

Widow, aged 74 years, of M.D. Lond. Entirely dependent on two small annuities and requires help to obtain the small comforts necessitated by her age. Relieved five times, £31. Voted £5.

Daughter, aged 60 years, of late L.S.A. No income; tries to support herself by letting lodgings, but has been incapacitated for a few months as the result of an accident. Relieved twice, £24. Voted £12.

Wife, aged 65 years, of L.R.C.P. Was deserted seven years ago through no fault of her own, and is entirely dependent on this Fund and the Distressed Gentlefolks' Aid Association. Suffers from chronic bronchitis and is therefore unable to support herself. Relieved three times, £36. Voted £12.

L.R.C.P. Edin., aged 54 years. Has been quite incapacitated for several years by spastic paralysis and is dependent on an aged mother who can ill afford to help. Relieved six times, £72. Voted £12.

Widow, aged 53 years, of M.R.C.S., L.S.A. No income and health too feeble to permit of any regular work. No children. Relieved six times, £68. Voted £12.

Widow, aged 50 years, of L.S.A. No income and dependent on this Fund and a son earning only 17*s.* a week. Is blind in one eye and nearly so in the other. Health very feeble. Relieved six times, £70. Voted £18.

Daughters, aged 58 and 53 years, of late M.R.C.S. Endeavour to support themselves by needlework, but are in feeble health. Relieved six times, £74. Voted £20.

Daughters, aged 60 and 51 years, of late M.R.C.S. Live in a small house which they own and take boarders, but have had a very bad season. Relieved once, £10. Voted £18.

Daughter, aged 59 years, of late M.D. Lond. No income; lets lodgings. Relieved 27 times, £202. Voted £6.

L.R.C.P., L.R.C.S. Irel., aged 64 years. Was obliged to give up a practice in the North of London on account of ill-health, and is now quite incapacitated and without means; slight help from a sister-in-law. Relieved once, £18. Voted £18.

Widow, aged 62 years, of late M.R.C.S. Income £12 a year; children only able to give very slight help. Relieved once, £12. Voted £12.

Widow, aged 65 years, of M.R.C.S., L.R.C.P. Supported herself for some years as companion, &c., but is now only able to earn a few shillings a week by needlework. Relieved once, £12. Voted £12.

Widow, aged 65 years, of M.R.C.S., L.S.A. Supported herself for 24 years, but is now unable to obtain a suitable post. Relieved twice, £24. Voted £12.

Daughter, aged 58 years, of late L.R.C.P. No income; very deaf and otherwise unfit for any employment; dependent on a sister who has to earn her living. Relieved five times, £56. Voted £12.

Daughter, aged 63 years, of late M.R.C.S. Is not physically strong and gives her services as housekeeper in return for a home but receives no salary. Relieved twice, £24. Voted £12.

Daughters, aged 46 and 38 years, of L.S.A. Both physically incapable of earning a living; the elder has recently obtained a pension of £21 per annum; the younger is entirely dependent on her mother whose income is very small. Relieved six times, £72. Voted £6.

Widow, aged 69 years, of L.R.C.P. Edin. No income; children do not help; eyesight failing. Relieved three times, £36. Voted £12.

Widow, aged 61 years, of late M.R.C.S. Health very indifferent and only income 7*s.* a week, contributed by her sons. Relieved twelve times, £135. Voted £12.

Daughter, aged 56 years, of late L.S.A. Eyesight defective and chronic ill-health, which makes any continuous employment impossible; slight help from friends. Relieved nine times, £92. Voted £12.

Daughter, aged 52 years, of late L.R.C.P. Nursed both mother and father during illnesses which lasted many years, and is now without any means and unfitted to earn a livelihood. Relieved twice, £24. Voted £12.

Contributions may be sent to the Honorary Treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

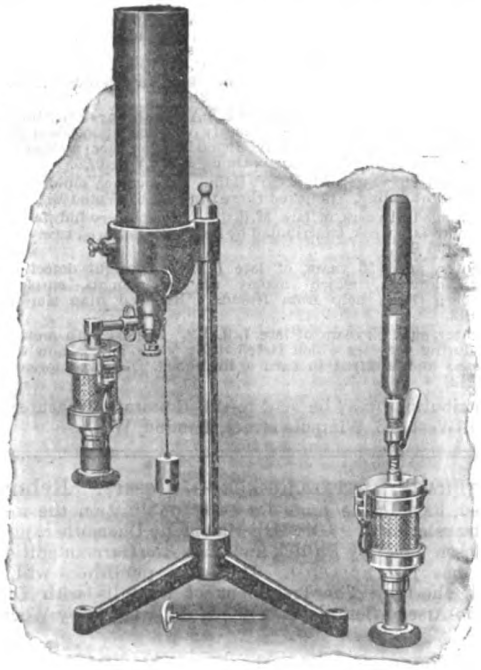
LITERARY INTELLIGENCE.—Messrs. Rebman, Limited, have in the press for early publication the authorised translation of "Die Experimentelle Chemotherapie der Spirillosen, &c.," by Ehrlich and Hata, the German edition of which has just appeared. The same publishers will also publish shortly "The Treatment of Syphilis with Dioxy-Diamido-Arseno-Benzol" (Ehrlich-Hata "606") by Wechselmann.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.—The following papers were read before the Royal Society on Dec. 8th by members of the staff of the Liverpool School of Tropical Medicine, viz.:—1. Some Enumerative Studies on Malarial Fever, by Major Ronald Ross, F.R.S., and David Thomson, M.B., Ch.B., D.P.H. 2. Experiments on the Treatment of Animals Infected with Trypanosomes by means of Atoxyl, Vaccines, Cold, X Rays, and Leucocytic Extract: Enumerative Methods employed, by Major Ronald Ross and J. G. Thomson, M.A., M.B., Ch.B. 3. The Life History of Trypanosoma Gambiense and Trypanosoma Rhodesiense as seen in Rats and Guinea-pigs, by H. B. Fantham, D.Sc., B.A. 4. Enumerative Studies on Trypanosoma Gambiense and Trypanosoma Rhodesiense in Rats, Guinea-pigs, and Rabbits, Periodic Variations Disclosed, by H. B. Fantham, D.Sc., B.A., and J. G. Thomson, M.B., Ch.B. 5. A Case of Sleeping Sickness studied by Precise Enumerative Methods: Further Observations, by Major Ronald Ross, F.R.S., and David Thomson, M.B., Ch.B., D.P.H. 6. On Hæmoglobin Metabolism in Malarial Fever, by G. C. E. Simpson, B.A., M.B., F.R.C.S.

New Inventions.

THE "PRANA" CARBON DIOXIDE SNOW APPARATUS.

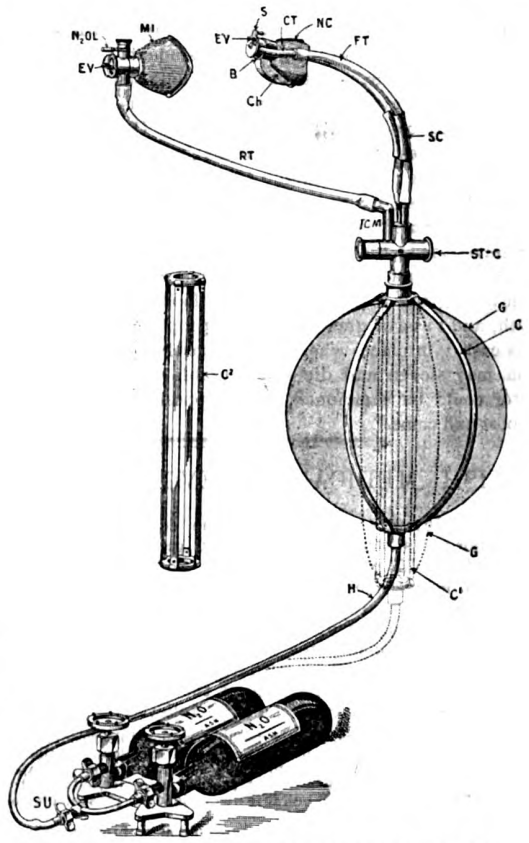
THIS apparatus is designed for producing the new freezing caustic CO_2, in the treatment of nævi, lupus, lupus erythematosus, lupus vulgaris, warts, moles, and so on. The method of treatment was described in a paper by Dr. Reginald Morton read before the Electro-Therapeutical Section of the Royal Society of Medicine on Nov. 19th, 1909, which was published in THE LANCET of Dec. 4th, 1909 (p. 1658). A subsequent paper by the same author appeared in THE LANCET of May 7th, 1910 (p. 1268). The "Prana" apparatus produces a convenient and effective pencil of carbonic acid snow with a minimum of trouble. It consists of a steel cylinder containing liquid CO_2 to which is attached a specially constructed metal box in which the CO_2 as it escapes condenses to snow. The snow obtained is ultimately compressed in a kind of stamp-mill or mould from which it emerges as a firm stick or pencil. The process is very simple and expeditious. In the accompanying illustration the apparatus on the left is for hospital use, and that on



the right is portable and convenient for general practice The temperature of the frozen gas is −79° C. A constantly cold solid of definite shape is obviously more convenient to use than a liquid refrigerant. The pencil of solid CO_2 enables, for example, as much pressure to be applied as is wanted, and thus freezes the tissues to any desired depth up to a reasonable limit. There is a gradual escape of gas from the pencil when it is applied, so that a fresh surface is constantly being presented. The action of the pencil is easily under control and can be readily localised, the extreme degree of the cold enabling its devitalising action to extend rapidly to the intended depth without risk of injuring deeper or adjacent parts. For shallow growths, it is said that an average period of 40 seconds suffices for the required depth of destruction, while deeper structures such as a thickly crusted wart require a longer application. Beyond a trifling smarting during the application, and some pain as the parts recover their normal temperature, there is no serious inconvenience to the patient. The apparatus marks a valuable and important development in dermatological practice. We are indebted to Aerators, Limited, of Upper Edmonton, London, N., for an inspection of the types illustrated above.

A NASAL INHALER FOR THE CONTINUOUS ADMINISTRATION OF NITROUS OXIDE.

SINCE the introduction in 1898 of the nasal method for administering nitrous oxide several forms of inhalers have been introduced and as many methods evolved in their employment. This would seem to indicate that no one form of inhaler is capable of satisfying the demands of every anæsthetist. The apparatus figured below allows the induction of anæsthesia by the two chief methods at present employed, and by a simple mechanism of throwing out of action certain valves the conditions favoured by other administrators can be obtained. The self-retention of the nasal inhaler, the absence of rubber pads, and a regulating



Combined mouth cover and inhaler.—MI, Mouth cover. N_2OL, Nitrous oxide lever. EV, Expiratory valve. RT, Rubber tubing. ICM, Inhaler connexion mount. Nose-piece, &c.—EV, Expiratory valve. B, Body. Ch, Channel. S, Shutter. CT, Conveying tubes. NC, Nose cap. FT, Flexible tubes. SC, Sliding clamp. ST-C, Stopcock. G, Gas-bag distended. G^1, Gas-bag empty. C, Gas-bag compressor distended. C^1, C^2 Gas-bag compressor at rest. H, Tubing to gas stand. SU, Single union connected to gas stand.

gas and air stopcock are, I think, features which will appea to all. The accompanying illustration shows the apparatus as fitted up.

I have intrusted its manufacture to Messrs. C. Ash, Sons, and Co., to whom I am indebted for many useful suggestions.

Harley-street, W. F. COLEMAN.

THE LANCET.

LONDON: SATURDAY, DECEMBER 24, 1910.

Pluralists in Medical Posts.

THERE was a time when it was quite common—in fact, so common that it would have been but little exaggeration to describe it as the rule—for several posts in the Church to be held by one man. The same incumbent was dean of one place, rector of another, and vicar of a third, and these three posts were held by him when other men, probably equally suitable for the work, were without any benefice. With duties so numerous, with posts often situated far apart, even in different counties or in different sections of the kingdom, it was physically impossible for the holder to discharge fully and completely the charges he had undertaken, but a few years ago both the theoretical and practical difficulties were ignored. So serious, however, at last did the practice of pluralism in the Church become that it was considered necessary to institute restrictive legislation, and now it is illegal for a Clerk in Holy Orders to hold several benefices unless they are small and situated within a short distance of each other. The subject of pluralism has of recent years become the subject of debate in the medical world. In a recent letter from our Vienna correspondent it was mentioned that the practice of holding several hospital appointments had been found in that city to act unfairly towards many of the junior members of the profession. Our correspondent wrote that it was not uncommon for a professor to hold the position of consultant in some special department at four or five different institutions, while many *privat docenten* were unable to obtain any post. It is certain that this difficulty is not confined to Vienna. In the British Isles it is quite usual to find one physician or one surgeon holding several distinct posts at different institutions, and in this way doing much to block the junior members of the profession in their advance, and last week we published the new rules dealing with this subject which have been recently considered and confirmed at a meeting of the subscribers to the General Infirmary at Leeds. These rules provide that in five years from Jan. 1st, 1910, pluralism will cease to exist among the members of the full honorary medical staff, who will be permitted only to hold the infirmary appointment. From the same date onwards the assistant medical staff will only be allowed to hold one other hospital appointment in addition to the infirmary appointment. The rules display very clearly the modern feeling towards pluralism in medical appointments, and are wise in their different treatment of the full and assistant staffs.

The same motive is not at work here as aforetime influenced the opposition to the pluralists in the Church. There the motive was frankly a fairer sharing of the pecuniary rewards derived from the several benefices. A large portion of the work of the pluralist was practically never done in person; for the most part it was entrusted to a junior member of the clerical profession at but a small percentage of the actual remuneration. In medicine the case is otherwise. The actual pecuniary benefit derived from the holding of any post is very small—in fact, in many cases it does not exist. There is no attempt made to transfer the work to a deputy; rather the holder of these many posts, rejoicing that he has so many, enjoys and performs the hard work which those posts entail. It cannot be denied that in many cases indirect benefit does accrue to the medical pluralist. The fulness of experience cannot fail to render his knowledge wider and more exact; some increase of reputation is also probable, and the increase in reputation will almost always result, when combined with the fulness of experience, in increase of practice. Still, the beneficial consequences are by no means certain, and we have known the energetic holder of multiple posts perform herculean tasks in conscientiously fulfilling numerous duties, and yet derive neither directly nor indirectly any pecuniary benefit therefrom. And it is not unusual to see the man whom over-strenuous effort has not rewarded in any way fall into a lifeless manner of discharging his too heavy responsibilities. We can well understand and sympathise with the desire to see as much as possible of the work in every branch of medicine; it betokens a zeal well suited for such a profession as medicine, but it may have consequences harmful to the zealot. When a man is in the first decade of professional life no amount of work appears to be too arduous, no hours seem too long for the furtherance of study, but as years go by the power to indulge in such feats diminishes. There is a natural unwillingness to resign work which was once a joy, and if such a resignation appears as a confession of advancing age it is obvious that the temptation to hold on to all becomes very strong. But it should be resisted. With all due justice to the conscientious pluralist, it is just possible that there may be a little hurry in his carrying out of the work, a little less care and attention being paid to it than would be paid if there had not been so much work to do. From this situation the rules which have been made recently with regard to pluralism at several of our large hospitals will serve to save a man in a dignified way.

We have spoken of the harm to the medical pluralist, but the harm to his younger brethren is just as important. At the present day the number of men who wish for hospital work is so large, that if several posts are held by one man many who may be just as intelligent, just as learned in that department of medicine, will fail to obtain any post at all. A post at some minor hospital, which may be of the slightest value to the man who has advanced far in his profession, may be of very great account in every way to his younger colleague. The boards of management of some of the more important hospitals already recognise that danger may attach to the holding of several hospital posts by the same man, and they reserve to themselves the right to require of men appointed to the medical staff of these hospitals that they should resign other posts if called upon to do so. Usually they look upon a post at a children's hospital

as not incompatible with due attention to the duties of staff officer to a general hospital, but as a rule they decline to allow a member of their staff to be also a member of the staff of another medical school, and they would certainly decline to allow any serious rearrangement of hospital hours so as to enable members of the staff to be elsewhere when they should be within the hospital walls. Our own view is that not more than one post at each of two hospitals should be held by the same man. These posts should give him ample opportunity for hospital work. They would provide him with all the experience he may need, they will require from him all the energy which he can reasonably be expected to devote to hospital work, and he will not be depriving a younger colleague of an opportunity of obtaining due advancement. It would be difficult for the medical profession as a whole to take any part in laying down rules for the carrying out of this arrangement, and the discretion in the matter must remain with the governing bodies of hospitals. We have seen that in Vienna a useful change has been brought about by the hospitals themselves, and we feel sure the hospitals in this country are quite capable of dealing with the position.

The Extension of Hospital Care.

THE first annual report has been issued of a charity entitled the Cicely Northcote Trust, under a scheme initiated last year in consequence of the trustees of the fund named having offered to devote it to the establishment of social work in connexion with the in-patients of St. Thomas's Hospital. The step thus taken tentatively for the benefit of the inmates of a particular institution, and submitted to public appreciation by the issuing of a first report, deserves attention as such, and also on account of the possible developments which may attend upon its success in the future. It may, indeed, prove to be the beginning of an important movement of a kind which has already made its usefulness felt in the United States, but which has not hitherto been organised with us in any widely extended or systematic manner. If we explain briefly what are the objects of the Cicely Northcote Trust and the methods by which it is sought to attain them, it will be seen that the matter is one worthy of the attention of all who desire to see our hospitals working with full efficiency to alleviate suffering among the poor, and exercising a beneficent influence not limited to the treatment, surgical or medical, administered in their wards. A document such as the report before us is not addressed to the medical profession, but to that wider public who supply for the contests waged in our hospitals against physical incapacity and death the sinews of the war, and who if they ever enter the hospitals do so as sympathetic onlookers only. It reminds these, or any who may in imagination put themselves in the position of such sympathetic onlookers, that in many instances the suffering of the hospital patient stricken down by disease or by accidental injury is not confined to the sensation of physical pain, severe though that may be. Doubt, fear, and anxiety augment bodily suffering by mental torment. There may be distracting uncertainty as to the future and as to the present fate of those left at home destitute, to face the situation arising from the incapacity of the worker. There may be the knowledge that when all that the hospital can do has been accomplished it must be rendered ineffective by the poverty, misery, and ignorance into the midst of which the patient knows that he is returning. This, by the way, is a knowledge which must affect others than the patients themselves with a feeling that all the care bestowed, so far as any lasting good is concerned, will perhaps be altogether wasted.

For some years social work among the out-patients has been carried on, so far as means have allowed, at St. Thomas's Hospital, and the same is now being tried under the auspices of the Cicely Northcote Trust in the case of the in-patients and of phthisical and obstetric cases under treatment in the out-patient department. In the case of the last the demand upon the resources of the Samaritan Fund has been too heavy to be met, and it was not considered that they were the patients for whose benefit it was intended. When the scope and objects of the proposed new work came to be considered it was felt that the best policy was to draw up an extensive programme and to start operations in a small way under all the headings included in it, allowing circumstances and increasing knowledge and experience to modify or augment the efforts made in any particular direction. It was resolved as a general plan, therefore, (1) to carry out a system of social service in connexion with the wards, including the assistance of in-patients and their families, but not the granting of surgical instruments or convalescent treatment already undertaken by the Samaritan Fund; (2) to undertake the care of all phthisical out-patients and to supervise their homes; and (3) to provide for the assistance of out-patients attending the obstetric department. In practice the endeavour is made to encourage thrift and independence, and to subsidise the efforts of those honestly endeavouring to help themselves, and to enable, as far as possible, the instructions of physicians and surgeons to be carried out. Aid is thus given to persons who have not hitherto come under the Poor-law, those already in receipt of parish relief being left to the care of the guardians. As can readily be supposed, the work attempted in a first, and consequently experimental, year, subject to the limitations of a restricted income, has not been extended throughout a large hospital. In certain wards where the trial has been made a "Northcote worker" has visited patients at regular days and hours in order to ascertain such details of their home lives and needs as they might be ready to impart. This has been done in combination with the ward sisters, and so far as the Northcote worker is concerned it is confined to the precincts of the hospital itself. Outside, where help appears to be wanted, the aid of the clergy, of the Invalid Children's Aid Association, of the Charity Organisation Society, and of similar institutions as well as that of sympathetic individual volunteers, is invoked, the home is visited, and its conditions are thoroughly inquired into, after which assistance is given or withheld in accordance with the needs of the case. These, of course,

vary widely both in nature and in the extent to which pecuniary or personal influences may be required for their alleviation. A little tactful persuasion may have to be applied in order that a workman's situation may be kept open for him until his recovery; a home may have to be visited in order to see that the children are being cared for during their mother's absence; material aid, instruction, and supervision may be wanted in order that a phthisical patient may carry out at home advice which the physician can give but cannot enforce. In a large number of obstetrical cases, besides such help and counsel as may be needed in order that the physical welfare of the patient may be protected, there is obviously an opportunity for the sympathetic adviser and friend almost unlimited in its extent and in the variety of its demands upon the helper's resources. It is only necessary, however, to indicate the nature of the work in order to point out that its extension must depend upon the number and zeal of those who are willing to assist and upon the resources which the generosity of the charitable may place at their disposal. It is not a question of regulating the almsgiving of a benevolent institution, and of increasing its power to bestow money upon the poor, but of distributing in the most practical way help which may take the form of money or of money's worth, but which may in other instances be equally effective for good without the expenditure of a shilling. It is the holding out of a helping hand which will be grasped gratefully for the sympathy and aid that it brings—a hand which will supplement and render complete the work of the hospital, but which the hospital cannot extend because its energies, and the funds which sustain them, have to be devoted to definite purposes of a particular and limited nature.

We observe that in a note preceding the Lady Almoner's report of the work of the Cicely Northcote Trust it is said that: "The work is increasing so rapidly now that if it is to progress, as it is hoped it may, it will be necessary to obtain a much larger income to meet the heavy working expenses and to engage further skilled and trained assistance. It is hoped that after the publication of this first annual report the work may be increased by donations and annual subscriptions being sent to the honorary secretary." We echo that hope in giving publicity to it, and shall watch with interest the progress of the trust named and the development of the effort which it represents to alleviate a form of misfortune which evokes our warm sympathy. Our hospitals open their doors to the poor when stricken down by disease or by injury, and, so far as it lies in their power, minimise by medical and surgical treatment the weight of the blow which disease or injury inflicts upon those whose health, and consequent ability to earn a living by their daily toil, are often their only assets. It is not possible for hospitals to carry the work further than the healing of the physical disability, but they may well become the source and centre of charitable endeavour to avert the otherwise inevitable consequences of incapacity from falling upon the patient and his or her dependents. They should thus be able to inspire and guide the operations of voluntary lay workers in the cause of charity, thereby strengthening and widening their own influence to the advantage of the community.

Prison Reform and Common Sense.

IN recent discussions regarding the treatment of the criminal a great deal has been heard about the shortcomings of our penal methods, which, if we are to believe some critics, are the product of a quite ingenious combination of cruelty and ineptitude. Much of this criticism emanates, of course, from persons who have very little direct knowledge of the details of the system on which they so confidently pass judgment, and little, if any, real acquaintance with the factors of the problem which this system has to meet; and, indeed, the very exaggeration of their censure is sufficiently suggestive of this fact to breed suspicion in the judicial mind. That type of mind, however, is hardly so general that it is safe to trust entirely to its discriminating action in matters of this sort; and it is therefore desirable that such inaccuracies should not be merely ignored as patently false, but that they should be authoritatively contradicted. This necessary task has been admirably carried out in a very interesting volume of reminiscences which Dr. R. F. QUINTON, lately governor of H.M. Prison, Holloway, has recently published under the title of "Crime and Criminals, 1876–1910."[1]

Dr. QUINTON was a medical officer in the prison service for many years before he was called on to take up disciplinary duties as a governor, and he had thus exceptional opportunities for observing the working of the prison system from two different, and in some respects almost opposed, points of view. Moreover, the years of his service fell in a period remarkable for very far-reaching changes in ideas and in practice regarding penal methods. His account, therefore, of the evolution of our prison system is based on an unusually wide and varied experience, and it is evident from a perusal of his book that he has made the most of his opportunities, and that throughout his career he has been able to apply to the facts coming under his observation an acute and critical judgment and a flexibility of ideas which popular prejudice does not usually associate with the official mind. It is gratifying to find that an observer so well qualified to judge does not share the unfavourable opinions which so many critics have recently expressed regarding the value of the penal system in the repression of crime. He is prepared, on the contrary, to maintain that in the last three decades there has been a marked diminution in the amount of serious delinquency, and in confirmation of his view he is able to point to the steady decrease of the daily average population of our prisons, and more particularly of our convict prisons. Still more striking is the testimony which he bears to the change that has come over the type of criminal. Such appalling deeds as the Houndsditch murders, though they are frequent in the records of crime on the Continent, are providentially rare with us, and when they occur in this country the criminals are invariably aliens. Our social improvement is apparent, not only in the greater rarity of ferocious crimes, but also in the very much better standard of conduct in prisons. While recognising, of course, that this change is largely due to general civilising influences, amongst which the spread of popular education is the most

[1] London: Longmans, Green, and Co. 1910.

important, Dr. QUINTON claims that some part of the credit is also due to the more humane spirit in prison administration, to the better treatment of the prisoner in the matter of diet and employment, and to the restriction of corporal punishments to offences of gross and brutal violence. At the same time it has to be remembered that the average prisoner, though very much better than he used to be, has not yet reached the altitude of moral and intellectual superiority where the fancy of the sentimentalist sometimes places him.

The failure to recognise this fact may easily lead to such results as Dr. QUINTON humorously typifies in the story of the female prisoner provided with a volume of some literary quality and using the pages to curl her hair. The fallacy of the amateur prison reformer, as Dr. QUINTON rightly insists, lies in this substitution of a figment of the imagination for the flesh and blood reality which penal systems have to deal with, and this fallacy not only makes the captious critic discover imaginary faults but it also blinds him to what is the real defect of that system—namely, its entire unsuitability to large classes of persons who have been forcibly and very unwisely brought under its influence. So long as wandering lunatics, mental defectives of all sorts, vagrants, and inebriates are poured into prisons, it is idle to suppose that these institutions can be made to exercise their full reformatory influence on normal offenders. This obvious truth has been insisted on by prison officials in season and out of season; its force is admitted by every section of enlightened public opinion, but nothing is done to remedy the evil. Dr. QUINTON is fully justified in maintaining that the prison administration which in the face of such difficulties has devised and brought into operation such measures as the Borstal treatment of adolescent offenders, and which has raised the hygienic standard of our prisons to its present level, has proved its efficiency. This interesting sketch of our prison system may be commended to the attention of all who are interested in the problems of criminality, and their appreciation of it will doubtless be in no way lessened by the fact that the author's keen sense of humour has enabled him to see, and to make his readers see, the comic side of many of his official experiences.

Annotations.

"Ne quid nimis."

SIMPLE DIETETICS AT CHRISTMAS.

PHYSIOLOGY has long taught the advantages of simplicity in dietetic matters, and its warnings may well be borne in mind in the approaching festive season. All that counts for enjoyment is not condemned by physiology, for, as is well known, the appreciation of food contributes largely to its due appropriation for the bodily needs. A joyous environment is equally valuable and a festive occasion is not necessarily a physiological immorality. The Christmas dinner, which is a highly cherished institution, is, after all, a simple affair, and its ingredients are in general of the most wholesome kind. Why do humorists persistently represent the opposite view? Roast beef or turkey and plum pudding represent in plain terms the constituents of what is from a physiological point of view a complete diet, presenting all classes of reparative material demanded by the great processes of nutrition. It contains a balance of proteins, fats, carbohydrates, and mineral salts which go to make up healthy tissue. The plum pudding in particular is a complete food in itself, and the only risk of the Christmas meal is taking an excess of the good things which it provides. Fortunately, people nowadays do not need to be told to guard against excess. Life has become a strenuous affair, and all know that to trifle with the nutritive processes is to be left behind in the race. Politicians are prone to allude to the altered habits of the people, and what they really mean is that greater care is now exercised as to the quality and quantity of the food and drink consumed, while the people have found out that a festive occasion is not robbed of its joyousness because a temperate path is chosen. The gospel of temperance in regard to both eating and drinking has been preached most effectively by the medical profession, and laymen are numerous enough who possess a sensible acquaintance with simple physiological facts to guide them. This knowledge, however, is not a fetter to their liberties, nor does it diminish the joy of a festive season. Swinish bouts are, practically speaking, a thing of the past, and everyone rejoices that that is so. There is not a single item in Christmas cheer which need be taboo to the most rigid of physiologists when there is no abuse of the good things of the feast. There may be indeed some increased demand upon the digestive organs, but it is a demonstrated physiological fact that the cheerfulness of the occasion lightens this burden. Indigestible dishes are not, as a rule, the feature of the Christmas dinner table; it is difficult to select anything more digestible than turkey, roast beef, or Christmas pudding eaten in balanced quantities. There are plenty of other meats and sweets which are far more trying to the digestive apparatus than these. The simplicity of the English Christmas table is much in its favour, and no sensible person spoils the merit of this simplicity by indulgence. During the Christmas festivity, having regard even to the finest requirements of the functions, it is possible to be merry and wise together, a line of conduct which is in complete allegiance to physiological orders.

THE USE OF THE "SOY BEAN" AS A FOOD IN DIABETES.

THE "soy bean" (glycine hispida) has been extensively cultivated for human consumption in China, Japan, and Korea since before the time of Confucius, but in Europe and America it has been grown only to a comparatively limited extent, chiefly as a forage crop, and that within the last 15 years. It is an annual of the natural order leguminosæ. The beans are eaten as a vegetable, in soups, sometimes pickled green, boiled and served cold with a sprinkling of soy sauce, and sometimes as a salad. It forms the basis of the soy sauces which are so extensively used in the preparation of condiments; and a favourite method of preparing it in the Far East is by boiling the beans until soft, and placing the resulting mass in a warm cellar until it ferments, the result being a form of bean cheese known as "natto." An analysis of the yellow beans grown in America shows, when calculated to a water-free basis: protein, 38·50 per cent. and fat, 20·00 per cent.; and it is probable that this large percentage of easily convertible nitrogenous material accounts for the small amount of meat and other animal foods consumed by the rice-eating Chinese and Japanese. Its medical interest, however, depends largely on the fact that, unlike most pod-bearing leguminosæ, which are extremely rich in starchy material, the soy bean is almost starch free, a phenomenon which is said to be due to the presence of a diastase in the

bean capable of converting any starch formed, two-thirds into sugar, one-third into dextrin. This absence of starch suggested to observers some years ago that the bean might be advantageously used to vary the somewhat restricted diet of the diabetic, and in the *American Journal of the Medical Sciences* for December Dr. Friedenwald and Dr. Ruhräh record the results in eight cases of the disease treated by them. In each case the total quantity of urine, the percentage of sugar, and the quantity of sugar in grammes excreted in 24 hours were noted under the following conditions. First, the patient's excretions were examined on an unrestricted diet; next, under the ordinary restrictions of diabetic cookery; and, finally, on a diet of the usual diabetic foods, *plus* soy beans, the beans replacing largely the gluten of wheat bread. In each case there was a marked diminution in the total quantity of sugar excreted in a test 24 hours. Case 1 on unrestricted diet excreted 45 grammes per diem, on diabetic food 30 grammes, and on a mixture of diabetic food and soy beans 20 grammes. In Case 2 the fall was from 90 to 48 to 31 grammes; Case 3 fell from 92 to 58 to 40 grammes; Case 4 from 94 to 50 to 43; Case 5 from 58 to 0 to 0; Case 6 from 132 to 75 to 54; Case 7 from 122 to 93 to 63; and Case 8 from 143 to 79 to 40. It will thus be seen that except in Case 5, where ordinary diabetic food completely controlled the sugar excretion, there was a marked improvement on the ordinary treatment when soy beans were added to the dietary, and the conclusions arrived at by the investigators, therefore, are that the soy bean is a valuable addition to the dietary of diabetics on account of its palatability and the numerous ways in which it can be prepared, and that in some manner or other the bean causes a reduction in the percentage and total quantity of sugar passed by diabetics under the usual dietary restrictions.

MYCOSIS FUNGOIDES WITH DEPOSITS IN INTERNAL ORGANS.

AN interesting case of mycosis fungoides with rare, if not unique, features was described by Professor Paltauf of Vienna before the Section of Pathology of the Eighty-second Congress of German Naturalists and Physicians held at Königsberg in September.[1] The patient was a man, aged 64 years, who had suffered from mycosis fungoides of the skin for many years. At the necropsy changes typical of this condition were found in the skin of the trunk and limbs, some areas being atrophic, others more recently affected presenting ulcerations and crusts. On the mediastinal pleura of the right side there was a flat disc-shaped thickening 2½ centimetres in diameter, which was opposed to a similar patch on the mesial surface of the upper lobe of the lung. A smaller patch, circular in outline and sharply defined, was situated near to this, while a third was placed a few centimetres away and more dorsal in position. All three patches were flat and resembled those in the skin, especially in being redder at the periphery and paler or more yellow centrally. Numerous nodules were present in the lungs, some forming circular raised patches on the pleura, others forming tumours within the lung tissue varying in size from a cherry to a hen's egg. Some of these were degenerated centrally and presented a gelatinous appearance; others were dry and necrotic. Occasionally a central cavity with smooth walls was present. The branches of the bronchi and pulmonary artery passing to the larger nodules could usually be seen, and they were often obstructed or blocked. The peripheral parts of the nodules were markedly reddened and sharply demarcated by a firm zone of infiltration. Deposits were also found in the stomach, the mucous membrane of the fundus presenting small round ulcers with raised, infiltrated edges. Certain lymphatic glands also presented changes. The bronchial glands on the right side were enlarged, and those of the right axilla were adherent to the connective tissue, and on section showed central softening or necrosis, while the glands in the groins were firm, adherent to the connective tissue, and on section were found to be pigmented. Histological examination of the nodules in the pleura showed a granulation tissue composed of various cells similar to the typical appearances of mycosis fungoides in the skin nodules. The tumours in the lungs possessed a wide zone at the periphery, in which the alveoli were filled with fibrinous exudate, while the alveolar walls showed a cellular infiltration. Internal to this zone there was a central area made up of a granulation tissue composed of various kinds of cells, with a delicate reticulum like that of the cutaneous growths. Nuclear degeneration and the crumbling of the protoplasm described by Unna as occurring in the skin nodules were also present. A similar granulation tissue rich in cells was found in the gastric mucous membrane, while the bases of the ulcers were formed of ordinary granulation tissue. The bone-marrow and the lymph glands also presented microscopical appearances which agreed with those of mycosis fungoides. Various methods, including that of Levaditi, were employed to discover the exciting cause of the disease, but all yielded negative results. Professor Paltauf drew attention to the rarity of his case, and claimed that it was unique, since in the few recorded cases of internal tumours occurring in mycosis fungoides these have proved to be of lympho-sarcomatous nature, secondary to similar lesions in the skin.

[1] Abstracted in Centralblatt für Allgemeine Pathologie und Pathologische Anatomie of Nov. 30th.

AN ANECDOTE OF DR. CAIUS.

IN Mr. Noel Barwell's instructive and amusing account of the history of the University of Cambridge, which, with admirable colour-illustrations, has just been published by Messrs. Blackie and Son in the "Beautiful England" series, there naturally occurs some account of the famous Dr. Keys, or Caius, founder of Gonville and Caius College. This great President of the Royal College of Physicians of London, who lies buried in his "beloved College in Cambridge," shortly before his death, when the massacre of St. Bartholomew still horrified the popular imagination, was the victim of persecution at the hands of Commissioners, who burnt his collection of Catholic vestments and other religious paraphernalia within the precincts of his own college. It was the attachment of Caius to the old religion that may account for a curious and undignified story that is related of his last hours, and is probably traceable to a Puritan gossip-monger. "In his last illness," says Mr. Barwell, "he endeavoured to sustain life by a return to the natural nourishment of infancy; and divers dames of the town were privileged to minister to his wants in this respect. Being observed to be now 'froward, peevish, and full of frets,' and now tractable, docile, and of an amiable countenance, his moods and tempers were considered to vary with the individual source of his curious refreshment." The authority for this strange story, which is a kind of reminiscent travesty of the legend of Ugolino, who was suckled in prison by his daughter, is not vouchsafed us, but it is doubtless well known. An account of the life of Caius, published in 1857 by Tegg, quoted a curious passage in Dr. Moufet's "Health's Improvement." Dr. Moufet, or Moffett, physician and naturalist, who died in the year 1604 (31 years after Caius), was partly educated at Cambridge, and studied medicine under Caius. The passage is as follows: "What made Dr. Caius in his last sickness so peevish and so full of frets at Cambridge, when he sucked one woman (whom I spare to name), froward of conditions and of bad diet; and contrariwise, so quiet and well, when

he sucked another of contrary dispositions? Verily, the diversity of their milks and conditions, which, being contrary one to the other, wrought also in him that sucked them contrary effects." Curious death-bed expedients were sometimes resorted to in ancient times. We need only cite the case of King David and the Shunammite who "cherished" him in his extreme old age. The suckling story was probably indigenous in ancient Cambridge; based on fact, it may have been applied to successive unpopular characters. Caius died in distress at the persecutions to which he had been subjected, and at the gross ingratitude of the members of the society which he had founded. Religious hatred accounts for several famous death-bed traditions. Thus Voltaire is said to have died in panic-terror, but the story is very probably a clerical invention due to Voltaire's life-long scoffs at orthodoxy. France has, indeed, been the cradle of numerous discreditable stories of this kind concerning eminent free-thinkers—men of science or realistic writers—who, being dead, cannot exonerate themselves.

THE TREATMENT OF "CENTRAL OSTEITIS" WITH METAL TUBES.

THERE is a tendency in surgery, which is inherent in human nature, to strive after brilliant and spectacular effects, and any disease, chronic in its nature, and not directly fatal to the patient, which refuses to yield to rapid measures, or to give easily appreciable results, is liable to recede into the limbo of forgetfulness, and be relegated in hospitals to the house surgeon or dressers, or, owing to the pressure on beds by more acute and more rapidly healing cases, transferred eventually to the chronic wards of the great Poor-law infirmaries. Even amongst the well-to-do the same result holds good, for without the stimulus of active inquiring minds treatment does not advance, and if a subject is unattractive newer and more scientific methods of procedure are not evolved. No better example could be chosen than that of "central osteitis," for up to recent times no real advance has been made since Sir Benjamin Brodie in 1832 advocated trephining in chronic abscess of bone. The difficulty of these cases, as in the analogous ones of sinuses leading down to bone, is that they all show thickening of bone from infective osteitis and periostitis, and the walls of the cavities inside are composed of dense sclerosed bone which cannot collapse when pus is evacuated, and that there are often many small chambers and tracts of septic material in the bone which it is impossible to follow, as the dentist does in the analogous case of a carious tooth. The difficulty in diagnosis, too, in neglected cases has in the past been great, for a swelling at the end of a long bone might be simple, tuberculous, syphilitic, or possibly malignant, and the presence of a sinus did not exclude a mixed, simple, and tuberculous infection, or syphilo-sepsis. These difficulties have in recent years, however, been greatly simplified, radiography, Wassermann's reaction, and the systematic bacteriological examination of discharges having cleared the ground considerably. More particularly in the bacteriology of these conditions have advances been made, and it is now known that chronic comparatively painless abscesses may be caused by staphylococci, streptococci, pneumococci, and the typhoid bacillus, morbid conditions which serum and vaccine therapy have been able considerably to ameliorate. Nevertheless, a large field still remains for the surgeon, and Mr. Charters J. Symonds is to be congratulated on taking up the subject in his address before the Medical Society of London, and introducing to its notice a new method which has the advantages of being simple as well as efficacious, allowing also the patient to walk about, a most important desideratum, especially in hospital cases. The method described is, after opening up the medulla with a gouge or trephine, to insert a metal tube of half-inch diameter, composed of silver, German silver, or aluminium, fitted with a flange externally, and, for convenience of reintroduction, supplied with a conical pilot of boxwood or German silver. The metal tube gives rise to no irritation, can be readily taken out, boiled, and reintroduced by the patient, and does not hinder him working. At the end of six or 12 months the tube can be reduced in size, and finally a solid metal rod, with a flat nail head, or a piece of thick silver wire with a bent-over end externally, can be left in. These solid drains, Mr. Symonds finds, answer very well and might perhaps be used after six months. Practically all that seems necessary is a vent for a small amount of secretion, and this can escape by the side of the rod. As an example one case may be quoted, that of a woman aged 42 years. At the age of 11 she had acute necrosis of the tibia on the left side and smaller foci at the lower end of the right femur and both humeri. At 39 years of age a small sequestrum separated from the right femur. When seen at the age of 42 she had a painful swelling at the lower end of the right tibia, present for three months, but with the limb occasionally painful for the previous ten years. The bone was trephined and thick creamy pus came from the central cavity. It was drained by a half-inch metal tube, and the patient was soon allowed to walk about. The tube gave no trouble, she took it out, and boiled it herself daily. A smaller tube was introduced at the end of 12 months, and meanwhile the swollen tibia slowly reduced in size. At the present time, nearly two years after, the bone appears to be normal. At the discussion that followed all the surgeons present condemned the usual treatment with rubber tubes and gauze packing. Injections of plaster-of-Paris were also said to be useless, though several surgeons indicated that they had had successes with soft bismuth paste, as advocated by Dr. Beck of Chicago. Injections of iodoform and spermaceti wax after a preliminary curettage were also advocated in certain cases, especially tuberculous, and when the bone would not be too much weakened by the treatment, removal of all the diseased tissue, allowing the soft parts to fall in over the deficiency, had its advocates. Nevertheless, that a new weapon in treatment had been presented seemed to be the general consensus of opinion at the meeting.

FATAL HEMIPLEGIA IN SECONDARY SYPHILIS FAILURE OF DIOXYDIAMIDOARSENOBENZOL.

THE acceptation of the treatment of syphilis by dioxydiamidoarsenobenzol has been very general, and that in many hands it has been found a remarkable remedy for causing the disappearance of the symptoms of syphilis, sometimes after the failure of ordinary treatment, cannot be gainsaid. Evidence of limitation of its powers is at present meagre, but it is to be hoped that failures with the remedy will be fully reported, so that the medical world may be fairly guided in its attitude. The following case, which was reported at a meeting of the Société Médicale des Hôpitaux of Paris on Nov. 4th by M. Georges Guillain and M. P. Ravaut, is an example of such failure, and is of interest on other grounds—the rarity of hemiplegia and death in the secondary period of syphilis. A woman, aged 28 years, was admitted into the Cochin Hospital on August 14th, 1910, suffering from left hemiplegia, which began on the previous evening. Twelve months previously she was treated at the Broca Hospital for a chancre. After a month she abandoned treatment against advice. On admission she was in a state of obnubilation with dysarthria. There was flaccid hemiplegia of the left limbs, but the face was involved only slightly. On the paralysed side the knee-jerk was feeble,

the abdominal reflex was abolished, Babinski's sign was present, and forced flexion of the toes caused reflex retraction of the lower limb (a phenomenon recently described by Marie and Foix in lesions of the pyramidal tract). There was incontinence of urine and fæces. The pupils reacted to light. Around the anus were condylomata. Lumbar puncture yielded clear fluid containing numerous lymphocytes and polynuclears, but with the ultra-microscope no spirochætæ could be seen. On the 15th, 16th, 17th, and 18th an injection of 2 centigrammes of biniodide of mercury was given. Slight improvement in the mental condition and in the paralysis took place. On the 19th some dioxydiamidoarsenobenzol was received from Professor Ehrlich and 0·45 gramme was injected. No toxic symptoms followed the injection and the condylomata diminished, but the mental condition and the hemiplegia appeared to be worse. On the days following the injection arsenic was found in the urine. Death took place on the 26th. The necropsy showed the absence of any cerebral hæmorrhage. There was a small focus of softening in the posterior segment of the right internal capsule, slightly involving the lenticular nucleus and optic thalamus. To the naked eye all the viscera were normal, but microscopic examination of the liver showed slight fatty degeneration. It is noteworthy that the patient was improving under the mercurial treatment before the injection of the dioxydiamidoarsenobenzol, and that the cause of the hemiplegia was not a gross incurable hæmorrhage but a small focus of softening. M. Guillain and M. Ravaut do not suggest that death occurred in consequence of the injection but in spite of it.

THE USE OF THE REVOLVER.

WE desire to express our deep sympathy with the relatives of the three policemen murdered by revolver shots recently in Houndsditch, with their wounded companions, and with the relatives of the latter. We need not recapitulate the facts attending a tragedy to which full publicity has been accorded in the public press, and which is fresh in the memory of all, in order to point out, as we desire to do once more, the extraordinary indifference of the legislature to the habitual carrying of firearms in this country by criminals and others. In the recent affray the only persons who were not at liberty to carry firearms, if they chose to do so, were the police, and it may be that what then happened will lead to the police force being better armed in future, at any rate, when their duties have to be carried out in dangerous localities, or in their being permitted to use firearms when such are employed against them. The general freedom of anyone who chooses to do so to carry a pistol in Great Britain has been a subject of frequent comment in THE LANCET, and we have called attention constantly to accidents, as well as crimes, due to what is apparently a common practice with certain classes of society. A futile Act of Parliament imposes upon the sale of these weapons certain restrictions which include the production of a ten-shilling licence by the purchaser. Anyone who has such a licence is entitled to walk about with a deadly weapon in his pocket, or, as far as we are aware, in his hand, as long as he does not otherwise transgress the law, and even if he has no licence at all he is only committing an offence affecting the national exchequer, for which the Inland Revenue authorities, if they detect him, are able to prosecute him and have him fined. In our opinion, the carrying of a revolver in any public place should render any person found guilty of doing so liable to severe penalties, not excluding imprisonment, with such exemption as may be required to meet the exigencies of military training. For the defence of a man's house he must be permitted to own a revolver, if he should desire to do so, but it might be advantageous to the community if, even as a preliminary to this, the householder were to be obliged to comply with suitable but not onerous conditions. A tax, heavy in proportion to the cost of the cheaper class of weapon, should keep out of the country a large number of revolvers now brought in from abroad, and should make the question of purchase a serious one for schoolboys and for the needier class of lunatics, irresponsible persons, and criminals. Here again exemptions affecting weapons to be used for military and naval purposes or in dangerous foreign countries could be framed without difficulty. The searching of persons suspected of infringing the law, or of introducing revolvers into the country without paying duty at the port, are matters which would follow as a matter of course. We do not claim that legislation upon the lines which we suggest would render such crimes as that which recently took place in Houndsditch impossible, but desire rather to protest against an easy-going indifference which renders them easy. The question of arming the police is one of some difficulty, and is not one upon which we feel called to express an opinion, except to point out, as we have done, the freedom permitted to the criminal to arm himself as he pleases.

THE TREATMENT OF DYSPHAGIA IN LARYNGEAL TUBERCULOSIS.

THE pain on swallowing which occurs in laryngeal tuberculosis constitutes one of the most distressing features of this condition, and often leads to severe emaciation from the deficient amount of food which the patients are able to swallow. In 1908 Dr. Hoffmann[1] of Munich recommended the injection of alcohol into the internal branch of the superior laryngeal nerve and described good results from this procedure. In 1909 Dr. Sturmann reported a case with severe dysphagia which was relieved by this method. Dr. J. Dundas Grant has recently recorded in THE LANCET[2] six cases which were selected for this treatment on account of the extreme severity of the pain. They seemed to him to justify its recommendation. An interesting paper was published by Dr. Gottfried Roth of Bad Reichenhall in the *Münchener Medizinische Wochenschrift* of Oct. 18th, recording his experience of this method of treatment, which he has employed in 33 cases. Of these, 23 were men and 10 were women, and all excepting three suffered also from advanced pulmonary tuberculosis as well as laryngeal. In half of the cases there was perichondritis of the epiglottis with ulceration, in the other half there were infiltrations and ulceration of the vocal cords. In 15 perichondritis and ulceration of the arytenoid cartilages were also present, and in 6 infiltration and ulceration of the posterior wall of the larynx. Dr. Roth found that alcohol injections were useful in cases where there was dysphagia, provided this was not due to changes in the pharyngeal mucous membranes or in the tonsils. In all of his cases the ordinary local anæsthetics had proved ineffective. Most of the patients found more pain and difficulty in swallowing liquids than solid or semi-solid food, and in some the swallowing of saliva caused great pain and discomfort. Most of them found it easier to swallow warm or lukewarm food, cold things tending to excite painful cough. Neither fever nor advanced cachexia contra-indicated the use of alcohol injections. The method of giving them is by means of Schlösser's alcohol syringe fitted with a special needle devised by Dr. Hoffmann. The patient should be recumbent with a pillow under the neck in order to stretch the soft tissues. A characteristic spot, tender to pressure, is easy to find between the hyoid bone and the thyroid cartilage, corresponding to the spot where the

[1] Münchener Medizinische Wochenschrift, No. 14, 1908.
[2] THE LANCET, June 25th, 1910, p. 1754.

internal branch of the superior laryngeal nerve pierces the thyro-hyoid membrane. This spot is usually present on the side corresponding to the laryngeal lesion, though in cases where the epiglottis or both arytenoids are affected tender spots are present on both sides. The skin over the tender area should be cleaned by means of alcohol and ether, and the larynx steadied by means of the thumb. The index finger applied to the tender spot serves as a guide, and the needle of the syringe is inserted for 1½ centimetres. It is then turned upwards and outwards. If the patient complains of severe pain radiating towards the ear, this may be taken as proof that the nerve has been reached. A small quantity of 85 per cent. alcohol heated to 45° C. is then cautiously injected, the amount being usually 1 gramme, though sometimes 1½ or even 2 grammes have been used. In most cases only one side was injected, but in two an injection was given on the opposite side immediately after the first. No serious unpleasant symptoms occurred after the injections. One patient developed a severe attack of coughing during the injection, so that the needle went into the subcutaneous tissue. This was followed by cutaneous emphysema, which disappeared after two days. One patient with advanced cachexia fainted after the injection. Sometimes pain in the ear and headache followed. The dysphagia was greatly relieved in all of the cases except one. The improvement occurred almost directly in a few of the cases, but in most it developed within one or two days after the injection, and lasted, on an average, seven days. In one case the improvement was permanent. Apart from this, the longest period of relief was 21 days. The shortest was one day. The injection appeared to have no effect whatever, either beneficial or otherwise, on the cough, but in some cases the hoarseness appeared to be less. Since the good effects only last, as a rule, about seven days, the injections have to be repeated, and in one of Dr. Roth's cases this was done five times. It is not suggested that this procedure has any curative value, or that it should be employed where local anæsthetics are effective. Dr. Roth is careful to suggest its use only in cases of advanced laryngeal disease where swallowing is difficult or almost impossible, and where local anæsthetics have failed. The condition of these patients is so grave and their sufferings are so severe that any procedure affording even temporary relief is welcome, if it can be shown that its employment does not cause unpleasant symptoms or after-effects.

CUTANEOUS DIPHTHERIA.

THE subject of cutaneous diphtheria does not appear to have received much attention in this country. A short time ago Dr. Alan B. Slater reported in our columns[1] a remarkable case of three years' duration. The patient was a girl, aged 13 years, whose body was covered with vesicles containing the diphtheria bacillus. The disease appeared to have begun as an acute attack of diphtheria of the conjunctivæ. The vesicles developed on the vulva, and subsequently on the body generally. In the *Boston Medical and Surgical Journal* of Nov. 10th Dr. E. H. Place has reported a case of fatal primary diphtheria of the skin. An infant, aged 7 months, was admitted into the Boston City Hospital on March 24th, 1908. She was breast-fed, and had always been well except for eczema of the pubic region, groins, and thighs, which dated from birth. Two days before admission swelling and redness became marked over the area of the abdomen, genitals, and thighs which was covered by the diaper. There was a considerable thin discharge. On examination the child was well developed and fairly well nourished. The nose, mouth, and throat were normal and there was no nasal discharge. The temperature was subnormal. The pulse was 140 and the first cardiac sound was softened. A few crackling râles were heard over the bases of the lungs. The skin of the lower third of the abdomen, vulva, perineum, anterior part of the buttocks, and upper part of the internal surfaces of the thighs was red, swollen, and covered with a greyish hyaline membrane which was firmly adherent and when forcibly removed left a granular area which bled easily. Scattered over this area were small variously shaped islands of normal skin. There were no vesicles or pustules. The treatment consisted in the administration of strychnine and 1200 units of antitoxin and the application of boric acid dressings. On the third day after admission the membrane was clearing rapidly, but there was no improvement in the general condition, and the heart's action was rapid and very weak. The child's colour became a peculiar grey and the first cardiac sound was almost imperceptible. Numerous crepitant râles were heard at the bases of the lungs and death occurred. Cultures from the skin showed typical diphtheria bacilli which were identified both by cultural tests and inoculation of animals. Cultures from the nose and throat were negative. The necropsy showed some hyperplasia of lymphoid tissue, "septic spleen," incipient bronchopneumonia, and pus in the middle ear. The source of infection could not be discovered. Evidently the disease was inoculated into the eczematous lesions by some attendant in washing the baby or changing her diapers. The onset of the diphtheria was masked by the previous eczema, and not until the disease was widespread was medical advice sought. Hence the severity of systemic symptoms. Dr. Place finds that diphtheria of the skin associated with diphtheria of the respiratory tract is not rare at the Boston City Hospital. It has been seen in the following forms during the last three years. 1. On the face and hands, appearing like impetigo contagiosa, less often with distinct membrane. Cultures show virulent diphtheria bacilli and both types clear rapidly under antitoxin. 2. On the auricle, chiefly the concha, extending from the middle ear; or behind the auricle inoculated upon the eczema so common in children. 3. Inoculated upon lupus vulgaris of the face after curetting. 4. In wounds and abscesses of the neck and face. 5. Inoculated upon varicella lesions, most commonly on the vulva or vagina.

[1] THE LANCET, Jan. 4th, 1908, p. 15.

WE regret to announce the death at the advanced age of 92 of Dr. James Edward Pollock, consulting physician to the Brompton Hospital for Consumption.

THE library and offices of the Royal Society of Medicine, 15, Cavendish-square, W. (temporary address), will be closed from Saturday, Dec. 24th, to Wednesday, Dec. 28th, both days inclusive.

THE BREAD AND FOOD REFORM LEAGUE.—Miss Yates, the honorary secretary, has received a letter from Lord Knollys conveying His Majesty's gracious approval of the work described in the report.

UNIVERSITY OF SHEFFIELD.—Mr. R. J. Pye-Smith having resigned the professorship of surgery, a resolution has been adopted accepting the resignation with great regret, and adding: "Mr. Pye-Smith, who is the senior member of the teaching staff, has been a teacher of surgery for 34 years, first in the old Medical School, next in the University College, and finally in the University, and the council desire to place on record their appreciation of the distinguished services which he has rendered to the cause of medical education in Sheffield."—Dr. E. W. Adams has been appointed lecturer in materia medica and assistant to the professor of materia medica, pharmacology, and therapeutics.

THE PRACTICAL STERILISATION OF POTABLE WATERS BY MEANS OF THE ULTRA-VIOLET RAYS OF LIGHT.

BY JOHN C. THRESH, M.D., D.SC. LOND.,
LECTURER ON PUBLIC HEALTH, LONDON HOSPITAL MEDICAL COLLEGE, E.;
AND
JOHN F. BEALE, M.R.C.S. ENG., D.P.H. OXON.,
DEMONSTRATOR OF PUBLIC HEALTH, LONDON HOSPITAL MEDICAL COLLEGE, E.

THE view generally held that water requires purification chiefly, if not exclusively, in order to prevent outbreaks of typhoid fever is probably erroneous. It has frequently been remarked that when a pure water-supply has replaced a polluted supply the prevalence of typhoid fever has decreased even when epidemics had not followed the use of the impure water. The town of Newark is a case in point. Prior to June, 1893, the supply was from the River Ouse, and the town was rarely free from typhoid fever. In the year mentioned water from the New Red Sandstone replaced the river water and immediately the prevalence of fever decreased. The following table shows the immediate and remarkable effect of the introduction of the pure water-supply:—

Cases of Typhoid Fever Notified each Six Months in the Borough of Newark-on-Trent for 3½ Years Preceding and 3½ Years Following the Introduction of a Pure Water-supply. The New Supply was laid on July, 1893.[1]

	January to June.	July to December.	Total.
1890	14	39	53
1891	60	65	125
1892	11	58	69
1893	50	28	78
1894	1	9	10
1895	2	6	8
1896	3	4	7

Total for 3½ years preceding introduction of pure water, 297.
Total for 3½ years following introduction of pure water, 53.

Recent observations, however, tend to demonstrate that a pure water-supply has a marked effect in reducing the mortality from other diseases, and Dr. Sedgwick and Dr. MacNutt of Boston have recently shown that this, which they call the Mills-Reincke phenomenon, has a basis on fact and is explained by Hazen's theorem that the substitution of a pure for an impure water-supply is followed almost invariably by a decrease in the general death-rate and by a special decrease in the death-rates from enteric fever, diarrhœa, phthisis, pneumonia, &c., and in infantile mortality also. The following table will serve as an illustration, as it enables us to compare the death-rates for two towns which are almost identical in character and in close proximity to each other, in one of which a pure water-supply was introduced, whilst the other continued to use its more or less impure supply:—

Death Rates per 100,000.[2]

—	1894–98 before filtration at Albany.	1900–04 after filtration at Albany.	Decrease.	Per cent. reduction of death-rates.
Albany.				
Typhoid fever	104	26	78	75
Diarrhœal diseases	125	53	72	57
Children under 5 years	606	309	297	49
Total deaths	2264	1868	378	17
Troy.				
Typhoid fever	57	57	0	0
Diarrhœal diseases	116	102	14	12
Children under 5 years	531	435	96	18
Total deaths	2157	2028	129	6

Remarks.—Filtered water was introduced into Albany in 1899. The water-supply of Troy has remained practically unchanged.

[1] Thresh: Water and Water-supplies, third edition, p. 162.
[2] Whipple: The Value of Pure Water, p. 10.

A study of the statistics for the borough of Newark-on-Trent, so far as they can be obtained from the Registrar-General's annual reports, shows the same marked decrease in the general death-rate after the introduction of the purer water-supply. The following figures are taken from the Registrar-General's returns, and when the corrections for variations in populations are made it is found that the average death-rate for the town during the five years preceding the one in which the pure sandstone water was introduced averaged 18·4, whilst in the five years following it was only 15·6, a result much like that observed at Albany, U.S.A. Only about 3 per cent. of this decrease could be attributed to enteric fever.

Year.	Population.	Total deaths registered.	Year.	Population.	Total deaths registered.
1888	14,083*	248	1894	14,571†	240
1889	—	269	1895	—	239
1890	—	278	1896	—	244
1891	14,571†	288	1897	—	218
1892	—	266	1898	—	275
1893	—	300	1901	16,077‡	—

* 1881 census. † 1891 census. ‡ 1901 census.

Assuming the correctness of this theorem the question of purification of public water-supplies becomes of enormously increased importance, since such purification will not merely prevent a few cases of enteric fever annually but it will effect a large annual saving of lives which otherwise would have been sacrificed, and especially of lives of young children.

During recent years many attempts have been made to improve upon the old, and where properly conducted excellent, system of purification by means of slow sand filtration. Most of these systems have been failures, but three remain which may play an important part in the purification of water in the future. These are sterilisation by means of (*a*) ozone, (*b*) chlorine, and (*c*) ultra-violet rays of light. The first, the ozone process, labours under the disadvantage of requiring an exceedingly complex electrical installation which requires specially skilled supervision. The second, or chlorine process, suffers temporarily from sentimental objections. When these are overcome, as doubtless they will be since such treated waters are now being used for public supplies, the process will probably be largely adopted, especially when a cheap supply of electricity is not available. The third is not subject to any of these disadvantages. Where electricity is available an installation of a very simple character requiring very little supervision can be laid down, and if the results already obtained can be maintained for long periods the process should have a great future before it, since it can be used for purifying the supply of a single house as well as for the purification of the supply to the largest city.

It has long been known that the invisible or ultra-violet rays of the solar spectrum are capable of producing marked chemical changes, and recent experiments have shown that rays of a certain wave length are much more powerful than those of shorter or longer length. The rays emitted by the Cooper Hewitt mercury vapour lamp are found to be particularly rich in these active rays, and in 1906 Nogier and Therenot demonstrated that the rays of this lamp exerted a marked bactericidal action. Nogier conceived the idea that the lamp might be ultilised for the sterilisation of water, and his further researches demonstrated that his idea was correct. The mercury lamp is used for the production of the rays, but it having been discovered that glass absorbed the specially active rays fused silica has been substituted for it. Nogier immerses the lamp in the water to be sterilised, but other forms of apparatus are made in which the water does not come in contact with the lamp.

A priori it would be imagined that, as the intensity of the action of the rays varies inversely as the square of the distance from the source of light, the immersed lamp should have a more powerful effect, and this is supported by the results of the experiments, which we have recently been able to conduct in the hospital laboratory. For the Nogier lamp it is also claimed: (1) that with a given amount of electrical current much more water can be sterilised than with an external lamp; (2) that the lamp being kept cool will last longer; and (3) that the apparatus can be made smaller, more compact, and automatic. The advocates of the external lamp say that the immersed lamp is more liable to fracture and that in time it will become covered

with calcareous deposit and lose its efficiency. On the other hand, it is affirmed that the difficulty which at first occurred from breakages has been surmounted, and that any calcareous deposit which may form can be easily removed with dilute acid, and it is alleged that the external lamp, on account of the heat engendered, becomes affected to such an extent that its sterilising effect is speedily decreased owing to some molecular change in the internal surface of the fused silica. Time, however, is necessary to demonstrate the truth or otherwise of these allegations.

The Nogier lamp has been severely tested in France. The small-sized machine used for this purpose, both by Miguel in Paris and by ourselves in London, consists of an aluminium cylinder about 12 inches long and 6 inches in diameter, containing a Cooper Hewitt quartz lamp with an internal diaphragm, which causes the water entering at one end to travel along the cylinder in close proximity to the lamp. After traversing the length of the lamp it passes away through an opening at the end opposite to the inlet. By a very ingenious arrangement no water can flow through the cylinder unless the lamp is glowing. The instant the current is cut off or the lamp ceases to glow the cylinder tips up and the flow of water ceases. It is practically impossible, therefore, to obtain water from the cylinder unless it has been submitted to the action of the ultra-violet rays. This small lamp is capable of purifying from 50 to 200 gallons of water per hour according to the original character of the water. Possibly more could be sterilised in some cases, but in our experiments we have been unable to obtain sufficient pressure from the London mains to force more than this quantity through it.

Miguel's experiments showed that in clear and bright water many bacteria are killed after from 5 to 20 seconds' exposure to the ultra-violet rays, and that the most resistant spore-bearing bacteria were destroyed in from 30 to 60 seconds. The bacillus coli was killed in from 15 to 20 seconds, the bacillus typhosus in from 10 to 20 seconds, the cholera vibrio in from 10 to 15 seconds, &c.

Of the remarkable bactericidal action of the ultra-violet rays there could be no doubt, but it was observed that a faint turbidity in the water or the presence of traces of colloid matter greatly retarded the action. We were anxious, therefore, to test the apparatus with polluted waters such as might be used for potable purposes if they were efficiently sterilised. A small apparatus capable of treating 200 gallons per hour was therefore installed and connected with a large tank holding sufficient water for experimental purposes. Another connexion was also made with the water main, so that the apparatus could be kept working for hours at a stretch.

The first series of experiments was directed towards ascertaining whether the treated water suffered any change which could be detected by chemical analysis. In all the experiments the apparatus worked with an electrical current of 6 ampères and 130 volts, and it was found that the amount of current used was just under one Board of Trade unit per hour. For the chemical and physical tests the water was passed through the apparatus at the rate of only 10 gallons per hour, so as to obtain a maximum effect from the ultra-violet rays. The analysis showed that the chemical constituents of the water remained unchanged. The slight differences in the results were practically within the limits of error of a careful analysis. No ozone could be detected. It is improbable, therefore, that the sterilising effect is due to ozone, as some have surmised. One effect, however, was observed which is worth recording. One of the samples of water treated had a faint but decided odour suggestive of sewage, whereas the treated water was devoid of odour. The analytical results in this case were :—

	Untreated water.	Treated water.
Free ammonia, parts per 100,000 ...	0·0474	0·0436
Albuminoid ammonia	0·0188	0·0192

The difference in all other respects was *nil*. The very slight reduction in the free ammonia does not appear to be capable of explaining the disappearance of the odour. This was an exceedingly impure water, yet it was found that the apparatus practically sterilised it.

In passing through the steriliser the temperature of the water is slightly raised. When the water was travelling at the maximum rate, 200 gallons per hour, the rise in temperature varied from 0·2° to 0·4° C. When passing at the minimum rate used in the bacteriological experiments, 30 gallons per hour, the increase in temperature was 1·8° to 2·2° C. The bacteriological results were as follows :—

Experiment 1.—Water from main run into a dirty cistern and well stirred. Samples of treated water taken at half-hour intervals. Rate of flow 30 gallons per hour throughout. Under the head of "gelatin" is recorded the number of bacteria per c.c. capable of growing on jelly in four days at 20° C., and under "agar" the number of bacteria per c.c. growing in two days at 37° C. upon an agar medium.

—	Gelatin.	Agar.	B. coli.
Untreated water	3200	1180	Present in 100 c.c.
Treated water 1	0	0	Absent in 500 c.c.
,, ,, 2	2	3	,, ,,
,, ,, 3	4	0	,, ,,

The water therefore was practically sterilised and freed from the bacillus coli.

Experiment 2.—The tank was next filled with water and 0·5 per cent. of filtered sewage added. The untreated water had a faint odour of sewage. The treated samples were free from odour. The rate of flow varied from 11 to 60 gallons per hour. The pressure available did not permit of a larger quantity being passed through the apparatus.

—	Gelatin	Strepto-cocci.	B. coli.	B. enteritides sporogenes.
Untreated water	5500	In 10 c.c.	In 0·1 c.c.	In 100 c.c.
Treated water—rate of flow :				
11 gallons per hour	18	Absent in 110.	Absent in 636.	Absent in 500.
22 ,, ,,	10	,,	,,	,,
45 ,, ,,	16	,,	,,	,,
60 ,, ,,	23	,,	,,	,,

All these treated waters are of the highest degree of bacterial purity, though not sterile.

Experiment 3.—This experiment, or rather series of experiments, was spread over a period of several days. The apparatus was directly connected with the main in order to obtain sufficient pressure to work the apparatus at its maximum capacity. From time to time a sample of the water passing into the steriliser was collected for examination.

—	Gelatin	Agar.	B. coli.	Rate of flow per hour.
Untreated water ...	140	80	In 100 c.c.	—
Average treated water	5	1	Absent in 500.	80 gallons.
Untreated water ...	62	34	In 20 c.c.	—
Treated water	2	0	Absent in 500.	80 gallons.
,, ,,	4	2	,, ,,	100 ,,
,, ,,	3·5	1·5	,, ,,	120 ,,
Untreated water... ...	110	48	In 100 c.c.	—
Treated water	6	3	Absent in 500.	140 gallons.
,, ,,	6	3	,, ,,	160 ,,
,, ,,	6	3	,, ,,	200 ,,

The last average (200 gallons per hour) does not include one abnormal result, the treated water giving 50 bacteria on gelatin and 18 in agar per c.c. Even with this exceptional number of bacteria the bacillus coli was absent in 500 c.c. of the treated water.

The whole of the results show that with a fairly clear and bright water the ultra-violet rays as applied in the apparatus employed produced a sterilising effect sufficiently marked to convert a dangerously polluted water into a safe potable water.

The extreme simplicity of the apparatus and its comparative cheapness both as to first cost and working, render it particularly suitable for purifying clear waters such as

are usually derived from wells, especially when electrical current is available. When turbid waters have to be treated, such as supplies from streams and river, prior filtration will be absolutely necessary to render the water bright. The apparatus could in such cases be connected with the outlet from a mechanical filter.

The experimental results thus far obtained are so encouraging that experiments on a very much larger scale are about to be commenced. There is little doubt that for small installations and for suitable waters when electrical current is available treatment with ultra-violet rays will be more economical than any other process yet devised, but it remains to be seen whether, under such circumstances, it will be able to compete with the chlorine process as now simplified and improved. It may be that under one set of circumstances one will be especially applicable, whilst under other circumstances the other will possess advantages. In any case it is no longer justifiable for any community to be supplied with water of a potentially dangerous character when by one or other of these processes potable waters can be practically sterilised and rendered safe at the cost of much less than a penny per 1000 gallons.

MOTORING NOTES.

BY C. T. W. HIRSCH, M.R.C.S. ENG., L.R.C.P. LOND.

An Alleged Custom of the Motor-car Hiring Trade.

IN a case recently heard by the Lord Chief Justice in the King's Bench Division the plaintiff sued a motor-car hiring company to recover damages for personal injury sustained through the alleged negligence of the defendant's chauffeur. It was alleged by the defence that the chauffeur was let with the car and became the servant of the hirer and not of the company, and that it was the custom of the trade that the hiring company took all risks, save and except liability for personal injuries to a person or persons hiring the car. The Lord Chief Justice, however, held that in such cases the chauffeur was the servant of the defendant, and that the company were liable for his negligence, if any, and that the alleged custom was of an extraordinary and most reaching kind. In the case in question, in which the car overturned as a result of excessive speed in taking a bend of the road, the plaintiff received a cut on the temple and other injuries, for which the jury awarded her £300 and costs. This case is certainly of interest, as it proves that when a car is hired with a driver the hiring company are liable for any accident the result of negligence on the part of the chauffeur.

The Ashcroft Combination Valve Grinder.

One of the most likely causes of loss of power in a motor is bad compression. If this is not due to gummed piston rings the valves are probably leaking. The former cause is easily diagnosed by pulling the starting handle round and listening, if needful with a stethoscope, for a hiss in the crank case. Should this not be detected, the conclusion, if the compression is bad, is pitted valves or leakage round the valve caps or sparking plugs. Placing oil round these parts and again pulling the engine round will reveal by the appearance of bubbles if the latter is the seat of lesion, and if not then the valves should be ground in. Fine emery or ground glass is usually employed, and the Ashcroft grinder will be found an improvement on the generally employed screw-driver. The action of this tool is an oscillating one, with the arc of oscillation gradually advancing to the right; this prevents the cutting of grooves, and results in the valve seat being ground smoothly and absolutely true. Two sizes of small coil springs are also supplied, which if placed under the valve head during the operation facilitate frequent raising of the valve and thus allow inspection as well as new grit and oil to run on the bearing surfaces; this renders the grinding more rapid while ensuring a better seat. The tool can also be used as a breast drill or as a ratchet for tapping and drilling, or for inserting or removing screws in awkward or inaccessible positions, and it is fitted with a chuck for either square or taper shank drills. It is sold by Messrs. Brown Brothers, Limited, of Great Eastern-street, London.

The Petrol Rebate.

In a recent number of *Justice of the Peace*, in answer to the question can a medical man, who obtains the allowance of half the duty on his car, be able to employ his automobile for other than professional purposes, the opinion was given that doing so would destroy the right to the exemption. This matter has now been brought to the notice of the Treasury, and the Lords Commissioners are of opinion that if a car is kept for the purposes of the profession it can be used for other purposes than merely conveying the doctor to and from his patients. Though this broad reading is pleasant, as far as it permits a doctor to take an occasional holiday in his car, it is well to bear in mind that a good many insurance policies do not cover risks that may occur when cars are employed for election purposes. For the present elections are over, while the experiences of some who have lent cars for them cannot be very pleasant.

The Automobile Association and the Motor Union.

The agreement for the amalgamation of these two bodies has now been concluded. The subscription will be £2 2*s.* a year, but members of the Motor Union who have not hitherto been members of the Automobile Association will be entitled to continue their subscription for a period of three years at the present rate of £1 1*s.* per annum. The badge is to be in the shape of the present Motor Union one, but in addition to the letter M with wings AA will also be in the centre. The Earl of Lonsdale will be President; Mr. Joynson-Hicks, chairman; Mr. Stenson Cooke, secretary; and Mr. A. B. E. Cheeseman, technical manager.

The Diagnosis of Clattering "Bruits."

The ability of analysing an adventitious noise in a car is much like "spotting" a cardiac lesion. The normal car has a steady quiet hum when running as our hearts have their "lubb-dup." When there is a variation it may mean the presence of some disorder, which, if not detected quickly, may have a serious termination. Among the causes that make a motor "talk" should be considered want of lubrication of bearings, both on engine and in gearbox and transmission shaft, slackness of nuts allowing play, and worn bearings. It should also be remembered that a loose mud-guard or even lamp may produce sounds that terrify; a slack undershield may have like results. The parts especially to investigate, if the engine begins to "talk," are: The clutch fork—is it worn? Does it rattle? Is the universal joint in the cardan shaft worn, or is the tort in the gearbox? Having eliminated rattling of kit or tools, lamps, lamp-brackets, and undershield, the engine should be run with the clutch out. If the sound is absent, it is probably either the clutch-fork, gearbox-bearing, or universal joint in the propeller shaft that is at fault.

Motor Road Maps.

The medical motorist who sends his name and address to Horlick's Malted Milk Company, Slough, Bucks, will be presented gratis with a set of three maps—England, Scotland, and Ireland, each in a separate case—on a 12 miles to an inch scale, showing the first- and second- class motoring roads and other roads, and the distances between the various towns.

The Adler Doctor's Car.

A good many professional men have asked me about this car, which attracted attention at the recent show, and concerning which I wrote in THE LANCET of Feb. 19th, 1910. My opinion of most automobiles on which I report is based on the result of the impression I obtain by running them a few hundred miles in the day or two during which they are at my disposal. The best proof of the use of a motor for a doctor is the actual results obtained by an owner during a prolonged period, when it is employed every day. The following letter, from Mr. Leslie, of "Fairwater," Evesham, may be of help to any who are considering the purchase of one of these really excellent machines:—

I think that a special word should be said for the 12-h.p. Adler as a car especially suitable for our work. Its reliability is truly marvellous and the class of workmanship is of the highest order. My two-seated 12-h.p. Adler with Morgan body I purchased in August, 1909, and during the time I have had it it has run close on 15,000 miles. I have not yet had an involuntary stop nor has a single adjustment had to be made, not even a nut has had to be tightened. The only renewal has been the brake jaws of the back wheel brake, which necessarily got worn from constant use. With the exception of this trifling replacement the car has not cost me a penny in repairs. On average roads I get 30 miles to the gallon. The car is practically silent on top speed and is the greatest pleasure to drive. Fitted with a Morgan body it is unusually smart; mine is of the semi-racing type. I have no hesitation in recommending the car to my professional brethren, and I do not think it could be excelled in reliability, general excellence, and cheapness in running.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

Distribution of Awards.

A MEETING of the Governors and General Council of King Edward's Hospital Fund for London was held on Dec. 14th at St. James's Palace, when the Duke of TECK presided.

His Serene Highness, in opening the proceedings, referred to the irreparable loss which the Fund had suffered by the death of its Founder and Patron, and in acknowledging, on behalf of himself, Lord Iveagh, and the Speaker of the House of Commons, their appointment as Governors of the Fund, expressed their intention to endeavour to follow the high tradition which had been established by the late King Edward and His present Majesty until the time came for the appointment of a new Royal President.

In the absence of Lord Rothschild (honorary treasurer), Lord REVELSTOKE reported that the amount received by the Fund to Dec. 10th, after payment of expenses, was £146,584 10*s*. The Fund had also received an unusual legacy during the year in the residue of the estate of Mr. Matyear, consisting of market garden property in Fulham.

Sir HENRY BURDETT said that at present he was not in a position to state precisely the sum that the League of Mercy would be able to give. When, however, the time arrived for drawing the cheque the Governors and Council of that Fund would, he believed, have good reason to be satisfied with the amount.

The Chairman of the Distribution Committee (Sir WILLIAM CHURCH) read the report of that committee. He stated that this year the sum of £150,000 would be distributed amongst the London hospitals, as against £147,000 in 1909. The number of hospitals applying for grants was 106, as against 104 last year. The committee recommended that the policy of setting aside grants towards amalgamation of the throat, nose, and ear hospitals in place of separate awards to any of the four institutions concerned should still be continued, and they voted £2000 this year for this purpose. No general scheme of amalgamation had been submitted by the hospitals during the year for the consideration of the Fund, and the committee would have recommended that the grant of £3000 made in 1908 should lapse in accordance with the condition attaching to grants which remain for two years unapplied, had they not been informed that the possibility of a practicable arrangement between certain of the hospitals was under consideration. They accordingly recommended that the grant of £3000 made in 1908 should be renewed for this year. The total sum held in reserve, in respect of annual grants, towards a general scheme of amalgamation now amounted to £7500 in addition to the capital grant, amounting under certain conditions to at least £10,000, promised by the Fund. The following grants made in 1908 for special purposes and retained in accordance with the practice of the Fund still remained unapplied:—General Lying-in Hospital, £100 to surgical equipment; London Lock Hospital, £1500, being the balance of a grant to the rebuilding of the out-patient department in Dean-street; Miller General Hospital, £989, being the balance of a grant to extension; West End Hospital for Diseases of the Nervous System, £1000, granted to rebuilding, subject to the scheme being submitted and approved; Wimbledon Cottage Hospital, £50 to improvements. The committee recommended that these unpaid grants should be renewed, with the exception of the grant to the West End Hospital, which it was recommended should lapse. The committee state that they have taken care that the needs of the poorer districts in the outlying parts of London should receive their due share of consideration. In addition to maintenance grants on the scale determined by the circumstances of the various hospitals, the committee have recommended capital grants in several cases where schemes of improvement have been sanctioned. Amongst these are final grants of £1000 to the rebuilding of St. Mary's Hospital for Women and Children, Plaistow, and £5000 to the extension of the West Ham Hospital.

The committee were glad to learn that a scheme had been prepared by the Convalescent Homes Committee for rendering a certain number of beds in consumption sanatoriums in the country available for patients direct from London hospitals, more especially from consumption hospitals which had no country branches of their own, and viewed with special satisfaction the facilities possessed by consumption hospitals which had country branches for the transfer of suitable cases to surroundings more favourable to recovery. In the case of St. George's Hospital "the committee had had under their special consideration the appearance, in the general accounts of the hospital for 1909, of certain payments to the school which were stated to be for work done for the hospital and which were formerly paid out of a discretionary fund. The inquiries made by the committee as to the legitimacy of this change confirmed the statement in the annual report of the hospital that the payments in question were made on account of definite work done, chiefly pathological and bacteriological examinations, in connexion with the actual treatment of patients. That is, the payments were for the kind of work which is described in Appendix III. of the Report of Sir Edward Fry's Committee as work which would have to be paid for in any case, and which would have to be taken into account in assessing the payments and receipts on either side.[1] Such work, moreover, differs entirely from the general benefits, described in paragraphs 13 to 22 of the report as being conferred by medical schools on hospitals, and as being fairly set off against the benefits conferred by the hospitals on the schools. The opinion of the Fund that, on the principles laid down by Sir Edward Fry's Committee, specific payments for such definite work done in respect of the treatment of patients, whether made to the school or to any other agency, could be charged to the general funds of the hospital, while no other payments to the school could be so charged, was notified to St. George's, in reply to a question from the hospital, by the Executive Committee in March, 1909. But on looking into the method by which the amount fairly chargeable to the hospital on account of this work had been arrived at, the Distribution Committee came to the conclusion that the apportionment of the expenses of the laboratories as between the treatment of patients and medical education required investigation, and they have invited the hospital to submit further details in order that the Committee may satisfy themselves that the payment made to the school bears a proper proportion to such definite work done for the hospital." In the meantime they recommend that the grant to the hospital this year should be retained until the Fund is satisfied that the financial relations between hospital and school are in accordance with the principles intimated by the Fund in March, 1909, and that the general account of the hospital in respect of 1909, as well as 1910, is clear from any payment on account of medical education.

Mr. WILLIAM LATHAM, K.C., chairman of the Convalescent Homes Committee, read the report of that committee. It showed that the sum of £5000 would be apportioned amongst convalescent homes and consumption sanatoriums. The amount distributed in 1909 was £4000, which included £1000 brought forward from 1908. The number of applications eligible for consideration amounted to 45 from convalescent homes and 8 from consumption sanatoriums, as against 37 and 4 respectively last year. The committee reported that they had been able to make arrangements in the case of three sanatoriums for beds to be placed at the disposal of London hospitals during the year 1911 in return for grants made by the Fund. The total number of beds thus secured amounted to 18, situated as follows: 2 beds at the Kelling Sanatorium, Norfolk; 6 beds at the Northampton Sanatorium, Creaton, Northants; and 10 beds at the Devon and Cornwall Sanatorium, South Brent, Devon. In recommending the allocation of these country beds to hospitals in London the committee had taken the view that preference should be given (in order of relative size) to the two consumption hospitals which had no country branches, and that the rest of the beds should be divided between the two largest of the general hospitals which apply to the

[1] The following is an extract from this appendix, which the committee have adopted as part of their report:—"It must be remembered that, apart from these (i.e., the general services rendered by the Schools to the Hospitals), which are separately dealt with in the Report, par. 21, the Schools, in most cases, undertake many specific laboratory examinations solely for the purpose of helping the physicians and surgeons to form correct diagnoses in the exclusive interests of the patients, and that these would have to be paid for by the Hospitals in any case. Where such examinations are made in a laboratory entirely maintained by a school, it is obvious that, in any exact assessment of the payments and receipts, on either side, they would have to be taken into account."

Fund. They accordingly recommended the following allocation: 8 beds to the City of London Hospital for Diseases of the Chest, 4 beds to the Royal Hospital for Diseases of the Chest, 3 beds to the London Hospital, and 3 beds to Guy's Hospital.

The Duke of TECK, in moving the adoption of the reports and awards, said that the reports afforded gratifying evidence of the continued progress of the Fund. The invested capital was now very considerable, but the income from investments provided less than half the amount distributed, and for the balance reliance had to be made upon the support of the charitable public, including the contributions collected by the League of Mercy. Among the amounts received during the year His Serene Highness mentioned, with special gratitude, the sum of £500 received from His Majesty, the patron of the Fund, in augmentation, from £500 to £1000, of the annual subscription he gave when President; and also the annual subscription of £100, with which H.R.H. the Prince of Wales had signified his interest in the Fund. The receipts also included an annual subscription of £5000 from Mr. Walter Morrison, and an anonymous donation of £10,000. The amount distributed had again been increased. Last year it reached, for the first time, a total sum of £150,000. This year £150,000 had been given to the hospitals alone, making, with £5000 to consumption sanatoriums and convalescent homes, a total of £155,000. The original goal of £150,000 had thus been left behind, and in response to the necessarily increasing demands a fresh advance had been begun. He particularly drew attention to the grants for special purposes. In practically every case, he said, where such a grant was at all large a scheme had been submitted by the hospital and carefully examined by the committee. This practice ensured that the Fund knew and approved of the manner in which the grant was going to be spent. Referring to questions that had arisen during the past two years as to the exact method of applying the recommendations of Sir Edward Fry's committee on the subject of hospitals and medical schools, His Serene Highness said it was, and had always been, the intention of the Fund to carry out the recommendations of that committee in the letter and in the spirit. The report of the Convalescent Homes Committee showed that the scheme which they originated for placing beds at consumption sanatoriums by means of grants from the Fund, at the disposal of patients in London Hospitals who were urgently in need of country treatment, had now taken practical shape. A beginning could be made on Jan. 1st next, with 18 beds in three different sanatoriums. It was proposed that most of these beds should be allotted to the two consumption hospitals which had no country branches of their own, and the remainder to two of the largest general hospitals. It was not possible to secure any more beds without making capital grants. But the committee proposed to consider applications for capital grants another year. If the scheme on its present small scale proved successful, it could be thus enlarged. The committee would, of course, take due precautions to ensure that any arrangement made should be fair to London, while the sanatoriums would doubtless see that it was fair to the localities for which they were originally founded.

The work of the Executive Committee had included this year a consideration of the question of hospital contracts. It had often been suggested that it would be an advantage for the hospitals of London to enter into joint contracts, and thus secure the advantages of purchasing on a larger scale than they could do as separate buyers. Last year a scheme was actually started in New York, and the Executive Committee appointed a subcommittee to inquire into the subject and ascertain whether the Fund could usefully take any action in the matter. The report of this subcommittee, of which Mr. John G. Griffiths acted as chairman, had recently been issued, and he hoped that the careful statement which it contained of the possible advantages and difficulties of coöperative purchase by groups of independent voluntary hospitals might be of assistance to the hospitals which were now trying this experiment, or which might be thinking of doing so; and that it might satisfy the public that the possibilities of economy in this direction had not been overlooked.

The CHIEF RABBI (the Rev. Dr. ADLER) seconded the adoption of the reports, which was put and carried.

The Duke of TECK, before announcing the appointments for the coming year, alluded to the great loss the Fund had sustained during the year in the death of Mr. Hugh C. Smith, who had served for so many years as a trustee, member of the council, chairman of the Executive Committee, and latterly member of Finance Committee, and also to the loss by death of the very valuable services of Mr. John Langton as one of the visitors of the Fund. With regard to the general council, it was proposed to reappoint the whole of the members as at present, and the same with the Executive Committee and the Finance Committee. On the Distribution and Convalescent Homes Committees it was proposed to reappoint the present members except Mr. Partington, who had been prevented by ill-health from taking a full share in the very arduous work of the Distribution Committee. He would join the Convalescent Homes Committee, as would also Sir William Bennett, and Mr. Leonard Cohen would be appointed to the Distribution Committee.

The services of three eminent Commissioners—Lord Mersey, who would be chairman, Lord Northcote, and the Bishop of Stepney—had been secured for the committee which would inquire into the out-patient question and would begin work early in 1911. The Executive Committee had recommended the following terms of reference:—

> To consider and report generally as to the circumstances and conditions under which patients are admitted to the casualty and out-patient departments of the London voluntary hospitals, and especially as to what precautions are taken to prevent the admission of persons who are unsuitable, and as to whether adequate provision is made for the admission of such persons as are suitable; and to make such recommendations as may seem to them desirable.

A vote of thanks to the Duke of Teck for presiding concluded the proceedings.

MEDICINE AND THE LAW.

Tuberculosis and Milk-supply: Question of Procedure raised at Sunderland.

AT Sunderland recently an inquiry was held by Mr. T. R. Colquhoun Dill, barrister-at-law, on behalf of the Board of Agriculture and Fisheries, to whom a farmer had appealed against an order made by the Sunderland corporation. The appellant supplied milk to a dairy in Sunderland, as did other farmers also. A sample of milk was taken in the street by an inspector under the corporation from a can belonging to the dairy in question and was found on analysis to contain the bacilli of tuberculosis. The dairyman stated that the milk from which the sample in question came was from the appellant's farm, and it was accordingly visited by the medical officer of health of the corporation, who was accompanied by a veterinary surgeon. The farmer owned a herd of 20 cows, from whose milk he supplied the dairy, and 16 of these had already been submitted to the tuberculin test with negative results. The remaining four had not been so tested, and the veterinary surgeon, who detected in three of them no signs of tuberculous disease, observed what he considered to be suspicious indications affecting the udder of the fourth. The corporation, which was acting upon powers given it by a local Act of Parliament obtained by the borough of Sunderland in 1907, gave notice to the farmer to appear before its health committee, and when he did not do so made an order prohibiting the sending of the milk of any of the four cows referred to above into the borough. The farmer then had the tuberculin test applied in the case of the cow with the suspected udder, when it was found that there was no reason to believe that she was affected with tuberculosis. This he communicated to the corporation, which rescinded the order, so far as it affected the cow in question, leaving it as before in the case of the other three; and against the order, as applied to them, the farmer appealed. It was argued upon his behalf before Mr. Dill that the procedure adopted was wrong, as it cast upon the farmer the burden of proving that the three cows remaining under the order were free from tuberculosis, without the corporation having first made out a *primâ facie* case that they were diseased. It was pointed out that the Act under which the proceedings had been taken gave power to inspect the cows and to take samples of milk, and it was submitted that if after this the medical officer of health was of the opinion that tuberculous disease was caused, or likely to be caused, to persons residing in the borough and consuming the milk, a notice might then be served on the owner of the cows to

attend before the health committee to show cause why an order should not be made prohibiting him from supplying milk in the borough. A notice had, as has been stated, been given to the farmer, who had not appeared in response to it, and it was argued on his behalf that the necessary conditions precedent to giving it and to making the order had not been fulfilled. On behalf of the respondents it was argued that they had complied with the Act of Parliament, and had made an entry upon the farmer's premises and an inspection as required of them upon an order obtained from a magistrate, but that a passage in the Act, to which Mr. Dill drew the attention of the town clerk, which provides that "the medical officer of health may require" a cow to be milked in his presence and a sample to be taken for analysis, merely permitted this to be done, but did not render it necessary. It was urged that the corporation as custodian of the public health, was entitled to act as it had done, and if it entertained a suspicion with regard to the three cows to continue its order against them until the appellant had shown that the animals were free from disease. After hearing the arguments and evidence adduced by both sides, Mr. Dill intimated that he would report to the Board of Agriculture and Fisheries and that the reply of the Board would follow in due course. The decision of the Board of Agriculture and Fisheries has since been communicated to the parties, and is to the effect that the order of the corporation was made without due cause in so far as it related to the three cows in question. The Board further found that the appellant was not in default and withdrew the order made against him, the costs of the appeal to be paid by the corporation.

Action against a Farm Colony for the Loss of a Leg.

A German named Max Wedler brought an action recently in the High Court against the council and committee of management of a German Industrial and Farm Colony at Ware for damages for negligence and breach of duty on their part. He had been admitted to the colony and set to perform some digging after being supplied with shoes. He stated that he complained of these that they were too large, but was compelled to wear them and was refused permission to wear his own, that while he was digging, earth got into the shoes and chafed his foot, and that on his informing Mr. Mann, the manager, he was sent by him to a man called Theil, stated to be a "pensioner" in connexion with the colony, who gave him a plaster. Theil also told him that he was suffering from gout and massaged his foot. Later, the plaintiff become seriously ill, but according to his statement, a medical man who was called in to see him did not examine his foot. Eventually he was sent to the Herts County Hospital, where it was found that he was suffering from osteomyelitis, owing to which his leg was amputated below the knee; and the nature of the case was explained to the jury by Dr. C. E. Shelly, senior medical officer of the hospital. The same witness expressed the opinion that an abrasion of the skin such as that described would supply a very obvious means for the infection which had taken place. Counsel on behalf of the plaintiff contended that he had two causes of action—the neglect by the defendants of a duty to supply him with clothing reasonably suited for the work he had to do, the evidence being that the shoes were too large and were responsible for the injury which caused his condition; and, secondly, the treatment given by Theil. Counsel for the defence did not rely upon the defence of common employment on the part of the plaintiff and Theil, but submitted that apart from that there was no case for the defendants to answer. This view was taken by Mr. Justice A. T. Lawrence, who held that there was no evidence of negligence against the defendants; there might possibly be a case against Mann and Theil, who might, however, have an answer to it. Judgment was accordingly given for the defendants without the case being submitted to the jury.

A RAILWAY MEDICAL SCHOOL IN MANCHURIA.—We learn from a Shanghai correspondent that the South Manchurian Railway Company is contemplating the establishment of a medical school at Dairien, Manchuria, where instruction will be given in all the most modern methods of medicine and surgery.

CENTRAL MIDWIVES BOARD.

SPECIAL meetings of the Central Midwives Board were held on Dec. 13th and 15th, at Caxton House, Westminster, Sir FRANCIS H. CHAMPNEYS being in the chair.

The Board considered the following charges, amongst others, against the midwives whose names are given below, and ordered them to be struck off the roll. For not explaining that the case was one in which the attendance of a registered medical practitioner was required, nor handing to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E. 19 (5):—Margaret Aldred, being in attendance as a midwife at a confinement, the child having been born prematurely, and being asphyxiated and feeble. Hannah Arrowsmith, being in attendance as a midwife at a confinement, the patient suffering from headache and sickness and from high temperature. Ellen Culshaw, being in attendance as a midwife at a confinement, the patient being ill, suffering from abdominal pains and high temperature, with diarrhœa and vomiting. Sarah Chapman, being in attendance as a midwife at a confinement, rigor occurring with persistently offensive lochia and a high temperature. Mary Hannah Davis, being in attendance as a midwife at a confinement, the child being ill. Mary Jane Dickenson, the patient suffering from bronchitis. Adelaide Harker, being in attendance as a midwife at a confinement, the child suffering from inflammation of the eyes. Kate Martin, being in attendance as a midwife at a confinement, the patient suffering from a serious rupture of the perineum. Mary Ann Miles, being in attendance as a midwife at a confinement, the child suffering from inflammation of the eyes. The following were also struck off the roll for the reasons given in each case:—Martha Holland, that she was convicted at the Oxford City police-court of having been found drunk and incapable on a public highway. Beatrice Inscoe, that she persistently refused to submit to the reasonable supervision and inspection of the local supervising authority or to conform to the rules of the Board, and with intent to evade such supervision and inspection she frequently changed her address without notifying the local supervising authority as required by Rule E. 20. Emily Jones, that being in regular attendance as a nurse upon a patient suffering from uterine cancer, she nevertheless carried on her practice as a midwife, contrary to the provisions of Rule E. 16, and without having undergone disinfection to the satisfaction of the local supervising authority as required by Rule E. 5. Marian Phillis McCormac, that being in attendance at a confinement she was under the influence of alcohol when she delivered the patient; after the delivery of the placenta she failed to remove it from the room as required by Rule E. 10, but left it under the bed until next day; and she was again under the influence of alcohol and unable to speak clearly when she visited the patient on the seventh day after the confinement. Edith May Dalchow, that at the Aylesbury petty sessions she pleaded guilty to a felony and was sentenced to one month's imprisonment. Sarah Susannah Emptage, that being in attendance as a midwife at a confinement she failed to adopt the antiseptic precautions required by Rules E. 3 and 7; she washed the baby's eyes with the water it had been bathed in, she washed the patient with the same water and rag as she had used for the baby, and she did not take the patient's temperature at any time. Sarah Flitton, that being in attendance as a midwife at a confinement she did not take any antiseptic precautions whatever; she was uncleanly in her person, house, and clothing; she never employed antiseptics, being ignorant of how to use them; and she never took the temperature of her patients, not understanding the use of a clinical thermometer. Elizabeth Jane Haines, that she persistently neglected to make herself acquainted with the obligations of the rules of the Board. Julie Mitchell, that she was irregular in her attendance on her patients during the lying-in period, and that she persistently failed to conform to the directions of the local supervising authority. Amelia Williams and Mercy Ann Wilson, that notwithstanding repeated warnings they neglected and refused to comply with the rules of the Board and the directions of the local supervising authority. Catherine Charlton, that being in attendance as a midwife at a confinement she entered in her register that two children were

full time and of good health, well knowing that these statements were false, and that one child had died two days before the date of the entry. Esther Green, that being in attendance as a midwife at a confinement she took the patient's temperature once only, and failed to attend to the cleanliness and comfort of the patient as required by Rule E. 11. Elizabeth Murray, that being in attendance as a midwife at a confinement she falsely entered in her register of cases that the condition of the mother on the date of her last visit was "moderate," whereas she was dead.

The following were censured after charges against them had been considered:—Jane Carroll, Sarah Dean, Sarah Bath, Sarah Elizabeth Brown, Ellen Gentle, Martha Howard, Alice Waters, and Barbara Young.

The following were cautioned after charges against them had been considered:—Emma Gleeson and Sarah Linton.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeons: E. B. Townsend and F. D. Lumley to the *President*, for three months' course of hospital study; H. W. Finlayson to the *Victory*, for R.N. Barracks; E. J. Finch to the *Blake;* and C. S. Facey to the *Warrior*. Staff-Surgeons: J. A. Forrest, H. R. Gardner, N. J. Roche, P. G. Williams, J. G. Peebles, and W. E. Gribbell to the *President*, additional, for three months' course of hospital study; C. J. E. Cock to the *Thames;* O. Rees to the *St. George;* J. K. Raymond to the *Foresight*, A. K. Smith-Shand to the *Natal;* H. H. Pearse, L. E. Dartnell, S. Conner, R. Waterfield, G. E. Macleod, and F. C. B. Gittings, to the *President* for three months' course of hospital study; and J. Thornhill to the *Vivid*. Surgeons: C. H. Dawe to the *Pembroke;* S. H. Vickers to the *King Alfred;* J. A. Thompson to the *Pembroke;* F. M. V. Smith, E. B. Kenny, L. C. E. Murphy, and H. B. German to the *President*, for three months' course of hospital study; and G. R. McCowen to the *Victory*, additional, for disposal.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel R. H. Hall, from Colchester, has been appointed Senior Medical Officer at Bermuda, in succession to Colonel J. C. Culling, who has taken up duty as Principal Medical Officer of the Western Command at Chester. Lieutenant-Colonel G. Cree, on arrival home from India, has been posted to the Eastern Command and appointed Medical Inspector of Recruits, vice Lieutenant-Colonel G. E. Hale, D.S.O. Lieutenant-Colonel J. Maher, from Wynberg, has been appointed to the medical charge of Queen Alexandra's Military Hospital, Grosvenor-road. Lieutenant-Colonel F. W. C. Jones, from Tidworth Park, has embarked in the transport s.s. *Plassy* for a tour of service in India. Lieutenant-Colonel J. R. Forrest has been transferred from Bullevant to Cork. Lieutenant-Colonel W. G. Birrell has taken over medical charge of the Royal Herbert Hospital at Woolwich, in succession to Lieutenant-Colonel W. Dick. Major H. Herrick has been appointed to the command of the Station Hospital, Hyderabad, Sind, vice Captain P. P. O'Keefe, who has been transferred to the Station Hospital at Roorkee. Major G. B. Stanistreet, from Salisbury, has been posted to the London District. Major F. J. C. Heffernan, on completion of a tour of service in India, has been appointed Recruiting Medical Officer, London District. Major G. A. Moore has been placed in medical charge of the Military Families Hospital at Chatham. Major H. V. Prynne has been appointed Medical Officer at the Royal Military Academy, Woolwich. Major W. B. Winkfield, Captain C. H. Furnivall, and Captain G. F. Rugg have embarked on the transport s.s. *Plassy* for a tour of service in India. The following officers (Captains) have joined at the Royal Army Medical College for a course of instruction for promotion to the rank of Major: W. Wiley, H. Harding, M. F. Grant, M. D. Ahern, H. C. Winckworth, R. J. B. Buchanan, H. H. A. Emerson, A. M. Rose, P. Farrant, C. J. Wyatt, and M. G. Dill. Captain A. M. MacLaughlin has been appointed Specialist Sanitary Officer to the Scottish Command. Captain W. M. B. Sparkes has been placed in Medical Charge of the Staff and Departments at Dublin. Captain J. W. West, Captain S. M. Adye-Curran, and Captain J. H. Spencer have arrived in India for duty. Captain T. S. Coates has been appointed Medical Officer at the Royal Arsenal, Woolwich. Captain W. D. C. Kelly has taken over the duties of Specialist in Advanced Operative Surgery at Dublin. Captain E. J. H. Luxmoore, on arrival home from India, has been posted to the Eastern Command. Lieutenant A. G. Jones, from Parkhouse Camp, has joined at Tidworth Park. Lieutenant H. G. Robertson has been transferred from Sheffield to Richmond.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel H. B. Melville, civil surgeon of Simla, has been appointed to the medical charge of the Army Headquarters Staff and Establishments during the absence of Captain A. E. Lister. Lieutenant-Colonel F. J. Dewes, civil surgeon at Shwebo, has been granted combined leave and furlough home from India for two years. The services of Lieutenant-Colonel J. A. Cunningham, civil surgeon at Lahore and professor of forensic medicine and toxicology at the Medical College, Lahore, have been placed at the disposal of the Government of India. Lieutenant-Colonel D. St. J. D. Grant has been appointed to officiate as Principal Medical Officer of the Sirhind and Jullundur Brigades in succession to Lieutenant-Colonel J. W. Rodgers. Lieutenant-Colonel A. L. Duke has been confirmed in his appointment as First-class Agency Surgeon and Administrative Medical Officer of the North-Western Frontier Province. Major W. Lethbridge, civil surgeon of Wana, has been appointed by the Foreign Department of the Government of India Agency Surgeon, Mewar Bhil Corps, vice Captain L. J. M. Deas, proceeding on leave. Major H. A. Smith, civil surgeon of Agra, has been nominated as an Ordinary Fellow of the Allahabad University. Major F. L. Blenkinsop has had his leave extended by six months on medical certificate. Major J. M. Crawford, on return from leave, has been appointed Civil Surgeon at Benares. Captain R. M. Carter, Captain J. P. Cameron, Captain L. J. M. Deas, and Captain M. J. Quirke have arrived home from India on leave. Captain S. R. Godkin has been appointed Specialist in Advanced Operative Surgery to the Sixth (Poona) Division. Lieutenant M. A. Nicholson has embarked for India in the transport s.s. *Plassy* from Southampton.

BRITISH RED CROSS SOCIETY.

At a meeting of the City of London branch of the British Red Cross Society, which was held at the Mansion House on Dec. 16th under the presidency of the Lady Mayoress, it was reported that at the Prudential Assurance Company most successful classes had been established, and 115 of the men members of the staff and 46 of the lady members had already passed the first-aid examinations, and 42 other ladies were waiting to hear the result of their examinations. After the Christmas holidays it was expected that similar classes would be started in other City establishments.

ARMY AND NAVY MALE NURSES' CO-OPERATION.

A meeting of this association was held at the Royal Horticultural Hall, Westminster, on Dec. 16th, when Colonel Sir Edward Ward presided. He said that it was not generally realised that the army and navy were the only general training schools which certified fully-trained male nurses. Every year the services discharged fully-qualified nurses of exemplary character, whose training had been costly, and who, until the co-operation was founded, drifted into unsuitable channels where their skill found no market value. To give these men a start in life it was only necessary to make their professional nursing merits known. Sir William Allchin and Surgeon-General W. Babtie, V.C. (Deputy Director-General), also addressed the meeting, after which a bazaar and people's bargain sale was opened by Mrs. George Alexander.

VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING NOVEMBER, 1910.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious disease, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 5·0 per 1000 of the population, estimated at 4,872,702 persons in the middle of the year. In the three preceding months the rates were 3·9, 5·3, and 5 9 per 1000 respectively. The lowest rates last month were recorded in Paddington, Kensington,

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING NOVEMBER, 1910.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1910.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.		
LONDON	4,872,702	—	996	668	—	154	3	29	493	4	2347	5·0	—	409	21	56	45	—	23	—	118	672	1·4	7742	17·4
West Districts.																									
Paddington	153,004	—	22	9	—	5	—	1	10	1	48	3·3	—	7	—	—	—	—	—	—	9	16	1·1	204	14·8
Kensington	184,635	—	26	14	—	1	—	2	12	—	55	3·1	—	10	—	1	3	—	—	—	—	14	0·8	272	16·6
Hammersmith	127,413	—	29	25	—	3	—	1	8	—	66	5·4	—	19	1	4	4	—	1	—	2	31	2·5	192	16·3
Fulham	181,282	—	30	37	—	3	1	1	15	—	87	5·0	—	14	—	3	3	—	1	—	1	22	1·3	243	14·6
Chelsea	75,457	—	7	18	—	1	—	—	1	—	27	3·7	—	1	—	1	—	—	—	—	—	2	0·3	95	13·6
City of Westminster	167,233	—	21	20	—	2	—	—	9	—	52	3·2	—	2	—	2	1	—	2	—	—	7	0·4	200	14·0
North Districts.																									
St. Marylebone	125,195	—	13	9	—	3	—	—	8	1	34	2·8	—	2	1	1	1	—	—	—	2	7	0·6	209	18·5
Hampstead	96,729	—	14	10	—	1	—	1	6	—	32	3·5	—	2	—	1	—	—	—	—	—	3	0·3	92	11·3
St. Pancras	237,792	—	56	34	—	4	—	—	21	—	115	5·0	—	32	3	1	4	—	—	—	3	43	1·9	420	19·2
Islington	353,356	—	81	90	—	11	1	—	33	—	216	6·4	—	64	1	6	4	—	2	—	9	86	2·5	647	19·8
Stoke Newington	54,838	—	6	2	—	2	—	—	1	—	11	2·1	—	—	—	—	—	—	—	—	3	3	0·6	75	14·9
Hackney	239,979	—	42	22	—	16	—	3	38	—	121	5·3	—	4	1	1	—	—	2	—	5	13	0·6	344	15·6
Central Districts.																									
Holborn	53,142	—	8	5	—	2	—	—	3	—	18	3·5	—	3	—	1	1	—	1	—	2	8	1·6	86	18·2
Finsbury	94,578	—	13	22	—	7	—	1	24	—	67	7·4	—	12	1	2	2	—	1	—	9	27	3·0	207	23·7
City of London	17,132	—	2	4	—	—	—	—	—	—	6	3·7	—	—	—	—	—	—	—	—	—	—	—	20	13·4
East Districts.																									
Shoreditch	114,387	—	20	13	—	4	—	—	14	1	52	4·7	—	17	1	2	2	—	—	—	1	23	2·1	222	21·2
Bethnal Green	131,579	—	22	22	—	8	—	1	20	—	73	5·8	—	6	—	3	2	—	2	—	8	21	1·7	276	22·1
Stepney	314,379	—	58	37	—	16	—	3	47	—	161	5·3	—	12	2	2	2	—	1	—	11	30	1·0	499	17·3
Poplar	172,432	—	48	16	—	6	—	2	28	—	100	6·0	—	3	3	2	2	—	—	—	5	15	0·9	329	20·5
South Districts.																									
Southwark	211,832	—	47	30	—	8	—	1	26	—	112	5·5	—	62	1	7	2	—	1	—	9	82	4·0	453	23·3
Bermondsey	127,238	—	30	26	—	5	—	1	15	—	77	6·3	—	32	1	5	4	—	—	—	6	48	3·9	296	24·9
Lambeth	327,074	—	73	43	—	16	—	3	33	—	168	5·4	—	28	1	4	3	—	4	—	7	47	1·5	561	18·5
Battersea	188,222	—	46	24	—	6	—	2	17	—	95	5·3	—	13	2	2	3	—	2	—	3	25	1·4	267	15·9
Wandsworth	305,838	—	67	31	—	10	—	2	28	1	139	4·7	—	5	—	—	—	—	2	—	4	11	0·4	355	12·8
Camberwell	286,058	—	44	40	—	8	—	1	33	—	126	4·6	—	46	—	3	—	—	1	—	5	55	2·0	486	18·4
Deptford	119,642	—	36	13	—	2	1	1	19	—	72	6·3	—	7	—	1	—	—	—	—	4	12	1·0	204	18·7
Greenwich	112,935	—	18	14	—	—	—	1	12	—	45	4·2	—	1	—	—	—	—	—	—	5	6	0·6	139	13·1
Lewisham	164,899	—	53	26	—	4	—	—	5	—	88	5·6	—	2	2	1	—	—	—	—	2	7	0·4	183	12·1
Woolwich	135,422	—	63	12	—	—	—	1	7	—	83	6·4	—	3	—	—	2	—	—	—	3	8	0·6	166	13·7
Port of London	—	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

† The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

the City of Westminster, St. Marylebone, and Stoke Newington; and the highest rates in Islington, Finsbury, Poplar, Bermondsey, Deptford, and Woolwich. The prevalence of scarlet fever showed a marked decline from that recorded in the previous month; among the several metropolitan boroughs this disease was proportionally most prevalent in St. Pancras, Poplar, Bermondsey, Battersea, Deptford, Lewisham, and Woolwich. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals at the end of the month was 1727, against 1439, 1630, and 1825 at the end of the three preceding months; the weekly admissions averaged 183, against 160, 207, and 229 in the three preceding months. Diphtheria was rather less prevalent than it had been in October; the greatest proportional prevalence of this disease was recorded in Hammersmith, Fulham, Chelsea, Islington, Finsbury, the City of London, and Bermondsey. The Metropolitan Asylums Hospitals contained 866 diphtheria patients at the end of last month, against 580, 746, and 852 at the end of the three preceding months; the weekly admissions averaged 106, against 76, 108, and 120 in the three preceding months. The prevalence of enteric fever showed a considerable decrease from the somewhat excessive figures for the two preceding months; among the several metropolitan boroughs this disease was proportionally most prevalent in Hackney, Finsbury, Bethnal Green, Stepney, Southwark, Bermondsey, and Lambeth. There were 134 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of November, against 58, 141, and 169 at the end of the three preceding months; the weekly admissions averaged 16, against 32 and 25 in the two preceding months. Erysipelas was proportionally most prevalent last month in Hackney, Finsbury, Bethnal Green, Stepney, Poplar, and Deptford. The 29 cases of puerperal fever notified during the month included 3 in Hackney, 3 in Stepney, 3 in Lambeth, and 2 each in Kensington, Poplar, Battersea, and Wandsworth. The 4 cases of cerebro-spinal meningitis notified during the month belonged respectively to Paddington, St. Marylebone, Shoreditch, and Wandsworth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates are further corrected for variations in the sex and age constitution of the populations. During the five weeks ending Dec. 3rd the deaths of 7742 London residents were registered, equal to a corrected annual death-rate of 17·4 per 1000, the rates in the three preceding months having been 10·3, 11·9, and 12·6 per 1000 respectively. The death-rates last month ranged from 11·3 in Hampstead, 12·1 in Lewisham, 12·8 in Wandsworth, 13·1 in Greenwich, 13·4 in the City of London, 13·6 in Chelsea, and 13·7 in Woolwich, to 20·5 in Poplar, 21·2 in Shoreditch, 22·1 in Bethnal Greeen, 23 3 in Southwark, 23·7 in Finsbury, and 24·9 in Bermondsey. The 7742 deaths from all causes included 672 which were referred to the principal infectious diseases; of these, 409 resulted from measles, 21 from scarlet fever, 56 from diphtheria, 45 from whooping-cough, 23 from enteric fever, and 118 from diarrhœa. No death from any of these infectious diseases was recorded last month in the City of London; among the metropolitan boroughs they caused the lowest rates in Chelsea, the City of Westminster, Hampstead, Wandsworth, and Lewisham; and the highest rates in Hammersmith, Islington, Finsbury, Shoreditch, Southwark, Bermondsey and Camberwell. The 409 deaths from measles were more than three times the average number for the corresponding period of the five preceding years; this disease was proportionally most fatal in Hammersmith, St. Pancras, Islington, Finsbury, Shoreditch, Southwark, Bermondsey, and Camberwell. The 21 fatal cases of scarlet fever showed a decline of 36 from the corrected average number, and included 3 in St. Pancras, 3 in Poplar, 2 in Stepney, 2 in Battersea, and 2 in Lewisham. The 56 deaths from diphtheria were 25 below the corrected average number; the greatest proportional mortality from this disease was recorded in Hammersmith, Finsbury, Bethnal Green, Southwark, and Bermondsey. The 45 fatal cases of whooping-cough showed a decrease of 29 from the corrected average number; the highest death-rates from this disease last month were recorded in Hammersmith, Fulham, St. Pancras, Finsbury, Shoreditch, Bethnal Green, Bermondsey, Battersea, and Woolwich. The 23 deaths from enteric fever were 8 below the corrected average number; of these 23 deaths, 4 belonged to Lambeth and 2 each to the City of Westminster, Islington, Hackney, Bethnal Green, Battersea, and Wandsworth. The 118 deaths from diarrhœa were 33 fewer than the corrected average number; this disease was proportionally most fatal in Paddington, Stoke Newington, Finsbury, Bethnal Green, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London last month from these principal infectious diseases was 27·4 per cent. above the average.

Correspondence.

"Audi alteram partem."

LAVATORY ACCOMMODATION FOR WOMEN.

To the Editor of THE LANCET.

SIR,—I desire to bring to your notice the accompanying resolutions which were passed at a conference of representatives of the following bodies on Nov. 21st:—The Royal Sanitary Institute, the National Health Society, and the Women's Imperial Health Association. Mrs. Oxley Grabham, who has conducted an extensive investigation into the sanitary accommodation provided by railway companies for women, was also present.

With regard to resolution No. 1 it may be said that although the system now so largely adopted by the railway companies of providing lavatory carriages on long-distance trains, has proved an enormous benefit to both men and women travellers, still there is considerable evidence that the accommodation for women at railway stations all over the country is often insufficient and insanitary, whilst the necessity for payment, which is still universal for women at railway stations, operates harshly on the travelling public of the more necessitous classes.

Appropriate communications have been addressed on the subject of the aforesaid resolutions to the Local Government Board, the Board of Trade, the London County Council, and the principal railway companies, and the conference desires to enlist the powerful aid of THE LANCET in making the resolutions known to its readers, or in any other way helping a reform which is so intimately associated with the health and comfort of the female members of the community.

I am, Sir, yours faithfully,

LOUIS C. PARKES,
Chairman of Council, the Royal Sanitary Intitute.

London, S.W., Dec. 16th, 1910.

[RESOLUTIONS.]

1. That in the opinion of this meeting sufficient sanitary accommodation for women's use should be provided free of charge by sanitary authorities, railway companies, and in places of public entertainment and resort.
2. That in the opinion of this meeting it is essential in the interests of public health and decency that there should be an attendant in charge of the sanitary convenience provided for women's use in public places.
3. That in the opinion of this meeting all sanitary conveniences provided for the use of women should be subject to periodical inspection by women sanitary inspectors appointed by the local sanitary authorities.
4. That this meeting desires to call the attention of the railway companies, and managers of theatres and other places of public resort, to the unsatisfactory character of much of the sanitary accommodation provided for women, and to the necessity for having only sanitary conveniences of good modern type and construction.

THE POSITION OF HOMŒOPATHY.

To the Editor of THE LANCET.

SIR,—The appreciative and sympathetic references recently made by the press to the death of my old and valued friend, Dr. Dyce Brown, whose ability, amiability, and keen artistic sense had won for him the affection and respect of a wide circle, must have made others besides myself think whether it is not time to reconsider our attitude towards homœopathy. The objections to that method of treatment, so far as I understand them, are based on the belief that its professors are practising what they do not believe, and are therefore guilty of a grave breach of the moral law, in consequence of which they are scorned

and rejected of men, boycotted in medical circles, excluded from hospital appointments, and practically from social intercourse with their brethren. It is not likely that respectable people honestly trying to do their duty according to their lights should feel anything but sore when they are thus branded with the mark of Cain, and a bitter feeling has thus grown up between the two equally qualified sections of medical and surgical science, which, I venture to think, is little creditable to ourselves. For what great crime, after all, have the homœopathists committed? The absurd doctrines of Hahnemann have long since been abandoned, and all that they now do is to treat disease on a much more scientific principle than ours, by often-repeated doses of strong tinctures instead of the nauseating tablespoonfuls and wineglassfuls which too often nauseated the patient and retarded his chances of recovery. I have no doubt that Sir Richard Quain lost the Presidentship of the Royal College of Physicians of London, which he had fairly earned by earnest and successful work, because he met Dr. Kidd in consultation over Lord Beaconsfield's case, and I well remember the storm in a tea-cup which ruffled the calm waters of Pall Mall, when an attempt was made to "run in," or rather "run out," Dr. Murrell and Professor Ringer for an alleged therapeutic heresy, an attempt which properly and ignominiously failed. I suppose my professional brethren are too much beaten down by the authority of the Royal Colleges to air their views.

I am, Sir, yours faithfully,

Finzean, Dec. 19th, 1910. R. FARQUHARSON.

THE MOTOR FUNCTIONS OF THE STOMACH.

To the Editor of THE LANCET.

SIR,—In his letter of Dec. 17th Mr. Gray excuses himself for ascribing Bayliss and Starling's discovery of secretin to Wertheimer, who had nothing to do with it, by saying that in the same paragraph "an extensive quotation, duly ascribed to Starling, appears." However gratifying this must have been to Professor Starling, a quotation from a discussion by Starling on some observations made by Edkins (who is not mentioned by Mr. Gray) hardly compensates for giving the credit of Bayliss and Starling's epoch-making discovery of secretin to "Wertheimer and others."

With regard to Mr. Gray's "recent radiographers and others," who "assert that the pylorus during gastric digestion descends naturally below and to the left of the umbilicus," I think that Mr. Gray must have misunderstood Dr. Barclay's references to the work of Pfahler and Holzknecht instead of referring to their original papers. Dr. Barclay will doubtless reply to Mr. Gray himself, so that I shall content myself with quoting from Pfahler and Holzknecht. According to Pfahler,[1] the pylorus is "usually about an inch above the umbilicus," and "the pyloric portion extends from one to two inches beyond the median line to the right," and Holzknecht[2] states that the pylorus is above the umbilicus and "lies in front of or to the right of the spinal column." The figures given in Pfahler and Holzknecht's papers as types of what they regard as normal stomachs bear out this description. The disagreement between various radiographers as to what is the "normal" stomach is simply a matter of terminology. Barclay, Rieder, Holzknecht, and Pfahler all agree as to the shape of the stomach most commonly seen in healthy people, but while Barclay and Rieder think that this shape should be regarded as the normal, Holzknecht and Pfahler think that the "ideal" form, in which the greater curvature does not reach below the umbilicus and the pylorus is on a level with the lowest point of the organ, should be regarded as normal, although they admit that it is comparatively rarely seen.

Our disagreement as to the occurrence of peristalsis in the "cardiac end" of the stomach is, I expect, simply due to a misunderstanding as to nomenclature. Peristaltic waves generally begin near the junction between the upper and middle thirds of the stomach; this point lies in what Cunningham, following His, called the "body" of the stomach, and corresponds probably to what Mr. Gray calls "the distal part of the cardiac portion," which seems to me to be a less convenient term. Mr. Gray apparently believes that these waves at first pass no farther than his "third sphincter," whilst physiologists and radiographers agree that they pass without interruption to the pylorus.

Why does Mr. Gray think that food may pass directly into the duodenum in infants, but only after a considerable delay in adults? I can only imagine that it is because it is easier to observe the process through the small, and therefore more transparent, bodies of infants than through the more opaque bodies of adults. I have watched food (and by food I mean *food*, and not water or albumin water) enter the duodenum immediately after a meal has been taken in a very large number of cases, and any afternoon that Mr. Gray calls at Guy's Hospital I am sure that Dr. A. C. Jordan, our medical radiographer, will be pleased to demonstrate this to him in as many cases as he may desire.

If Mr. Gray thinks that the pylorus requires "at least a little free hydrochloric acid before its sphincter action is unloosened," how does he account for the fact that, according to all writers on this subject, the stomach empties itself with undue rapidity in primary achylia gastrica? In this condition, as well as in almost all cases of carcinoma of the stomach, in nearly all cases of pernicious anæmia, and in many of simple gastritis, free hydrochloric acid is present at no period during digestion, so that the pylorus should never relax and its contents never leave the stomach, if Mr. Gray were correct.

Even if Dr. Barclay disagrees with me as to the position of the pylorus, which I doubt, by what process of reasoning does Mr. Gray conclude from this that Barclay's observations on duodenal ulcer, which are in complete agreement with mine, should not be accepted as confirmation of mine? Our observations prove that the late onset of pain is not due to food being held back by the pylorus or by Mr. Gray's "third sphincter," as we both have found that the food passes into the duodenum with unusual rapidity in cases of duodenal ulcer. The true cause of hunger pain hardly comes within the scope of a discussion on the "motor functions of the stomach."

I am, Sir, yours faithfully,

Weymouth-street, W., Dec. 17th, 1910. ARTHUR F. HERTZ.

[1] Journal of the American Medical Association, xlix., 2070, 1907.
[2] Mitteil. aus den Labor. für radiol. Diagn. u. Ther., Vienna, 1906.

ORGANIC PREPARATIONS OF ARSENIC.

To the Editor of THE LANCET.

SIR,—It would be a striking confirmation of the truth of Goethe's admonition, "Warum in die Ferne schweifen, sieh das Gute liegt so nah," were it now to be shown that what is practically our oldest organic preparation of arsenic, introduced into therapeutics 46 years ago by a now forgotten German physician, exhibits the same action on spirochætæ as the recently evolved complicated compound of another compatriot.

Cadet in 1760 obtained a fluid by distilling a mixture of arsenic and potassium acetate; this was known under the designation of Cadet's fluid, alkarsin, or fluid pyrophore. Bunsen, in 1837, first analysed this fluid, and found that it consisted principally of cacodyle and cacodyle oxide, which could be converted into cacodylic acid by oxidation. The first pharmacological experiments with this preparation were undertaken by Bunsen himself on frogs, and by Kürschner on rabbits. The latter found that a dose of 0·42 gramme could be given intravenously without harm; indeed, one animal bore this dose following the administration per os of a dose of 0·36 gramme. In 1843 it was therefore already established that cacodylic acid was non-toxic. In 1860 Schmidt and Chomse confirmed the above statement regarding the non-poisonous character of cacodylic acid, but they found that under certain circumstances it was reduced in the stomach. Lebahn, in 1868, stated that it possessed the action of arsenic, but that it was considerably less toxic than the latter or its salts. Schulz (1879), Marshall and Green (1886) were also able to confirm the above statements; in other words, as far back as 1886 no less than eight authors had published the results of their physiological and pharmacological investigations of cacodylic acid. Jochheim was the first to try the use of cacodylic acid in his practice in 1862, and he published at the time a report of the excellent results he had obtained from its use in the treatment of chronic skin diseases and pulmonary tuberculosis. I recently came across a now forgotten publication of his which bears the date 1865 and is in the possession of the Grand Ducal Court Library here. In this work he says that in his opinion

cacodylic acid exhibits so prompt an action in pulmonary tuberculosis because "it imparts to the blood of the patient a condition which is inimical to the tuberculosis." In my opinion, this is a very interesting statement, especially when we bear in mind that this was long before Koch's discovery or before anything was known about antibodies, antitoxins, and side-chain theory. Between Jochheim in 1862 and Gautier in 1899, many other authors have made contributions to the literature on the cacodylates. Indeed, Peraldis in 1902 in the *Presse Médicale* drew attention to the fact that Gautier was by no means the first to advocate the therapeutic use of these preparations.

It is an American surgeon who is the first to draw attention to the parallel between cacodyle and "606" in the marked specific action displayed by both, based on his own experience. In the *Journal of the American Medical Association* of Sept. 24th, 1910, Dr. John B. Murphy of Chicago describes the results which he has obtained in the treatment of syphilis with the use of sodium cacodylate, which at first cause one to believe that the paper deals with the remarkable successes attendant on the use of Ehrlich's diamidodioxybenzol, so similar is the effect displayed by both drugs.

Dr. Murphy has been using sodium cacodylate for seven years to allay the pain of metastatic, osseous carcinomata, and also for the various other purposes for which arsenic is indicated. He states that one of its striking therapeutic effects is the rapid dissolution of the deposits in fibrinous pericarditis in children when administered in daily doses of one to three grains or even more. He then proceeds to give an account of his observations following the use of sodium cacodylate in the treatment of syphilis. The usual dose was one to two grains injected hypodermically into the muscles. The effect is remarkable: the spirochætæ disappear completely from the primary chancre in 48 hours, the induration is markedly reduced in 24, and it becomes a soft, clean ulcer in 72 hours. "From that time on it repairs with the same speed as an aseptic sore of mechanical origin would heal in the same tissue. In other words, the sodium cacodylate seems to destroy the specific microorganism (the spirochæta) which is keeping up the irritation." The microscopic examination in one case (illustrated by photographs) showed that the spirochætæ had disappeared within 48 hours from a chancre on the lip contracted from contact with a drinking cup, and following two injections of half a grain each into the pectoral muscle 24 hours apart, while only a clean soft ulcer without induration remained. Thirteen days after the initial treatment the ulcer had healed completely and had left no evidence of the disease. In all, ten injections of half a grain each were made and four injections of three-quarters of a grain. Dr. Murphy states that—

> The adenopathies, except those with suppurating central foci, disappear in four or five days. The mucous patches repair in from twenty-four to forty-eight hours, the advancing ulcers of the palate and posterior wall of the pharynx clear up and heal as healthy granulating wounds in from three to six days and the perforating ulcers of the palate repair in their margins, leaving the perforation in a healthy condition. ..... In a child nine months old with a papillary syphilide, a quarter-grain dose was administered into the pectoral muscle. The rash entirely disappeared in forty-eight hours.

As Dr. Murphy proposes to use the 25 doses of Ehrlich's "606" which he has received in control cases with sodium cacodylate, his results may be awaited with interest; and certainly his suggestion deserves attention to make further trials with a remedy as safe as sodium cacodylate. He suggests that the primary dose should be from two to four grains, and should not be repeated within three or four days. Over diamidodioxybenzol it presents the advantages that it is stable, and its solutions can be sterilised without fear of decomposition, while the injections are practically painless. On the other hand, it is not a proprietary preparation and its pharmacological action is well established.

Sodium cacodylate, $(CH_3)_2AsO_2Na+3H_2O$, is readily soluble in water and contains 46·8 per cent. of arsenium, equivalent to 61·8 per cent. of arsenious acid. As yet its mode of action in the organism has not been clearly explained. By some authors it is assumed that its action is due to its transformation into arsenious or arsenic acid, while others attribute a specific action to the cacodyle molecule, a view supported by the observation of Fraser, who found that no arsenic action followed the internal or subcutaneous administration of sodium cacodylate and that the preparation left the organism unchanged. Heffter, on the contrary, is of opinion that its effect is due to the liberation of arsenic, and found that traces of arsenious acid could be demonstrated in the urine, while certain organs, such as the liver, intestine, and walls of the stomach, have the property of reducing cacodylic acid. This would explain the odour of cacodyle oxide which appears on the internal administration of the cacodylates, but which is generally absent following its subcutaneous exhibition.

The innocuousness of the drug is demonstrated by the fact that there is no mention in the literature of any serious optic derangement or alarming symptoms consequent on its administration during the past 10 years. In view of the recent success in the treatment of syphilis with arsenic, it is of interest to recall to mind that Gautier did not attribute any specific action to arsenic medication, but believed its beneficial action in this affection to be due to its important property of improving the general condition. Oppenheim (*Klinisch-therapeutische Wochenschrift*, 1907, p. 1170) is one of the most recent authors who refer to the use of sodium cacodylate in syphilis, which he regards as preferable to atoxyl and amino-phenylarsenic acid by reason of its lesser toxicity. The preparation has hitherto met with little interest in Great Britain, and it is principally in France and in Italy that it is extensively used. It is now official in the pharmacopœias of France, Italy, and Switzerland.

I am, Sir, yours faithfully,

Darmstadt, Dec. 5th, 1910. GEORGE P. FORRESTER, F.C.S.

THE NATIONAL COUNCIL OF PUBLIC MORALS.

To the Editor of THE LANCET.

SIR,—May we presume upon the sympathy which you have shown towards the National Social Purity Crusade to announce that this organisation will in future be known as the National Council of Public Morals, a title which is more in keeping with the comprehensive educational character of the work, and which we hope will further commend it to the churches, schools, and press of the whole country, and that its offices, through the generosity of Sir W. P. Hartley, will be at Holborn Hall, W.C.

In making this announcement, permit us to add that His Majesty, in kindly accepting a copy of "The Nation's Morals," being the report of our Public Morals Conference held at Westminster last July, graciously says that he fully shares the sympathetic sentiments of His late Majesty King Edward VII. towards this crusade, and that there is no one more anxious than himself to see the state of things (which we deal with) changed for the better.

May we further add, with His Majesty's knowledge, his message to the Convocation of York—"The foundations of national glory are set in the homes of the people. They will only remain unshaken while the family life of our nation is strong, simple, and pure"—will be the motto of the National Council of Public Morals. They express in most felicitous terms the object of this movement, of which the Lord Bishop of Durham is President for 1911.

We remain, Sir, yours faithfully,

WILLIAM SINCLAIR,
Chairman.
F. B. MEYER,
Vice-Chairman.

National Council of Public Morals, Holborn Hall, W.C., Dec. 19th, 1910.

A POINT IN CHOLELITHIASIS.

To the Editor of THE LANCET.

SIR,—Three months ago, with the help of Dr. John Morton and Dr. R. Home Henderson, I operated on a gall-stone case. There was nothing out of the ordinary in the conditions present except the number of calculi found. There was one marble-sized, round, almost encapsuled stone, with 796 others, small, cuboid, facetted. A week after operation three small ones came from the wound, making in all 800. I looked up Mr. Mayo Robson's book on "Diseases of the Gall-bladder and Bile-ducts" (second edition, 1900), and found that he had taken 720 from one of his cases.

Can any of your readers furnish me with, or direct me

where to procure, details of cases with as large or larger numbers removed by operation?

I am, Sir, yours faithfully,

Glasgow, Dec. 14th, 1910. DUNCAN MACARTNEY.

A QUESTION UNDER THE WORKMEN'S COMPENSATION ACT.

To the Editor of THE LANCET.

SIR,—I give a note (certificate) to a man with a "beat knee" dated Dec. 1st. Certifying surgeon comes along when he pleases, not when asked, at least not as early as he could have come. He dates certificate of suspension Dec. 8th, the day he saw patient, but puts in the suspension certificate that patient has suffered since Dec. 1st. How do the owners pay compensation—from my date, Dec. 1st, or certifying surgeon's date, Dec. 8th?

I am, Sir, yours faithfully,

Dec. 14th, 1910. SIMPLEX.

*** The employers are liable to pay compensation from the date of disablement, which for the purposes of Section 8 of the Workmen's Compensation Act, 1906, "shall be such date as the certifying surgeon certifies as the date on which the disablement commenced" (Section 8, Subsection 4). This assumes the incapacity to be of more than two weeks' duration. We are not of the opinion that our correspondent has any cause of complaint against the certifying surgeon, as his letter seems to suggest, and we think he will find the certificate, which is not before us, is one of disablement not of suspension, following the form (Form 3) laid down by the Secretary of State, and rightly giving the date of the certifying surgeon's examination, as well as that which he has been able to fix as the date of disablement.—ED. L.

MALARIA IN ITALY IN 1909.

(FROM A CORRESPONDENT.)

THE "Società per gli Studi della Malaria" in its report for the year 1909 calls attention to observations in Algeria by the brothers Sergent and by Pölettini, Memmi, and Pozzilli, proving once more the existence of carriers of malaria. Persons were found who had malarial parasites, even parasites of the æstivo-autumnal variety, in their blood, without showing the slightest febrile reaction. These apparently healthy carriers, some of whom were children and some adults, are most dangerous from the epidemiological standpoint, forming reservoirs, as it were, very difficult of detection, from which the new epidemical torrent emerges. Add to these the chronic cases of latent infection and the links connecting one epidemic season with another become evident. No simple easy method of detecting such cases has yet been discovered.

Besides the ordinary pre-epidemic recrudescence of recidivous cases there has been observed a recidivity which is of a more prolonged type and may be called periodic, recurring in the years of epidemic recrudescence. It has not been possible to trace any relation between the number of anopheletes or between the meteorological conditions and the periodic recrudescences; rather it would seem that these are regulated by biological causes such as this periodic recidivity and by a loss of the immunity conferred by previous attacks. As regards prophylaxis, the report has again to lament a diminution in the quantity of State quinine consumed in the past financial year, 1909–10, to the extent of nearly 2000 kilogrammes upon that of 1908–09, which in its turn showed a diminution of 715 kilogrammes upon that of 1907–08. Associated with this diminished use of quinine there has been an increase of malaria in nearly all those provinces where such diminution has taken place. The following table gives the figures since 1902 (when the use of State quinine was begun) relating to the consumption of quinine and the mortality from malaria. The mortality for only the first half of 1909 is available. It shows a total diminution, however, of 949 deaths on that of the corresponding period of 1908.

Consumption of State quinine.		Mortality from malaria.	
Financial year.	Kilogrammes sold.	Year.	Total deaths.
—	—	1900	15,865
—	—	1901	13,558
1902–1903	2,242	1902	9,908
1903–1904	7,234	1903	8,513
1904–1905	14,071	1904	8,501
1905–1906	18,712	1905	7,838
1906–1907	20,723	1906	4,871
1907–1908	24,351	1907	4,160
1908–1909	23,635	1908	3,463
1909–1910	21,665	1909	—

Besides the fall in mortality there is a noticeable absence of the great periodic oscillations in the mortality curve which characterised it in the year preceding the date of State-supplied quinine. The fall is still more evident in the statistics of Latium, Southern Italy, and the islands where, before it was supplied gratuitously, quinine was beyond the reach of the greater part of the population. Further, whereas prior to 1902 the malaria mortality and the general mortality were subject to the same variations and fell at about the same rate, after that date the former made a precipitous descent, leaving the latter at the comparatively high level which it still maintains.

Unfortunately, the same cannot be said of the *morbidity* rate for malaria, which, in some regions especially, still remains very high, doubtless because of the neglect of the prophylactic as compared with the therapeutic use of quinine. An experiment carried out at Vigasio in 1909 strikingly confirms this explanation. All adults in that place who had been attacked during the previous season by malaria were carefully treated with quinine for the last 50 days of the pre-epidemic, as well as during the whole epidemic period of 1909, the rest of the population, with the exception of 132 children who also received prophylactic treatment, not taking any quinine as a preventive. An epidemic of primitive infections nevertheless broke out, affecting 17·3 per cent. of adults and only 12·7 per cent. of all children (who it is well known are the more susceptible), while not one of the 132 children prophylactically treated was attacked. The value of the prophylactic method was also abundantly shown in the "demonstration camps" organised both in Italy and abroad in connexion with the army, the schools, the mines, the country estates, and the agricultural population of the Agro Romano and Pontine Marshes, among all of whom only a very small fraction contracted malaria. The doses of quinine administered for the purpose of prophylaxis (amounting sometimes to 10 or 12 grains daily) have proved uniformly innocuous. In the case of children it is given in the form of chocolates of tannate of quinine in doses of 2½ grains and upwards daily, according to age, and far from harming them is found to act as an excellent tonic. When practicable the use of wire gauze has been continued, with the same good results as formerly. In such a country as Italy, with but limited means at its disposal, no attempt has been or can be made with any hope of success to attack malaria by the destruction of the anopheles.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool University: The Dutton Memorial Professorship of Tropical Entomology; the Lectureship in Operative Surgery.

IN 1905, it will be remembered, the late Dr. J. E. Dutton lost his life in the Congo from spirillum fever, a disease which he, together with the other members of the twelfth expedition of the School of Tropical Medicine, were investigating. He succumbed after a short illness. In view of the many great services that Dr. Dutton had rendered to the investigation of tropical medicine, although he died at the early age

of 28, the Liverpool School of Tropical Medicine set about collecting a sufficient sum of money to endow a professorship in the University of Liverpool in connexion with tropical medicine to commemorate the sacrifice of his life. The movement has now reached completion, and the school has been able to offer the University the sum of £10,000 for the establishment of a chair in tropical entomology, which has been gratefully accepted. This makes the second chair given to the University by the Liverpool School of Tropical Medicine, the first being the "Sir Alfred Jones chair in Tropical Medicine." The Liverpool School of Tropical Medicine, under the guidance of its new chairman (Mr. W. H. Lever), continues to receive valuable support on all sides, and has had this last term a record number of students.—Mr. Keith W. Monsarrat, the dean of the Faculty of Medicine, has been selected for the new lectureship of operative surgery in the University.

Liverpool Education Committee and Defective Vision in Children.

The education committee has adopted the following resolutions in regard to the testing of the eyesight of children attending the elementary schools who are reported by the school medical officers to have defective vision and whose parents are found to be unable to defray the cost:—

1. That every such child shall receive a voucher to be redeemed at the price of 3*s*. if signed by a registered medical practitioner recognised by the local education authority for this function.
2. That a list be prepared of such hospitals and registered medical practitioners as the sub-committee considers to be properly equipped for such work, and as have expressed their desire to undertake it.

These resolutions are open to serious objection in that refraction work, especially in the case of children, requires considerable training, so that the fee is quite inadequate to the time and skill demanded. Why should Liverpool offer less than the Liscard education authority, or the Bangor county council? Both are paying at the rate of 21*s*. per four cases dealt with, the work being done by surgeons of special equipment.

Dec. 19th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Trypanosomiasis and the Cinematograph.

THE latest meeting of the Bristol Medico-Chirurgical Society was marked by a departure from the ordinary course of events. The evening was devoted to a lecture on trypanosomiasis by Captain F. P. Mackie, I.M.S., an old Bristol student and a member of the Royal Society's Sleeping Sickness Commission. The meeting was held in the new chemical theatre of the University, by kind permission of Professor F. E. Francis, and there was a large attendance. The lecture was illustrated by microscopical specimens and by an admirable series of lantern slides; and it was followed by a remarkable cinematographic demonstration of trypanosomiasis experimentally induced in the rat, the films used being prepared and exhibited by Pathé Frères of London and Paris. Dr. M. Nierenstein, a member of the chemical staff of the University, whose work on atoxyl and allied bodies is well known, also spoke.

Long Fox Lecture.

On Dec. 15th the sixth Long Fox lecture was delivered to an interested audience in the medical library of the University of Bristol by Professor J. Michell Clarke, the Vice-Chancellor being in the chair. The subject chosen was Cerebro-spinal Syphilis. The lecturer's wide experience of neurology gave a personal note of authority to the discourse, which included remarks on the parasyphilitic processes, the gummatous and arterial lesions of the brain and cord, and on syphilitic affections of the meninges. A number of interesting lantern slides served to illustrate the lecture. The previous lecturers have been Dr. John Beddoe, F.R.S., Dr. R. Shingleton Smith, Dr. P. Watson Williams, Mr. J. Herbert Parsons, and Professor Edward Fawcett.

George Allen Norman, M.B. Oxon., L.R.C.P., L.R.C.S. Edin.

The funeral of Dr. G. A. Norman took place at Ipplepen, Devon, on Dec. 15th, in the presence of a large gathering. Dr. Norman, who received his medical education at St. George's Hospital and Oxford University, graduated M.B. of Oxford in 1870, after having qualified L.R.C.P. and L.R.C.S. of Edinburgh during the previous year. Dr. Norman in his younger days was a good athlete and a successful competitor at the United Hospitals' athletic sports in London. He was at one time surgeon to the Monmouth and County Hospital. Dr. Norman practised for many years in California and came to Ipplepen about seven years ago. He was very highly esteemed in Ipplepen and the district, and much regret is felt there at his death.

South Devon and East Cornwall Hospital, Plymouth.

As a result of the Hospital Sunday collections which took place at Plymouth on Oct. 23rd, the sum of £755 has been handed to the treasurer of the South Devon and East Cornwall Hospital.

The Falmouth (Cornwall) Board of Guardians and Tuberculosis.

At the meeting of the Falmouth board of guardians, held on Dec. 15th, a special committee reported in favour of urging the Local Government Board to make the notification of pulmonary tuberculosis compulsory in Cornwall, and suggested that the question of the establishment of a sanatorium for tuberculosis for the county should be pressed forward.

Dec. 19th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal Honour for Scottish Universities.

THE King has been pleased to command that the three ancient Scottish Universities of St. Andrews, Glasgow, and Aberdeen shall be included amongst the representative bodies having the right of personal access to the Throne for the presentation of addresses. This honour has hitherto only been held by the General Assembly of the Church of Scotland, the corporation of the City of Edinburgh, and the University of Edinburgh, whose representatives are invariably received by the Sovereign when presenting addresses of loyalty.

Teachers' Recommendations re Inspection of Children.

The committee appointed by the Glasgow Local Association of the Educational Institute of Scotland with reference to the medical inspection of school children reports that the methods of conducting the inspection in Edinburgh, Renfrewshire, Dumbartonshire, and Stirlingshire, Glasgow, Govan, and other parts of Lanarkshire, have been carefully considered. These methods differ very considerably even in the same county, and accordingly the committee recommends that: (1) The ordinary work of the school should not be interfered with by excessive demands on the teachers' time; (2) the educational work of the teachers should not be brought into disrepute by requirements which may lead to conflicts with the parents; and (3) duties requiring medical skill, however simple, should not be imposed upon the teachers. The committee further suggests that teachers may reasonably be asked to (*a*) forward to the medical officer or local education authority the names and addresses of the children to be examined; (*b*) distribute, by means of the children, notices to the parents informing them of the date of the medical inspection; and (*c*) supply such particulars respecting each child to be examined as are contained in the ordinary school records—e.g., regarding regularity of attendance, &c. It is also suggested that teachers should not be required to (*a*) fill up and sign notices to the parents regarding the necessity of future advice or treatment; (*b*) measure and weigh children; (*c*) test children's eyesight, examine their teeth, or examine them for vaccination marks; (*d*) enter on school cards details respecting state of clothing, footgear, cleanliness, nutrition, speech, mental condition, work outside school hours, parent's occupation, size of house, &c.; (*e*) dress and undress the children during the inspection; (*f*) fill in doctor's observations in the cards as inspection proceeds; and (*g*) enter all details of cards in duplicate in a schedule or register.

Death of Dr. James Maxwell of Tobermory.

The death took place at Campbeltown last week of Dr. James Maxwell, who for many years was medical officer of Tobermory, which post he was obliged to resign a short time

ago owing to failing health. Dr. Maxwell was born in Glasgow and was educated in Campbeltown. He studied at the University of Glasgow and shortly afterwards was appointed medical officer of the parish of Tobermory. During his long residence there he took a deep and active interest in the affairs of the parish, being a member of the school board and an officer in the Argyll and Bute Artillery, and being also identified with other organisations. He was very popular in the Island of Mull and was held in the highest esteem in the circles in which he moved. Dr. Maxwell at the time of his death was 54 years of age and was unmarried.

Treatment of Consumption in Aberdeen.

On Dec. 14th, at a meeting of the public health committee of the Aberdeen town council it was agreed, on the recommendation of Dr. Matthew Hay, medical officer of health, to open one of the reconstructed and extended pavilions of the Aberdeen City Hospital for the treatment of pulmonary tuberculosis. This will be done as soon as the new heating arrangements are completed. In his report Dr. Hay states:—"According to the recognised standard of one bed per 1000 of population, the whole accommodation of the City Hospital, as recently extended, is scarcely more than is necessary to meet the requirements of ordinary zymotics, if they are to continue to be removed to the hospital in as liberal proportions as in the past; but owing to great fluctuations in their prevalence there are considerable stretches of time within which some of the wards stand unused. With this in view I suggested to the committee, when engaged in planning the additions, that one of the reconstructed and extended pavilions should be so arranged as to make it convenient and suitable for the treatment and care of cases of pulmonary tuberculosis or consumption. These arrangements are such that they will not interfere with the use of the pavilion at other times, for ordinary zymotic cases, when epidemics of the highly infectious and dangerous diseases demand it. ..... It is an educational gain that the treatment of the cases will be carried out in a hospital which is easy of access and is visited twice a week by large numbers of the relatives of patients. The tuberculosis wards will be a constant object-lesson. The pavilion, with its two main wards and four small wards, is capable of accommodating 32 to 36 adult patients, and there is no reason why a few cots should not be placed in each ward for the treatment of non-surgical cases of tuberculosis in children."

Hospital Accommodation at Aberfeldy.

Arising out of an inquiry by the Local Government Board as to the views of the burgh medical officer (Dr. J. Mackay) in regard to the hospital accommodation for infectious diseases in the burgh, the medical officer reported at a meeting of Aberfeldy town council on Dec. 12th, that in his opinion it would be more satisfactory if the burgh local authority erected a small hospital for its own use; but failing its doing this, the next best thing to do was to send the patients to Perth, and if the authority continued to adopt this course he suggested procuring an ambulance wagon for the burgh. The town clerk was instructed to make inquiries regarding the purchasing of a second-hand wagon.

Dec. 19th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Fellows of the Royal College of Surgeons in Ireland.

A SPECIAL meeting of the Royal College of Surgeons was held recently on the requisition of a number of the Fellows. A resolution was adopted recommending the Council to limit the appointment of examiners to Fellows of the College. At present examiners must be Fellows or teachers in a recognised school of medicine. This resolution, if carried out by the council, will exclude several teachers in the schools from being appointed examiners.

The Chair of Midwifery in the School of Physic.

Last year when proceeding to elect to the chair of midwifery in the School of Physic, the Royal College of Physicians invited each candidate to state whether, if elected, he would resign the chair if he should become master of a maternity hospital. The candidates had no choice but to assent, and in consequence Dr. H. Jellett, who was elected, and has recently become Master of the Rotunda Hospital, has now resigned the chair of midwifery. A successor will be elected in March, and in the meantime Dr. Jellett has been invited to continue his course of lectures. The condition imposed by the College has roused some criticism.

Conference of Poor-law Guardians.

It was perhaps owing to interest being centred on the General Election that the attendance at the Conference on Poor-law Reform held recently at the Mansion House, Dublin, was very small. The conference was summoned by the Irish Workhouse Association, of which the Earl of Mayo is president, and all the boards of guardians in the country were invited to send delegates. As a matter of fact, out of some 150 boards only 11 were represented. Resolutions to the following effect were passed:—

That the county should be the area for which special institutions for the sick and aged should be maintained, and the cost should be paid out of the county and county borough rates.

That the duty of making suitable provision for the feeble-minded should be an imperial charge.

A motion approving of certain proposals in the report of the Vice-Regal Commission in preference to those of the Royal Commission fell to the ground, the numbers of those voting on each side being equal.

The Women's National Health Association.

The annual meeting of the Dublin branch of the Women's National Health Association was held last week in the Royal College of Physicians. The annual report stated that the branch had now completed three years of work. The branch employed two nurses to visit patients suffering from tuberculosis to advise as to precautions against infection, and gave help in other ways. The pasteurised milk depôt was selling between 35 and 40 gallons of milk a day, and 82 babies were at present being supplied with such milk. A babies' club was founded a year ago and was at present attended by about 20 mothers with their babies. They got instruction in sewing, cooking, and the care of children generally. Once a week the babies were medically examined and advice given to the mothers. Nurses also visited the babies at their homes. The branch was also organising a corps of visitors in connexion with the Early Notification of Births Act, which had been recently adopted by the corporation of Dublin. Steps were being taken to organise "tuberculosis classes" on the lines of those conducted by Dr. Pratt of Boston. Lady Aberdeen presided.

The Department of Agriculture and the North Dublin Sanitary Authority.

For some months past a prosecution has been pending against the Department of Agriculture by the North Dublin rural council as sanitary authority of the district in which the model farm of the Department is situated. It appears that in the farmyard a heap of manure is placed in closer proximity to the cowsheds than is allowed by the regulations of the rural district council, and after repeated warnings the council finally prosecuted the manager of the farm. The Department set up the defence that the manure was in its proper position, that it was not too close to the cowsheds, and that its removal to any other site would be impracticable. In fact, as a lesson in farm management to the country at large the manure was declared to be in the only suitable position. On a first hearing the bench of magistrates was equally divided, and the council then withdrew the prosecution.

Medal for the Countess of Aberdeen.

The Countess of Aberdeen has received the medal of the International Association for Medical Instruction, conferred in recognition of the campaign against tuberculosis in Ireland.

Dr. C. J. Clibborn, J.P.

Last week, in the City Hall, Belfast, Dr. C. J. Clibborn, late medical inspector of the Local Government Board, who has recently retired under the 65 years age limit, was presented by the dispensary medical officers of the Belfast area with a very handsome solid silver salver inscribed as follows:—

Presented to Cuthbert J. Clibborn, M.D., J.P., on his retirement from the position of Medical Inspector, Local Government Board, with the best wishes of the members of the Dispensary Medical Staff of Belfast Union, and in recognition of the marked ability, courtesy, and consideration which he invariably displayed in the discharge of the duties of his office; 12th December, 1910.

The autographs of the 17 members of the dispensary medical

staff surround the inscription, which occupies the centre of the salver. At the meeting in the City Hall Mr. S. B. Coates presided, and complimentary speeches were delivered by the chairman, Mr. C. J. Milligan, Mr. H. D. Osborne, Dr. Robert Thomson, J.P. (chairman of the Belfast public health committee), Mr. H. W. Bailie (medical officer of health), and Mr. R. Meyer (town clerk of Belfast). Dr. Clibborn made a very feeling reply of thanks.

The Forster Green Hospital, Belfast.

At the opening meeting of the Belfast division of the British Medical Association for this session, held in the Medical Institute, Belfast, on Dec. 15th, the chairman, Dr. John Simpson, in his introductory address, gave a most interesting account of the origin and evolution of "the Forster Green Hospital for Consumption." A discussion followed on Tuberculosis, each speaker being limited to seven minutes. The following took part:—Professor T. Sinclair, Tubercle of the Serous Membranes; Sir John Byers, Tubercle in Relation to Pregnancy; Dr. W. Calwell, Susceptibility from a Clinical Standpoint; Dr. H. L. McKisack, Value of Physical Signs in the Estimation of a Lesion; Mr. A. B. Mitchell, Tubercle of the Stomach and Duodenum; Dr. Thomas Houston, Laboratory Diagnosis and Treatment; Dr. C. E. Shaw, Tubercle of the Larynx and Eye; and Mr. A. Fullerton, Tubercle of the Kidney. The chairman, in bringing the discussion to a close, spoke of the great value and interest of the work brought forward at that meeting.

Dec. 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Action of Ultra-violet Rays on Tuberculin and on Antituberculous Serums.

AT a recent meeting of the Biological Society M. Jousset said that the experiments of M. and Mme. V. Henry and of M. Baroni seemed to show that Koch's tuberculin was destroyed by prolonged exposure to ultra-violet rays. In reality the tuberculin was only rendered inactive; it lost its toxic properties, but retained the whole of its specific precipitating power with respect to the blood serum of immunised animals. This fact added another to the already existing proofs of the extraordinary power of tuberculin to resist destruction. On the other hand, antituberculous serums soon underwent important modifications under the influence of the same rays; the specific precipitating power disappeared in a few minutes, and in the course of some hours the serum became viscid and formed a jelly. This was, in the opinion of M. Henry, a change common to many colloid bodies. Moreover, when the irradiation was pushed a little further serum which had been rendered colourless by dilution assumed a dirty yellow tinge similar to that of serums which had been left in diffused daylight for many years. In this case it behaved as if it contained a true chromogenic substance.

Action for Damages against a Surgeon.

In these columns on Dec. 10th, p. 1731, I mentioned that Dr. Bazy had been ordered to pay 5000 francs damages to a female patient in whose abdomen he had inadvertently left two compresses measuring 1 metre in length and 30 centimetres in width. He immediately appealed against this decision, and has also brought the case before the Society of Hospital Surgeons, asking the society to consider whether it was possible—even on the hypothesis that the compresses had been forgotten in a cyst—for the cyst to become ulcerated, to set up ulceration of the intestine, and to allow the escape of two compresses of the dimensions above stated without ever producing any symptom of fæcal fistula. Such a sequence of events would imply the immediate formation of a permanent cicatrix, but of this the experts had not been able to find any trace. In the next place Dr. Bazy told the society that this decision would form a precedent which, by giving opportunities for blackmail, would threaten the independence of the profession every day, and that it would enable unscrupulous persons to live at the expense of surgeons. He also suggested that the society should take the requisite measures, and if necessary should enter into communication with the Government, so that surgeons might not be harassed in the practice of their profession. In the result the society decided to appoint a committee to consider the question.

The Age for Retiring from Practice.

Last January a collision occurred between a motor vehicle and the carriage of Dr. Cheurlot, who was seriously injured and for nine months unable to visit patients. The chauffeur of the motor vehicle was fined 50 francs, and the matter afterwards came before a court of law for the purpose of deciding on the damages to be paid to Dr. Cheurlot. He claimed 220,000 francs, of which 10,000 francs were assigned for medical attendance and medicine, 60,000 francs for the lost time during which he had not seen patients, and 150,000 francs for prospective diminution of his practice on account of his confinement to the house and his present condition of weakness which did not allow him to work as he had formerly done. The court awarded him only 60,000 francs, at the same time remarking that when medical men reached Dr. Cheurlot's age of 68 years, after a long, honourable, and prosperous career, most of them were desirous of taking their well-earned rest and of being less burdened with the fatigues of practice.

The Prix Lannelongue.

The Surgical Society has just awarded the Prix Lannelongue to Sir Victor Horsley of London. This prize is given every fifth year, without distinction of nationality, to the surgeon who has during the previous ten years accomplished the best surgical work.

A New Method of Extension in Fractures of the Limbs.

At a meeting of the Society of Paris Surgeons M. Dupuy de Fenelle showed a new apparatus for maintaining extension of the limbs by Steinmann's method. It was provided with two long points for deep insertion into the lower extremity of the bone for which lengthening was required. These two points slid on a bar and could be brought nearer to one another by means of two screws, an arrangement which allowed them to be introduced by degrees without using force; two rings carried the cord by which traction was made. This apparatus enabled continuous traction to be kept up in fractures complicated with much comminution. In more than 50 cases treated in foreign countries it has been employed for the correction of shortenings of a limb amounting to 8 or 10 centimetres. The use of this apparatus was indicated whenever other methods had failed. It was more simple than a cutting operation and could be applied under local anæsthesia.

Dr. Doyen's Dispensary.

At the conclusion of a course of lectures on immunity which he has delivered at the Hôtel des Sociétés Savantes Dr. Doyen announced that he is opening a free dispensary where all patients provided with cards from the *bureau de bienfaisance* of the city of Paris will receive treatment for tuberculosis and other infectious diseases, whether acute or chronic. Dr. Doyen has already been treating patients by his immunisation method for the last three years, and during that time 30,000 tubes of liquids for injection have been supplied to 900 medical men in the country districts and abroad who have treated 1020 patients, many of them being in an advanced stage of their illness. The general statistics show the following results for pulmonary tuberculosis in each of the three stages: in the first stage, 60 per cent. of recoveries in three months and 35 per cent. of cases improved; in the second stage, 25 per cent. of recoveries in six months and 60 per cent. of cases improved; and in the third stage, 8 per cent. of recoveries in six months and 60 per cent. of cases improved.

Dec. 19th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Death of Professor Franz König.

Professor Franz König, formerly professor of surgery at the Universities of Göttingen and Berlin, died in Berlin on Dec. 12th at the advanced age of 78 years. His last illness was of only a few days' duration, the cause of death being pneumonia. He became, after the death of Professor von Esmarch, the oldest of the German surgeons and one of the few who had been professors of surgery before the era inaugurated by Lister. He was born in 1832 at Rotenburg-on-Fulda, where his father held the appointment of medical attendant to the landgrave. He took

the degree of M.D. in 1855 at the University of Marburg and passed the State examination in the following year. After having held for a short time an assistantship at the medical clinic of that University, he went to Berlin for post-graduate study under the celebrated Professor Langenberg and the ophthalmologist, Professor Graefe, and in 1858 he became an assistant to Dr. Roser, professor of surgery in the University of Marburg. In 1860 he settled in Hanau as a medical officer of health, and at the same time became a surgeon to the hospital of that city. There he published a good many observations on clinical cases and on new operative methods, especially on wounds of the lungs, on stenosis of the rectum, and on tracheotomy for croup. His greater work, however, was on resection of the joints, which made him so well known in the surgical world that he was invited to become ordinary professor of surgery at the University of Rostock, where he remained till 1875, with only a short interruption, caused by the Franco-German war. In 1875 he was appointed ordinary professor of surgery at Göttingen, and resided there until 1895, when he was invited to succeed the late Professor Bardeleben at the University of Berlin. In 1904 he resigned his professorship and retired to Jena, afterwards returning to Berlin. Notwithstanding his great age he continued to attend the meetings of medical societies and to take part in the discussions. Professor König was the author of a large text-book of surgery, which was first published in 1876. This standard work, which was always kept up to date by the author, and of which the eighth edition has recently appeared, has been translated into several languages and has made the name of Professor König widely known.

Ehrlich's New Remedy "No. 606" in Internal Diseases.

At a recent meeting of the Verein für Innere Medicin Professor Michaelis read a paper on the administration and effects of Professor Ehrlich's new remedy "No. 606" in internal diseases. He said that he preferred to give it by intravenous injections and had employed this method in 35 cases. The injection was usually followed by slight shivering, and sometimes there was a rise of the patient's temperature for one or two days. This mode of administration was absolutely painless, whilst intramuscular injection caused severe pain and great infiltration. When given intravenously this substance was absorbed at once and was also eliminated rather quickly—namely, in from three to four days—but after intramuscular injection it remained a long time in the body. A toxic action did not occur in healthy persons, but patients weakened by an illness of long duration were liable to have their symptoms aggravated under the treatment; disorders of metabolism, heart disease, and acute Bright's disease were therefore contra-indications as regards this substance. A syphilitic patient could not be completely freed from the disease by a single injection; the injection must be repeated, and this must be done even although the Wassermann reaction has proved negative after the preceding injection, because it will very likely become positive in the course of a short time. An intermittent treatment must be adopted on the same principle as in treatment by mercury. Ehrlich's remedy has proved itself superior to mercury and iodine because of its quicker action; this was especially important in cases of gumma of the trachea, the liver, and the kidneys, in which it was essential that the threatening symptoms should disappear at once, leaving the systematic treatment of the patient for subsequent consideration. No benefit could be expected from the administration of "606" in cirrhosis of the liver, aneurysm, and amyloid degeneration, but it might be tried in syphilitic arterio-sclerosis. Cases of syphilitic periostitis and arthritis which had resisted treatment with mercury and iodine, often became better after an injection of "606," and the severe nocturnal pains might disappear. With regard to syphilitic affections of the central nervous system, Professor Michaelis stated that syphilis of the brain improved rapidly in certain cases; the vomiting stopped and the gait became less jerky. It was advisable to administer first a comparatively small dose to such patients, and to repeat it in from four to six weeks. He had treated 18 cases of tabes, the result being that the lancinating pains and the ataxy were frequently relieved for a period varying from two to four months, but reappeared afterwards: perhaps a second injection after that time would again be efficacious. In general paralysis he had seen one case in which there was a prompt remission persisting for three months, and after another injection the symptoms were again improved. In the discussion Professor Oppenheim pointed out that "606" was undoubtedly efficacious in syphilitic affections of the cerebro-spinal system, but not more so than mercury and iodine. In tabes the patient's general state sometimes became better and the pains diminished, but he had also observed an aggravation of the symptoms.

Dec. 19th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

The Improvement of Hygienic Conditions in Hungary.

THE cholera epidemic of this year has taught our Government a very useful lesson by showing that we were quite unprepared to deal with a serious epidemic, if such a one had occurred. Fortunately, however, the cases were mild enough not to claim too many lives. It is to be regretted that the bulk of our population pays little attention to the laws of hygiene. The young people learn elementary hygiene in the intermediate schools, and consequently believe in the infectious or contagious nature of some diseases, but the older men, and especially the women, cannot be persuaded of the necessity for disinfection. In some parts of the country the sanitary officials are regarded with so much disfavour that in a Hungarian village the medical officer, while engaged in disinfection, has even had to carry a loaded pistol in his hand. The National Public Health Committee has given instructions for the delivery of popular lectures on infectious diseases, their spread and their prevention, and on the advantages of disinfection. These lectures will be continued throughout the winter, because it is then that the rural population is most likely to have leisure for attendance at them. The ignorance of the peasantry with regard to these matters may be imagined from a description given by a village medical officer, who stated that public addresses on the methods of recognising and preventing cholera were delivered by him in all the villages throughout his district. Some of these villages were inhabited chiefly by Roumanians, of whom not less than 97 per cent. were quite illiterate. In such places the local magistrate, the clergyman, and perhaps one or two other persons presented themselves and laughed at him for advising them to wash their hands before meals, to wash their mouths, and to ventilate and whitewash their rooms. He, however, had a better reception in Hungarian or Schwabisch (German) villages, where his discourses were attended by a fairly large number of peasants, who were capable even of discussing some questions relating to public health. The report of this village medical officer led to the asking of a question in the Parliament, where the Minister of Instruction gave a conciliatory answer, saying that he would increase the number of elementary schools by about 100 per cent., and that he would enforce the regulations making school attendance compulsory. Should this promise be fulfilled the Roumanian villagers who have made their homes in Hungary will in course of time learn that they erred in drawing their knives and threatening to murder the medical officers if children suffering from scarlet fever were conveyed to an isolation hospital. A distinct advantage resulting from the cholera outbreak is that the towns and villages will be provided with good drinking water. In the Government Budget for next year several hundred thousand kronen are allotted for boring artesian wells in villages. Along the Danube hundreds of villages use river water for drinking purposes, and will consequently, in the event of an epidemic, be in danger of infection. The position of the village medical officers will also undergo considerable alteration in consequence of the cholera. Along the banks of the Danube the epidemic attacked many villages, where there had been no medical officers for a long time—in some places not even for many years. This is due to the very low salary given by the villages. The people expect that a man who has studied medicine for several years and been put to great expense before getting his diploma will settle in a village for the ridiculously small sum of 1000 kronen (£40) a year. Dr. Naday, writing in a recent issue of the *Orrosok Lapja*, says that more than 700 village medical officerships are vacant, and that in the event of a serious epidemic breaking out there would not only be great loss of life, but more money would be wasted than the payment of all the village medical officers for a decade would amount to. Dr. Naday's open letter was read by the authorities concerned, and a

response soon came in the form of a statement by the Minister of Internal Affairs to the effect that in the near future the medical officers in all the villages will have not only a uniform salary paid by the State, but also a fair pension. The minimum payment made by the State will be 2400 kronen (£100), rising by £20 every five years, and besides this fixed payment the villages will have to contribute in proportion to the number of their inhabitants. As an example of the popular feeling on this question, it may be mentioned that some comparatively wealthy villagers complained recently in a newspaper that they could not get rid of their medical officer, who was 83 years of age, and naturally incapacitated for work. They did not ask the county council to pension off this old practitioner, they merely asked the council to relieve them from continuing to pay his salary.

Tolstoy's Physician.

In their obituary notices of the distinguished Russian writer Tolstoy, the newspapers have mentioned, with regard to his enthusiastic adherent, Dr. Dusan Makoviczky, little more than that he was Tolstoy's family medical attendant and private secretary. In the issue of the *Journal of the Hungarian Medical Association* for Dec. 1st, 1910, Dr. Alexander Androvich, a personal friend and schoolfellow of Dr. Makoviczky (who, by-the-by, is a Hungarian by birth), gives some interesting details of his career as follows:—"Dr. Makoviczky practised in the 'nineties' at Zsolna in Upper Hungary, being then from 28 to 30 years of age. He was of middle size and slender build, with fair hair and beard, and blue eyes. He seemed to be a blend of the Slav and German type. Under an apparently morose exterior there dwelt in him a very mild and noble soul. He was spoken of in Zsolna as the 'curious eccentric.' He did not ask for fees either from rich or from poor, and it was only in exceptional cases that he could be induced to accept a modest payment. He gave the poor patients money, food, and medicines, as, in fact, he could afford to do, because his father was a very rich man, whose wealth was derived from cheese-making in Lipto, also in Upper Hungary. Dr. Makoviczky was highly educated. When only 25 years of age he was invited to become the first assistant at the surgical clinic at Innsbruck, but he declined the offer. He could give no reason why he refused this advantageous position; it seems that it was caprice. During the few years of his stay in Zsolna premonitory signs of his enthusiastic admiration for Tolstoy could be noticed. At this time he began to write in the Slav language pamphlets, the tendency of which was to combine scientific and idealistic Socialism; in a short time he began to approach the so-called 'Tolstoyism.' On account of his pamphlets he was prosecuted on a charge of Panslavism, but was acquitted after giving a satisfactory explanation of his views. He suddenly left Zsolna, and I did not hear anything about him until 1903, when Tolstoy's health was failing and the newspapers mentioned the name of Dr. Makoviczky as his medical adviser and intimate friend. No reference, however, was made to his Hungarian origin, and this fact was not known in Russia either, until a Hungarian reporter intending to interview Tolstoy was, to his surprise, addressed in Hungarian by the secretary. Dr. Makoviczky lived with Tolstoy for about seven or eight years." In conclusion, Dr. Androvich expressed his conviction that Tolstoy would never have a more enthusiastic admirer than Dr. Makoviczky has been.

Dec. 19th.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.—The council have received the following sums towards the repayment of the building debt: The Goldsmiths' Company, £100; the Mercers' Company, £52 10*s.*; Miss S. A. Turle, £200; F. C. N., £52 10*s.*; the late Mrs. Isabel Thorne, £50; Dr. May Thorne, £50; F. C. T., £50; Sir Charles Burt, £10 10*s.*; collected by Mrs. Starling, £74 1*s.*; and smaller sums amounting to £10 10*s.* The council has appointed Miss N. Laycock, B.Sc., to be demonstrator in biology, and Miss I. Pendlebury, B.Sc., to be demonstrator in physics for 1910–11. The St. Dunstan's Exhibition of £60 a year for three years has been awarded to Miss Lilian A. Clark of the City of London Girls' School, and the School Scholarship of £30 to Miss C. I. Fox of the Mount School, York, Miss K. Lloyd of the Welsh Girls' School, Ashford, being named *proxime accessit*.

Obituary.

WILLIAM HENRY CHARLES STAVELEY, F.R.C.S. ENG., L.R.C.P. LOND.

WE record with regret the untimely death of William Henry Charles Staveley, at 24, Sloane-gardens, Chelsea, in his forty-eighth year. He was born in London in 1863, the son of the late T. G. Staveley of the Foreign Office, was educated at Tonbridge School, and in 1881 joined the medical school of St. Thomas's Hospital. In 1886 he became M.R.C.S. Eng., L.R.C.P. Lond., and immediately obtained a series of house appointments, including that of house surgeon, a post which he filled with unusual distinction, earning the good opinion of all his seniors for ability and devotion to his work, while he obtained, what are not infrequently more elusive, the confidence of the patients and the esteem of the dressers and others who worked under him. Indeed, few St. Thomas's men won and retained so wide a circle of personal friends; none will be more widely missed or deeply regretted in this respect. His hospital career foreshadowed the success which awaited him in private practice, for he inspired in those who had the good fortune to become his patients similar confidence and regard.

Staveley took the Fellowship of the Royal College of Surgeons of England in 1890, and on leaving St. Thomas's Hospital was appointed resident clinical assistant at Bethlem Royal Hospital. He afterwards spent many months as resident medical officer at the Victoria Hospital for Children, where he did valuable work in connexion with intubation of the larynx, while with regard to the operation for adenoids, which was then in its infancy, he may be regarded as a pioneer. On leaving the Victoria Hospital he began general practice in the West End and established himself in South Eaton-place, afterwards removing to Sloane-gardens. It was not long before his sterling professional qualities and charming personality won for him a practice which was only limited by the exigencies of time and distance. To his patients he was all that a medical man can hope to be. Always hopeful and kindly, and gay on occasions, he was full of practical sympathy, generally knowing by intuition the best course to take, and always taking it steadily, clearly, and simply. Staveley had no pretensions, he never posed; but he knew his work, and how well he did it is shown by the trust which he inspired, by the general grief evoked by his early death, and by the fact that his brother practitioners believed in him implicitly and never envied him his success. He was an ideal general practitioner, and there can scarcely be higher praise for any member of modern society when we remember what is really signified by the phrase.

Staveley's health began to fail him of late years, tuberculous affection of the lungs compelling him on occasions to give up practice entirely, while it was difficult for him to work at the high pressure to which he had been accustomed. He went bravely on, cheery and undaunted by the illness which came upon him; a fine example of courage, ever ready with help and sympathy for those who wanted him, though his need was often greater than theirs. Like most men in busy general practice, he had little time for literary work, but he published several interesting papers in our columns and elsewhere, and in his early days edited, or rather re-wrote, "Gardner's Household Medicine." Away from his work he was a lover of country life and sport of many kinds, was a splendid swimmer, and an enthusiastic fisherman on sea and river. He attained European celebrity as a fencer, and in the most important competitions with foil or épée was always selected as a judge. He himself fought for England in more than one international competition. At the International Tournament at the Crystal Palace in 1904 he was chosen by all the foreign competitors to preside over the jury in the final pool for the International Épée Championship. He was entrusted in 1908 with the organisation of the foils display in connexion with the Olympic Games in London and the selection of the foil fencers who represented this country on that occasion. These important duties he discharged with complete success, his judgment and his absolute fairness remaining unquestioned.

We offer our sympathies to Mr. Staveley's family and many friends upon his untimely death, which followed upon an illness of terrible suddenness, acute septicæmic symptoms supervening on a small carbuncle. Doubtless his long-standing weakness had sapped his powers of resistance.

DR. H. HUCHARD.

FRENCH medical science has sustained a serious loss by the death of Dr. H. Huchard, who passed away on Dec. 11th at his residence at Clamart. He was born in 1844 at Auxon in the Aube. After being admitted *interne des hôpitaux* in the usual course, he graduated as doctor of medicine in 1875, became hospital physician in 1878, and in 1883 published jointly with Axenfeld a "Treatise on Nervous Diseases." He had, however, already devoted himself to the study of diseases of the heart and blood-vessels, and in 1884 he published a work on "Angina Pectoris," for which he was awarded the Prix Godard. He was from this time forth busily engaged at the Hôpital Necker, where he had a large following of students, but he nevertheless published numerous memoirs on various diseases of the heart and blood-vessels and on associated conditions. Most of these productions were incorporated in his "Clinical Treatise on Diseases of the Heart and Blood-vessels," which appeared in 1893, and for which he was awarded successively the Prix Montyon and the Prix Chateauvillard. In 1900 and 1906 he published two other volumes on clinical therapeutics, entitled "Medical Consultations," his other published works including "Treatment of Diseases of the Circulatory Apparatus," "Clinical Therapeutics," "New Medical Consultations," "Treatment of Diseases of the Heart," "Clinical Treatment" (written in conjunction with Dr. Fiessinger), and "Therapeutic Applications of Twenty Medicines." When arrangements were being made for the visit of the French medical men to London in 1904 he was one of its most zealous promoters. The high esteem in which he held his English professional brethren was well known, and he was fond of making jocular references to the *entente cardiaque et cordiale*. Dr. Huchard was a member of the French Academy of Medicine, an officer of the Legion of Honour, and one of the best-known French specialists on diseases of the heart. He founded and conducted the *Journal des Praticiens*, a widely read and highly appreciated periodical dealing with practical medicine. The announcement of his death evoked many expressions of sympathy and regret; he was very popular with his pupils and also with the general body of students, who had in him on all occasions a zealous defender of their rights.

Our Paris correspondent writes: "Before Huchard's discoveries the attention of medical men had been directed almost entirely to lesions of the cardiac orifices—lesions which were no more than residual conditions almost always inaccessible to treatment. To him belongs the merit of showing that many cases of heart disease are due to a functional disorder of the circulation which he called arterial hypertension and to arterio-sclerosis, of which this hypertension is only the first stage. Huchard fully recognised the importance of the conditions on which arterial hypertension depended, and showed that it might be reduced by the removal of these conditions, which are frequently amenable to treatment by hygienic measures and dieting. As he did not occupy any official chair in the Faculty of Medicine, it is the more to his credit that he was able to attract to his lecture room in the Hôpital Necker crowded audiences such as are not always to be seen in the great amphitheatre of the school. He was a master of the art of throwing light on the most difficult problems. In 1908, when he had reached the age limit for hospital physicians, he founded the clinic for diseases of the heart, where a great many medical men of all countries came for instruction, the clinical material being very large; since last June, however, he was unable to attend personally on account of ill-health. He was for 15 years the foremost consultant physician in France."

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Adolf Freiherr von La Valette St. George, formerly professor of anatomy in the University of Bonn, at the age of 79. He was a man of great general and scientific attainments, and with Waldeyer and O. Hertwig edited the *Archiv für Microskopische Anatomie*.—Dr. Frank Newell Lewis, professor of ophthalmology in the New York Post-Graduate School of Medicine.—Dr. Nathaniel Pendleton Dandridge, formerly professor of surgery in the Miami Medical College, Cincinnati.—Dr. F. Suter, a Swiss surgeon who had only a short time ago commenced his duties as professor of surgery in the University of Lima, Peru, suddenly; his age was 37.—Dr. Hieronymus Laub, who was for many years the Director-General of the Danish Army Medical Service, aged 72.—Dr. M. von Cube, who belonged to Livonia, and practised for many years in St. Petersburg, but for a long time past has been one of the best known physicians in Mentone. His age was 79.—Dr. H. Huchard, the eminent Paris physician.—Dr. Labrousse, a French senator.

Medical News.

UNIVERSITY OF OXFORD.—In the recent examination for the degree of Bachelor of Medicine the following candidates were approved:—

FIRST B.M. EXAMINATION.

Organic Chemistry.—W. G. V. Blogg, K. G. Bowes, L. R. Broster, L. G. Brown, W. H. Butcher, J. B. Cavenagh, R. W. J. A. Cushing, J. F. Haynes, R. J. Inman, O. G. Parry-Jones, P. P. Reitlinger, S. W. F. Underhill, H. St. H. Vertue, and D. M. P. Whitcombe.
Human Anatomy and Physiology.—A. C. Ballance, C. H. Carlton, J. C. Davies, A. W. Dennis, C. H. L. Harper, A. L. Pearce-Gould, T. O. Thompson, and T. A. Townsend.

SECOND M.B. EXAMINATION.

Materia Medica and Pharmacology.—H. T. Evans, R. A. Fawcus, D. P. McDonald, W. R. Reynell, and R. C. Wingfield.
Pathology.—H. C. Bazett, W. H. Bleaden, N. G. Chavasse, P. L. Gibson, E. G. Martin, G. E. Neligan, and W. J. Pearson.
Forensic Medicine and Public Health.—A. R. Chavasse, W. A. Cooke, G. E. Downs, H. J. B. Fry, A. D. Gardner, P. L. Gibson, G. W. Johnson, G. E. Neligan, E. O'Connor, E. L. Pearce-Gould, J. F. Penson, and R. C. Wingfield.
Medicine, Surgery, and Midwifery.—R. F. B. Bowes, A. W. Donaldson, G. E. Downs, G. W. Johnson, E. P. Poulton, A. S. Roe, and R. C. Wingfield.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations held recently the following candidates were successful:—

THIRD M.B. EXAMINATION.

General Pathology and Morbid Anatomy.—F. S. Beadle, *R. B. Berry, *A. G. Bryce, G. C. Dixon, Geoffrey Fildes, W. H. Kauntze, J. A. Lees, *P. H. Midgley, *T. H. Oliver, *S. B. Radley, L. W. Sparrow, C. F. White, *A. G. Wilkinson, and H. D. Willis.
* Distinction in Pathology.

SECOND M.B. AND CH.B.

Alan Barrett, F. A. Bearn, J. G. Bennett, E. S. Brentnall, F. S. Charnock, H. F. Hutchinson, Harold Kempsey, Eugene Leahy, W. L. Nicholson, T. P. Robertson, H. A. Sandiford, Cornelius Thompson, F. K. Tomlinson, C. H. Whittall, H. W. F. Williams, and G. W. Wood.
Anatomy.—L. B. Baird, F. L. Newton, and Ernest Talbot.
Physiology.—Harman Taylor.

THIRD B.D.S. EXAMINATION.

T. A. B. Corless.

DIPLOMA IN DENTISTRY (THIRD EXAMINATION).

H. D. Firth, Arnold Gibson, C. S. Harding, Harry Lyth, W. J. Piper, C. H. Plummer, Thomas Rothwell, and A. B. Tough.
Anatomy and Physiology.—D. M. Lawrie.
Dental Anatomy and Histology.—S. G. Ross.

UNIVERSITY OF LIVERPOOL.—At the examination for the Diploma in Tropical Medicine held recently the following candidates were successful:—

E. Brabazon, L. Castellino, J. A. Caulcrick, W. E. Haigh, H. F. Hamilton, W. St. M. Hefferman, A. Hipwell, J. Homer, W. M. Houston, D. P. Johnstone, A. G. Macdonald, C. C. Murison, P. D. Oakley, I. C. Pratt, E. L. Sieger, P. J. de Sousa, and J. H. Waterhouse.

FOREIGN UNIVERSITY INTELLIGENCE.—*Algiers:* Dr. Poujol, Professor *agrégé* in Montpellier, has been appointed Professor of Pathological Anatomy and Histology in succession to Dr. Weber.—*Atlanta (College of Physicians and Surgeons):* Dr. Justin F. Grant has been appointed Professor of Embryology and Histology; and Dr. W. W. Funk, of Philadelphia, Adjunct Professor of Bacteriology.—*Buffalo:* Dr. E. A. Bowerman has been appointed Lecturer on Hygiene.—*Catania:* Dr. Giovanni Alonzo has been recognised as *privat-docent* of Pathological Histology.—*Genoa:* Dr. Giovanni Romanelli has been recognised as *privat-docent* of Internal Pathology and Dr. Mari Vittorio Maragliano as *privat-docent* of Physical Therapeutics.—*Halle:* Dr. Theodor Heynemann has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Harvard:* Dr. Harvey Cushing, of Johns Hopkins University, has been appointed to the chair of Surgery.—*Marburg:* Dr. W. Zangemeister, of Königsberg, has been appointed to the Chair of Midwifery and Gynæcology

in succession to Dr. Stöckel.—*Naples:* Dr. Giuseppe Giordano has been recognised as *privat-docent* of Topographical Anatomy and Operations: and Dr. Raffaele D'Alise as *privat-docent* of Odontology.—*Parma:* Dr. Luigi Carozzi has been recognised as *privat-docent* of Trade Diseases.—*Philadelphia (University of Pennsylvania):* Dr. Richard M. Pearce, Professor in the University and Bellevue Hospital Medical College of New York, has been appointed Professor of Pathological Anatomy and Experimental Medicine. Dr. A. E. Taylor, Professor in San Francisco, has been appointed Professor of Physiological Chemistry.—*Toulouse:* Dr. Ribaut, Professor *agrégé*, has been promoted to the chair of Pharmacy.—*Yale:* Dr. Yandell Henderson has been appointed Professor of Physiology.—*Zürich:* Dr. F. Sauerbruch, of Marburg, has been appointed to the Chair of Clinical Surgery in succession to Dr. Krönlein.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. Joseph H. Houldsworth of Glasgow, the London Homœopathic Hospital will receive £5000, while the Glasgow Royal Infirmary, the Western Infirmary, Glasgow, the Victoria Infirmary, Glasgow, the Royal Glasgow Asylum for the Blind, the Broomhill Home for Incurables, the Royal Hospital for Sick Children, Glasgow, and the Ayr County Hospital will each receive £1000.—The late Mrs. E. A. Freeman has, among other charitable bequests, left £1000 to the Halifax Infirmary, £1000 to the Royal Albert Idiot Asylum, Lancaster; and £500 to the Royal Bath Hospital, Harrogate.—By the will of Mr. Frederick Bloomenthal, some £30,000 have been left for charitable purposes, and the following institutions will receive about one-sixteenth of that sum: London Hospital, Guy's Hospital, St. Bartholomew's Hospital, St. Thomas's Hospital, St. George's Hospital, Westminster Hospital, Charing Cross Hospital, Royal Free Hospital, Gray's Inn-road, the Cancer Hospital, and Brompton Hospital for Consumption.—Sir Henry Harben has sent to St. Mary's Hospital, Paddington, a further donation of £1000 in memory of the late Mr. H. A. Harben; and to St. Bartholomew's Hospital £500 for the general funds of the hospital, and £500 for the Nurses' Home Rebuilding Fund.—The late Mr. H. Silver, the *Punch* artist, among other bequests, made the following: £50,000 to the Royal Free Hospital, Gray's Inn-road; £25,000 to the Royal Victoria Hospital for Children, Chelsea; £25,000 to the Hospital for Children, Great Ormond-street; and £2000 to the West London Workshops for the Blind.—Under the will of the late Miss Isabella L. Boustred the Seamen's Hospital Society, Greenwich, will receive £1000, the Royal Hospital for Incurables and the Hospital for Sick Children, Great Ormond-street, £200 each.

METROPOLITAN HOSPITAL SUNDAY FUND.—The annual meeting of the constituents of the Metropolitan Hospital Sunday Fund was held at the Mansion House under the presidency of the Lord Mayor on Dec. 16th. Sir John Bell, in moving the adoption of the report (already summarised in THE LANCET, Dec. 10th, p. 1725), said although the total of the Fund was less than last year, that was mostly accounted for by the fact that no legacies had been received. The Rev. P. Clementi-Smith seconded the resolution. The Rev. D. S. Lewis asked for information with regard to the grant to St. George's Hospital. Sir William Church, chairman of the Distribution Committee, said that the award was made upon exactly the same terms and bases as those to all the other hospitals in accordance with the sum expended on maintenance of its patients. The smaller grant to the hospital last year was due to an exceptionally large number of legacies, which placed its accounts on the right side of the ledger. The Rev. D. S. Lewis then moved as an amendment that the report be adopted, with the exception of the grant of £1545 to St. George's Hospital, which should be referred back to the Distribution Committee for further consideration, and that the committee should report to the general meeting called for the purpose, after King Edward's Hospital Fund had publicly declared itself satisfied with the financial relations between the hospital and the medical school. After some discussion the amendment was lost by 18 votes to 38 and the report carried by an overwhelming majority. The council for the year was re-elected, with the addition of the Rev. W. S. Swayne, and Sunday, June 18th, was fixed for Hospital Sunday next year. The proposal to increase the percentage of the Fund allocated to the purchase of surgical appliances from 5 to 7½ per cent. was adopted unanimously, and a vote of thanks to the Lord Mayor terminated the proceedings.

SOME FAILURES WITH "606" IN RUSSIA.—At a meeting of the Public Health Society, St. Petersburg, Dr. P. P. Yakoblieff gave a report on the Ehrlich preparation "606" and its application to children at the breast and to nursing mothers. He described six cases involving six children, of whom three were injected directly, and the nursing mothers of the other three were similarly treated. In neither series was the rapid betterment noted that has been ascribed to the remedy elsewhere. In the cases of the direct injections, ulcers were formed and the remedy was slowly absorbed. Only two of them appeared to improve, and that very slowly. In the third case no difference at all was observed. In the cases of the nursing mothers the eruptions subsided and began to heal, but did not disappear. In the discussion following on the reading of the report Professor V. O. Hubert said that the disappointing results might be due to special conditions, such as insufficient doses of the remedy. But even he had to report a case of a young man, aged 18 years, who, duly inoculated, relapsed after a short time. Other speakers confirmed the ineffective result of arsenobenzol in cases of infants at the breast.

THE LEAGUE OF MERCY.—On Dec. 19th, at the Middlesex Hospital, Lord Farquhar presided over the eleventh annual meeting of presidents of the league. In opening the proceedings the chairman read a letter from the King's secretary, in which His Majesty expressed his unabated interest in the work of the League of Mercy. On the motion of Mr. Carl Hentschel, seconded by Mr. B. S. Straus, Lord Farquhar was appointed chairman of the next annual meeting, Mr. Frederick Green vice-chairman, and Colonel H. B. Hamilton honorary secretary. In his financial statement Sir Henry Burdett, honorary treasurer, said that the year had been a bad one for the purposes of the league. The total result of the collections had been £20,000, as compared with £21,606 last year. The total amount contributed by the league to the London hospitals through the King's Fund in the last 11 years was £153,000. The total the league had given to the country hospitals was £7660, making a grand total of £160,000. The districts presided over by members of the Royal Family had produced a total of £27,238. The Duchess of Somerset suggested the formation of sub-committees for the purpose of organising bodies of workers on behalf of the league, and asked for an assurance that the money collected by the League was spent solely in the interests of the sick poor. Sir William Collins said, on the authority of those responsible for the management of the King's Fund, that no money handed over by the League to the Fund was diverted to medical schools.

BOOKS, ETC., RECEIVED.

AMERICAN MEDICAL PUBLISHING CO., 84, William-street, New York City.

Pneumonia. A Symposium on the Occurrence, Etiology, Diagnosis, Prognosis, and Treatment of Pneumonia. Reprinted from *American Medicine*, April, 1910. Arranged and edited by H. Edwin Lewis, M.D. Price not stated.

CHURCHILL, J. AND A., London. THE LIVERPOOL BOOKSELLERS' CO., LIMITED, 70, Lord-street, Liverpool.

The Dawn of the Health Age. By Benjamin Moore, M.A., D.Sc., M.R.C.S., L.R.C.P. Price 3*s.* 6*d.* net.

ENGELMANN, WILHELM, Leipzig.

Gehirn und Rückenmark. Leitfaden für das Studium der Morphologie und des Faserverlaufs. Von Dr. med. Emil Villiger. Zweite Auflage. Price M.12.80.

FISCHER, GUSTAV, Jena.

Sammlung Anatomischer und Physiologischer Vorträge und Aufsätze. Herausgegeben von Prof. Dr. E. Gaupp und Prof. Dr. W. Nagel. Heft 12. Die Elemente des Herzmuskels. Von Prof. Dr. A. Dietrich, Charlottenburg. Price M.1.20.

Vergiftungen durch Pflanzen und Pflanzenstoffe. Ein Grundriss der vegetalen Toxikologie für praktische Aerzte, Apotheker und Botaniker. Von Freiderich Kanngiesser, Dr. med. et phil. Price M.1.

Lehrbuch der Chirurgie. Herausgegeben von Prof. Wullstein und Prof. Wilms. Zweite umgearbeitete Auflage. Erster Band: Allgemeiner Teil. Chirurgie des Kopfes, des Halses, der Brust und der Wirbelsäule. Price, paper, M.10; bound, M.11.

Die Krankheiten der Warmen Länder. Ein Handbuch für Aerzte. Von Dr. B. Scheube, Geh. Medizinal-Rat in Greiz. Vierte umgearbeitete und erweiterte Auflage. Price, paper, M.22.50; bound, M.25.

GEORG ET CIE, 10, Corraterie, Geneve; et à Bâle. ALCAN, FELIX, Paris.

Leçons de Chirurgie de Guerre; des Blessures faites par les Balles des Fusils. Par J. L. Reverdin, Professeur à la Faculté de Médecine de Genève. Préface de H. Nimier, Médecin-inspecteur. Price Fr.7.50.

GREEN, WILLIAM, AND SONS, Edinburgh.

The Cancer Problem. A Statistical Study. By C. E. Green, F.R.S.E. Price not stated.

HIRSCHWALD, AUGUST, Berlin.

Sammlung Klinischer Abhandlungen über Pathologie und Therapie der Stoffwechsel- und Ernährungsstörungen. Herausgegeben von Prof. Dr. Carl von Noorden. 9 und 10 Heft. Die Vagotonie. Eine klinische Studie. Von Privatdozent Dr. Hans Eppinger und Dr. Leo Hess (Wien). Price M.2.80.

KARGER, S., Berlin.

Die Wassermannsche Reaktion mit besonderer Berücksichtigung ihrer klinischen Verwertbarkeit. Von Priv.-Doz. Dr. Harald Boas, I. Assistenten am Rudolf Berghs-Hospital für venerische Krankheiten in Kopenhagen. Mit einem Vorwort von Geh. Rat Prof. Dr. A. Wassermann. Price, paper, M.5.60; bound, M.6.80.

Diagnostik der Nervenkrankheiten. Von Dr. L. E. Bregman. Mit einen Geleitwort von Hofrat Prof. Dr. H. Obersteiner in Wien. Price, paper, M.12; bound, M.13.60.

Theorie und Praxis der Inneren Medizin. Ein Lehrbuch für Studierende und Aerzte. Von Dr. Erich Kindborg in Bonn. Erster Band. Die Krankheiten der Zirkulations- und Respirationsorgane. Price, bound, M.7.

LEHMANN'S VERLAG, J. F., München.

Beiträge zur Praktischen Chirurgie. Bericht über die Jahre 1907, 1908, 1909, aus der Chirurgischen Privatklinik von Dr. Krecke in München. Price M.7.

Die Krankenkost. Ein praktisches Handbuch für Aerzte. Kranken- und Wohlfahrtsanstalten, Sanatorien, Pflegepersonen, Erziehungsanstalten und für die Familie. Von Emilie Kieslinger, Wien, und Dr. Karl Wirth, Wien. Price, paper, M.3.60; bound, M.4.60.

Vorlesungen über Magen- und Darmkrankheiten. Von Hofrat Dr. Friedrich Crämer. 5 Heft. Das runde Magengeschwür. (Ulcus ventriculi rotundum). Von Hofrat Dr. Friedrich Crämer. Price M.4.50.

MARHOLD, CARL, Halle a.S.

Besteht ein ätiologischer Zusammenhang zwischen parenchymatöser Keratitis und Verletzung? Von A. Vossius in Giessen. Price M.1.

Klinik für psychische und nervöse Krankheiten. Herausgegeben von Robert Sommer, Dr. med. et phil. V. Band. 3 Heft. Price M.3.

MASSON ET CIE, Paris.

Précis de Parasitologie. Par E. Brumpt. Préface par M. le Professeur R. Blanchard. Price Fr.12.

MURRAY, JOHN, London.

Induced Cell-Reproduction and Cancer. The Isolation of the Chemical Causes of Normal and of Augmented, Asymmetrical Human Cell-Division. By Hugh Campbell Ross, M.R.C.S. Eng., L.R.C.P. Lond., Surgeon, Royal Navy (Emergency List); Director of Special Researches at the Royal Southern Hospital, Liverpool; and Honorary Clinical Pathologist to the Royal Liverpool Country Hospital for Children. Being the Results of Researches carried out by the Author, with the Assistance of John Westray Croppet, M.B., M.Sc. Liv., M.R.C.S. Eng., L.R.C.P. Lond., Assistant to the Research Department of the Royal Southern Hospital, Liverpool. With Illustrations. Price 12*s.* net, cash.

STEINHEIL, G., Paris.

Recherches expérimentales sur les Tumeurs Malignes. Par le Docteur Jean Clunet. (Travail du Laboratoire d'Anatomie Pathologique de la Faculté de Médecine de Paris.) Price Fr.8.

Le Tronc Cœliaque. Par Pierre Descomps, Prosecteur des Hôpitaux. (Travail de l'Amphithéatre d'Anatomie des Hôpitaux. Recherches d'Anatomie Chirurgicale sur les Artères de l'Abdomen.) Price Fr.10.

THE ERNST HOMŒOPATHIC CONSULTING-ROOMS AND DISPENSARY, 15, Pall Mall East, London, S.W.

Oxyuris Vermicularis (The Threadworm). A Treatise on the Parasite and the Disease in Children and Adults, together with Particulars of a Rapid, Harmless, and Reliable Cure. By Maurice Ernst, LL.D. Vienna, Consulting Homœopath. Price 1*s.*

THE WALTER SCOTT PUBLISHING CO., LIMITED, London and Felling-on-Tyne.

The Contemporary Science Series. Edited by Havelock Ellis. The Jews: A Study of Race and Environment. By Maurice Fishberg, Fellow of the New York Academy of Sciences, Member of the American Ethnological Society, &c. Price 6*s.*

THIEME, GEORG, Leipzig.

Die Zeugung beim Menschen. Eine sexualphysiologische Studie aus der Praxis. Von Dr. med. Hermann Rohleder, Spezialarzt für Sexualleiden in Leipzig. Mit Anhang: Die künstliche Zeugung (Befruchtung) beim Menschen. Price M.7.

URBAN UND SCHWARZENBERG, Berlin und Wien.

Lehrbuch der Augenheilkunde in der Form klinischer Besprechungen. Von Dr. Paul Römer. Price, paper, M.20; bound, M.22.

Interne Klinik der Bösartigen Neubildungen der Bauchorgane. Von Priv.-Doz. Dr. Rudolf Schmidt. Price, paper, M.12; bound, M.14.

VERLAG "ERIKA," Magdeburg. (Kommissionär: O. WEBER, Leipzig.)

Lehrbuch der Trichinen und Finnenschau. Von Carl Schroeder, Direktor des städtischen Schlachthofes zu Salzwedel. Price, paper, M.1.40; bound, M.1.80.

VINTON AND CO., LIMITED, 8, Bream's-buildings, Chancery-lane, London, E.C.

Live Stock Journal Almanac for 1911. Price 1*s.*

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BREWIS, ROBERT ADAMS, M.D., C.M. Edin., has been appointed Medical Officer of Health by the Dursley (Gloucestershire) Rural Council.

CAMPBELL, R. H., M.B., B.S. Glasg., has been appointed Clinical Assistant to the Samaritan Free Hospital.

DUNN, J. C., has been appointed Clinical Assistant to the Samaritan Free Hospital.

HEATON, GEORGE, M.B. Oxon., F.R.C.S. Eng., has been appointed Examiner in Surgery to the University of Oxford.

JOLL, CECIL A., M.B., B.S. Lond., F.R.C.S. Eng., L.R.C.P. Lond., L.D.S. Eng., has been appointed Senior House Surgeon to the Leicester Infirmary.

LEY, BERNARD, M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Samaritan Free Hospital.

LYLE, H. WILLOUGHBY, M.D., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Ophthalmic Surgeon to King's College Hospital.

MEACHEN, G. NORMAN, M.D., B.S. Lond., M.R.C.P. Lond. & Edin., has been appointed Honorary Physician for Diseases of the Skin to the Foundling Hospital, London.

MOISER, LIONEL HENRY, M.B. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the Central District by the Crediton (Devon) Board of Guardians.

SHANNON, DAVID, M.B., B.S. Glasg., has been appointed Visiting Surgeon to the Royal Samaritan Hospital for Women, Glasgow.

STEPHEN, LESLIE DECHMONT, M.B., C.M. Edin., has been appointed Deputy Medical Officer for the Nunney District by the Frome (Somerset) Board of Guardians.

TODD, DAVID BANSALL, M.B., B.Ch. Oxon., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer by the Kingsbridge (Devon) Board of Guardians.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BRISTOL DISPENSARY.—Medical Officer.

BRISTOL ROYAL INFIRMARY.—Dental House Surgeon. Salary £100 per annum, with apartments, board, and laundry.

CAIRO, EGYPT.—Medical Tutor at School of Medicine and Registrar to Kasr-El-Ainy Hospital. Salary £E.600 a year.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—House Surgeon for six months. Also Second House Surgeon.

CANCER HOSPITAL, Fulham-road, London, S.W.—Surgical Registrar. Salary 50 guineas per annum. Also House Surgeon for six months. Salary £70 per annum.

CHELTENHAM GENERAL HOSPITAL.—Resident Surgeon. Salary £180 per annum, with rooms, coal, and gas.

DERBYSHIRE ROYAL INFIRMARY.—House Physician and Second House Surgeon for 12 months. Salary in each case £100 per annum, with apartments, board, &c. Also Assistant House Surgeon for six months. Salary at rate of £60 per annum, with apartments, board, &c.

DUBLIN JOINT HOSPITAL BOARD CONSUMPTIVE SANATORIUM, Crooksling, Brittas, Co. Dublin.—Resident Medical Superintendent. Salary £200 per anuum, with board and residence.

EARLSWOOD ASYLUM, Redhill.—Junior Assistant Medical Officer, unmarried. Salary £130, with board, lodging, and washing.

ESKDALEMUIR PARISH COUNCIL.—Medical Officer. Salary £30 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London, S.E.—Clinical Assistants for three months. Also House Surgeon. Salary at rate of £60 per annum, with board, residence, and washing.

HAMPSTEAD GENERAL HOSPITAL.—House Physician for eight months. Salary at rate of £70 per annum, with board and residence.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with residence, board, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Assistant Casualty Medical Officer (and House Physician), unmarried, for six months. Salary £30, with board, residence, &c. Also House Surgeon, unmarried, for six months. Salary £30, with board, residence, &c.

LINCOLN, LINDSEY COUNTY COUNCIL.—Assistant School Medical Inspector. Salary £300 per annum.

LIVERPOOL EYE AND EAR INFIRMARY, Myrtle-street.—Honorary Assistant Surgeon.

LUTTERWORTH UNION.—District Medical Officer and Public Vaccinator. Salary £40 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham Hill-road.—Honorary Ophthalmic Surgeon. Also Anæsthetist. Salary £15 per annum.

NATIONAL HOSPITAL FOR THE RELIEF AND CURE OF THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.—Honorary Anæsthetist.

NEWCASTLE-ON-TYNE, HOSPITAL FOR SICK CHILDREN.—Honorary Assistant Physician.

NEWCASTLE-UPON-TYNE, CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Assistant. Salary £125 per annum, with board, lodging, &c.

NEWCASTLE-UPON-TYNE EDUCATION COMMITTEE.—Second Assistant Medical Officer. Salary £250 per annum.

PADDINGTON AND KENSINGTON DISPENSARY FOR THE PREVENTION OF CONSUMPTION.—Assistant Medical Officer. Salary £100 per annum.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Surgeon.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

READING, BERKSHIRE EDUCATION COMMITTEE.—Assistant Medical Inspector of Schools. Salary £300 per annum.

ROTHERHAM HOSPITAL.—Senior House Surgeon. Salary £110 per annum, with board, lodging, and washing.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, Cavendish-square.—Honorary Dental Surgeon. Also Honorary Anæsthetist.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £50 per annum, with board, lodging, and washing.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

SUNDERLAND INFIRMARY.—House Physician. Salary £80 per annum, with board, residence, and washing.

WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith-road, London, W.—Clinical Assistants. Also Three non-resident Assistant House Surgeons.

Births, Marriages, and Deaths.

BIRTHS.

DAVIDSON.—On Dec. 18th, at Baron's Court-road, W., the wife of G. G. Davidson, M.D., of a daughter.

SIKES.—On Dec. 12th, at Moat House, Langley, Bucks, Mary Maitland (*née* Somerville), wife of Alfred W. Sikes, M.D., D.Sc. Lond., of a son.

MARRIAGES.

ELLIOT—LOVEDAY.—On Dec. 17th, at St. Mary's Church, Bryanston-square, by the Rev. C. V. Childe, M.A., LL.D., and the Rev. L. J. Percival, M.A., Andrew Elliot, M.D., M.R.C.P., of 110, Gloucester place, Portman-square, W., to Mary Louisa, younger daughter of William Loveday, Esq., of The Poplars, Irthlingborough, Northamptonshire.

FENWICK—STOCKDALE.—On Dec. 17th, at St. Martin's-in-the-Fields, Trafalgar-square, by the Rev. H. Rose, M.A., William Stephen Fenwick, M.S., F.R.C.S., 81, Harley-street, W., only son of Thos. Fenwick, of Southampton, to Enid Stockdale, third daughter of Thos. Stockdale, Spring Lea, Leeds.

HAWKINS—RYND.—On Dec. 17th, at St. Mary's, Kells, Co. Kilkenny, Herbert Pennell Hawkins, M.D., F.R.C.P., to Hester Vera Rynd, niece of Colonel W. H. Izod, D.L., J.P., of Chapel Izod House, Co. Kilkenny.

OUSTON—TAYLOR.—On Dec. 16th, at St. Andrew's Church, Bath, by the Rev. Prebendary Stone, Thomas George Ouston, F.R.C.S., of Newcastle-upon-Tyne, to Mary Taylor, second daughter of Edward Taylor, of Ayrton, Yorkshire.

DEATHS.

BRUSHFIELD.—On Nov. 28th, after a short illness, at his residence, The Cliff, Budleigh, Salterton, T. N. Brushfield, M.D., F.S.A., formerly Superintendent at Chester and Brookwood Asylums, aged 81.

POLLOCK.—On Dec. 18th, at 37, Collingham-place, S.W., James Edward Pollock, M.D., F.R.C.P., in his 93rd year. Funeral at Highgate Parish Church, Thursday, Dec. 22nd, at 2 o'clock, and burial in Highgate Cemetery.

STAVELEY.—On Thursday, Dec. 15th, at 24, Sloane-gardens, in his 48th year, William Henry Charles Staveley, F.R.C.S., son of the late T. G. Staveley, Esq., of the Foreign Office.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

RESCUE WORK IN MINES.

Mr. R. A. S. Redmayne, M.Sc., Chief Inspector of Coal and Metalliferous Mines, in his report to the Home Office for 1909, just issued as a Parliamentary paper, refers to the recommendation of the Royal Commission on Mines that in each district there should be appointed committees of colliery owners to provide for the erection of stations and training of men, and that a handbook might be drawn up containing instructions in rescue work. He records with satisfaction that there has been an increased and welcome desire evinced on the part of coal-owners to meet the needs of colliery districts in the establishment and organisation of stations for the training of rescue brigades, in the use of breathing appliances, and in general mine rescue work. The improvement is, however, much more marked in some districts than in others. Mr. Redmayne selects for special commendation the system in operation at Howe Bridge Rescue Station in Lancashire, which is enjoying the support of a large majority of the Lancashire and Cheshire coal owners. The station in question is now in complete working order. Since the training was started on Oct. 26th, 1908, no fewer than 269 men, drawn from 30 different firms, have been trained, and of these 136 have passed their re-examination, which is held 12 months after the teams have qualified in the use of the apparatus and obtained their certificates, and about 50 men are at present undergoing the course of training. The type of apparatus used is the (Siebe Gorman) "Fleuss," slightly modified in respect of certain details. A code of recommendations and rules has been drawn up with a view to ensuring proper discipline, and so limiting the rescuers to only unavoidable risks. Amongst these recommendations and rules are the following:—

The men chosen for rescue work should be intelligent, healthy, from 25 to 50 years of age, should be ambulance trained and kept efficient in ambulance work. They should not be of a nervous temperament, and the teams should be chosen from the different shifts of surface as well as underground workmen, and all should reside as near the colliery as possible. Before admission for training all men must be medically examined, and the examination should be repeated each year. With the view of maintaining the efficiency of the teams, periodical practices with the apparatus, both at the colliery and the station, are recommended. The following apparatus and stores should be provided and maintained at every colliery in constant readiness for use:—

1. Seven, but not less than five, complete sets of apparatus with oxygen cylinders ready charged. Each man should have his own mouthpiece, to be kept on a peg, with his name written over it.
2. Spare oxygen cylinders fully charged.
3. Supply of best anhydrous caustic soda in hermetically sealed bottles.
4. Spare nose clips, masks, and mouthpieces.
5. Goggles for use in smoke.
6. The necessary electric lamps, with spare accumulators.
7. An oxygen reviving apparatus.
8. A regulation sling chair or saddle for descending the shaft when the cages are jammed or not available.
9. A regular stretcher.
10. A first-aid ambulance case.
11. A few tins of compressed sulphurous acid.

It is advisable that at each colliery there should be some room prepared which could be simply and quickly rendered comparatively air-tight and converted into a testing-room, where each man could test his apparatus in a noxious atmosphere. For this purpose a few tins of compressed sulphurous acid should be kept with the other stores. It is also advisable that a convenient room or rooms should be selected at each pit, which in case of accident could quickly be prepared for the accommodation of the rescue teams, and where they could wait their turn, eat, and, if necessary, sleep. It is very desirable that an interval of three hours shall have elapsed since the last meal before a man works with the apparatus. The man appointed by the colliery to be responsible for the upkeep of the apparatus, or the sergeant-instructor of the station, shall go through the following list of cardinal rules one by one with each member of the team in turn previous to his using the apparatus:—

(*a*) Before putting on apparatus inquire if each man is in his ordinary state of health. False teeth to be removed. At least 120 atmospheres to be in the oxygen cylinder. Four pounds of hard dry pure caustic soda to be in the breathing bag. All joints to be tightly screwed up and rigid. Try the three valves (main, gauge, by-pass) and see that they work freely.

(*b*) After putting on apparatus, buckle belts and adjust the apparatus, leaving nose clip off. Test the apparatus by turning on main valve, fill breathing bag three parts full, close main valve, close the mouthpiece at the same time with the tongue, then press the bag evenly with both hands, and listen for any escape of gas. On removal

of the hands, see that the bag is in the same condition—viz., that it holds the same quantity of gas. Put nose clip on and test apparatus in room provided filled with noxious gas. An electric lamp, a pair of goggles, and a lump of chalk should be carried by each team, and a small metal flask of brandy by No. 2.

When exploring, the distance between each man should not exceed four yards, and the whole team must keep absolutely together. Unless expressly ordered by the manager, no team must advance more than 200 yards from the base, nor be absent for a longer period than 20 minutes. Any hard work should be equally shared, if possible, so as to equalise the supply of oxygen in the cylinders. As soon as any member of the team has used up one-half of his supply of oxygen the whole party must return. No man must use the apparatus more than one shift of two hours in every 24 hours. In no circumstances should the mouthpiece be removed after leaving the base. When one member of the team breaks down from any cause the whole party must return at once. Should any member of the team feel distressed he should report the same on his return to the officer in charge, and should not be asked to use the apparatus again until he has submitted himself for examination by the medical officer.

The inspector mentions that there are several types of breathing apparatus in use at rescue stations, and opinions differ as to which is the most efficient. At several centres experiments are being carried out with a view of determining the merits of the respective types, and the council of the Royal Society of Arts, with a view of encouraging research in this direction, has offered a gold medal or a prize of £20 for life-saving in mines under certain conditions.

In reference to the remark of the Royal Commissioners that a knowledge of ambulance work or "first-aid" is probably of greater value in mining than in any other occupation, Mr. Redmayne observes:—"The work already carried out by the Order of St. John of Jerusalem in England and Wales, and in Scotland by the St. Andrew's Ambulance Association, is well known, and in respect of the Durham and Yorkshire mining districts has been especially marked. In the former district the number of persons employed in and about mines and quarries holding first-aid certificates was 3517, and 5257 cases of injury were treated during the year, the number of classes held during the year being 68, which were attended by 1155 students, of whom 494 obtained certificates. Although throughout the mining districts generally greater interest now appears to be taken in ambulance work than was the case a few years ago, the subject should be far more widely taught than it is, and colliery owners and managers can do much to awaken and stimulate interest in the work at their mines by organising competitions as between collieries and providing prizes, whilst if the officials of miners' unions would urge upon their members the desirability of interesting themselves in the work there can be no doubt that it would further advance matters."

SCENT IN TOBACCO.

IN our issue of Nov. 12th, 1910, we commented upon the objectionable practice of scenting tobacco so universally adopted by the modern tobacco manufacturer. At the time of writing we were not aware of the exact formula of scents used for the purpose, but in the *Pharmaceutical Journal* of Dec. 10th the following appears as an answer to a correspondent:—"*Tobacco Flavours.* The following are recognised formulæ: (1) Cascarilla, 4; liquid extract of valerian, 4; Tonquin bean, 1; rum, 12. Macerate for three or four days. (2) Tincture of cascarilla, 48; essence of Tonquin beans, 32; tinctures of tolu, orris, and valerian, of each 16; oil of nutmegs, 4; oil of cloves, 2; oil of rhodium, 1. (3) Cascarilla, 2; valerian rhizome, 1; Tonquin bean, 2; orris rhizome, 1; alcohol (60 per cent.), 40. Macerate for seven days." No wonder, as we wrote at the time, "the fragrance of pure honest tobacco is to most smokers a mere memory"!

A LABORATORY BOY ON THE NATIVE MEDICAL STUDENT.

WE have received from a correspondent the following extract from a letter to him written by his former laboratory boy, who has gone out to a laboratory in one of our Crown Colonies in the Pacific:—

"As we have got everything in working order things go smoothly. I have been for a month's trip around these beautiful islands, and was enchanted with everything I saw. It was so strange, so different to what I expected. I have dreamt of seeing all these strange things, and now realization comes as a great surprise. I am indeed lucky to have had the chance. I wish all the boys could have come, for at any rate it broadens one's mind.

"I get to like the natives, although they appear as a set of babies. They are indeed a happy race, always jolly and very kind. The Government here are trying to make medical men of some, but I think it will be a failure, for all they think about is to drink and eat. The students—there are 20 of them—are trained at the hospital near. I have one of them to help me, Jessie by name, and he looks like a huge gorilla. He washes the tubes, slides, &c., and wants continually watching. How different they are to medical students at home, for they run anywhere for a sixpence. I was amused the other day at the medical officer parading them all and trying to find out which had had a bath. One poor wretch who said he had was not believed, so they all had to go and have one then and there."

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1911:—

Feb. 20th–25th (Cairo).—Fifth International Congress for the Blind.
March 2nd–6th (Berlin).—Thirty-second Balneological Congress.
" 23rd (Paris).—First Congress of French Medical Journalists.
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
" 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.
" 19th–22nd (Wiesbaden).—Twenty-eighth German Congress o Internal Medicine.
" 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.
May–October (Dresden).—International Hygiene Exhibition.
May–October (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May–October (?) (London, Shepherd's Bush).—Coronation Exhibition.
June (Paris).—First Congress of the International Medical Association for the Prevention of War.
June 5th–8th (Kolberg, Prussia).—Fifth International Congress of Thalassotherapy.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Birmingham).—British Medical Association.
July 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September (Brussels).—Exhibition of Fractures.
" (Turin).—International Congress of Pathology.
Sept. 11th–15th (Berlin).—National Congress for the Study and Prevention of Infantile Mortality (*Goultes de Lait*).
" 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
" 18th–23rd (Sydney).—Australasian Medical Congress.
" 18th–24th (Turin).—Fourth National Congress of Hygiene.
" 24th–30th (Rome).—International Congress on Tuberculosis.
" 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.
October (Cologne).—International Congress of Criminal Anthropology.
Oct. 1st–4th (Liége).—Second Congress of Alimentation.
Dec. 4th–9th (Havana, Cuba).—American Public Health Association.
(Date not fixed) (Genoa).—International Exhibition of Marine Hygiene.
(Date not fixed) (Rome).—International Exhibition of Social Hygiene.
(Date uncertain) (Turin).—International Exhibition of Industry and Labour.

In 1912:—
July (?) (Cologne).—International Congress of Nurses.
September (Prague).—International Congress of Radiology and Medical Electrology.
September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
" Visit of German Medical Men to America.
Nov. 22nd–29th (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

In 1913:—
(London).—Seventeenth International Congress of Medicine.
(Dresden (?)).—International Conference on Cancer.
August (Buffalo).—Fourth International Congress of School Hygiene.

In 1915:—
(London).—International Prison Congress.
(London).—Imperial Exhibition (?)

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (28th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (29th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

SATURDAY (31st).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 20th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec. 14	29·54	S.W.	0·15	66	52	50	48	50	Cloudy
,, 15	29·11	S.W.	0·29	62	53	49	50	51	Raining
,, 16	29·14	S.W.	0·48	71	55	51	52	53	Raining
,, 17	29·37	WSW	0·04	57	50	47	45	47	Cloudy
,, 18	30·04	W.	0·04	65	46	43	42	44	Cloudy
,, 19	30·17	W.	...	58	53	42	45	45	Overcast
,, 20	30·26	S.W.	...	51	48	41	41	42	Cloudy

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A Lecture
ON
OBESITY AND CERTAIN CHANGES OF METABOLISM.

Delivered at the Medical Graduates' College and Polyclinic on Oct. 27th, 1910,

BY DR. O. ROZENRAAD,
PHYSICIAN AT HOMBURG.

GENTLEMEN,—The last time I had the honour of lecturing to you my subject was on the recent advances of diabetes and glycosuria. To-day I have chosen as a subject "Obesity and Certain Changes of Metabolism," which is in many ways connected with the above-named disease. Having carried out last winter with Professor Moritz, at the hospitals in Strasburg, some scientific research work on the fluid contained in fat cells, I am glad to attempt to throw some new light on the etiology of obesity.

Obesity and glycosuria are kindred diseases; about 50 per cent. of all obese persons suffer from glycosuria, though this seems to have little prognostic value. With glycosuria heredity is an important factor in its etiology; sometimes we find that diabetes and obesity are combined with a neurasthenic disposition. A neurasthenic person may be obese, or an obese person may be neurasthenic; it is not always necessary that a neurotic be thin, though in the majority of cases obese persons are not neurasthenic. A good amount of weight may tend to the well-being of a person, but corpulency is not a sign of good health. Obese persons die young, a fact well known to the insurance companies, and they do not recover well from the effects of surgical operations. The disease of obesity itself produces during lifetime cardiac troubles and arterio-sclerosis, also physical and mental inactivity.

The very fact that fat people do not move about much tends to increase their weight; every pound they gain is a vicious circle. For instance, if a person puts on only 7 grammes per day she gains 200 grammes per month or 6 pounds a year, but the next year she will gain more than those 6 pounds, and the increase will be more than an arithmetical progression.

The primary cause of obesity lies in a misproportion between the energy taken in the food and the amount expended by the body. The remainder of the food, not burnt up and lost as heat and work, is stored up as fat. It is Oertel's merit to have pointed out to the profession how much benefit cardiac cases receive by a reduction of weight. In some cases the patients have entirely recovered from asthmatic troubles and emphysema; even cases of locomotor ataxia and kyphoscoliosis are reported by von Noorden to have markedly improved after reduction of weight.

The difference formerly made between anæmic and plethoric obesity has been given up; the distinction now made is whether the case is a case of endogenous or exogenous metabolism. As endogenous have to be considered all cases in which combustion is abnormally low, when dieting has no effect, and thyroid extract as a stimulant for the oxidising process has to be resorted to.

From the chemical structure of the fat cell we can understand that the oxidising process is a slow one. Here is the formula of tri-stearin:—

$$C_3H_5(C_{18}H_{35}O_2)_3,$$

one of the chemical compounds of the fat molecule. As the carbon molecules are high, the oxygen molecules low, it must take time until it is burned into carbon dioxide and water; carbohydrates, as we know, and proteins contain more oxygen and less carbon, therefore burn more easily. This explains why the caloric value of fat is 9, of albumin only 4. What becomes of the fat molecules absorbed? The fat is digested by the pancreatic juice, then changed into glycerine and fatty acids, which after emulsification of the fat are brought by the hepatic veins to the liver. Part of it is transformed into a carbohydrate by a synthetic process which we do not yet know; part of it is absorbed by the blood and tissues and stored up in the organism. The panniculus adiposus of the skin, especially of the abdomen, is a favourite deposit for the fat—the kidneys and the heart, too. There are parts of the organism where no fat deposit ever is found—the scrotum, labia, &c.

TREATMENT.

The treatment of obesity means underfeeding a patient on dietetic principles. Of the various methods I need only to point out to you the Banting, Weir-Mitchell, Oertels, von Noorden, and Karell's cures. Their difference lies in the amount of food to be given to the obese.

Methods.	Proteids. Grammes.	Carbohydrates. Grammes.	Fat. Grammes.
Banting	172	87	8 = 1100 Cal.
Oertel	156	75	25 = 1180 ,,
Ebstein	102	47	85 = 1300 ,,
Von Noorden	120	35	118 = 1300 ,,

In the Banting cure the amount of fat is unusually low—only 8 grammes—whereas with Ebstein and von Noorden it is very much higher, but the amount of carbohydrates is low in proportion—about 35 grammes. The Banting cure means a severe cure, and the amount of 1100 calories is small, whereas Ebstein's diet answers more to the taste of the patient, who does not like to feel he is hungry.

Von Noorden's diet is still richer, and the only amount of food to be severely reduced are the carbohydrates. It answers very well if the patient be under the strict dieting of a medical man—i.e., in a sanatorium or private nursing home, where the proper amount of food may be weighed and nitrogenous substances of the urine examined in a laboratory; but this means for the patient great expense both in time and money, and the practitioner, unless he be a specialist on the subject, will often find it difficult to know and remember the exact caloric value of every food. But it is to the persons of limited means we have to devote our attention, and for them I think Karell's cure is preferable, for with it a patient may be treated at his own home.

Karell's cure is very useful in cases of cardiac trouble, Bright's disease, especially when combined with gout, when a diet containing no salt is advisable and œdema exists, for milk has a diuretic effect. Karell's cure is a milk diet, the essentials of which are that 2000 cubic centimetres of milk are given to a person who has a metabolism of about 3000 calories. In Karell's cure, in order to avoid too great a combustion of proteins, carbohydrates—viz., potatoes—have to be given occasionally, for proteins do not burn as rapidly when they are "protected" by a carbohydrate food. May I give you here in tabulated form a case treated by Karell's cure?

Case of a Female Patient, 44 years of age and 165 Centimetres in Height.

Date.	Weight (kgms.).	Milk (c.cm.).	Calories.	Days.	Loss of weight (kgms.).	Per day (kgms.).
9/1	94·5	2000	1300	3	2·1	0·7
12/1	92·4	2000	1300	11	0·8	0·07
23/1	91·6	1800	1170	1	0·4	0·1
27/1	91·2	1750	1140	3	0·3	0·1
27/1	90·9	1500	925	11	1·9	0·17
7/2	89·0	1200	872	1	0·3	0·3
8/2	88·7	1500	975	13	3·5	0·13
21/2	85·2	—	—			—
				43	9·3	

Karell's milk cure has recently been re-introduced into therapeutics by Jacob and Moritz. Through this milk diet a great quantity of liquid is evacuated from the organism of the human body; a basis is thus formed on which further reduction in weight is more easily obtained by subsequent cures. The quantity of milk to be given depends on the weight of the patient; as an instance, we may reckon that a woman of 150 centimetres would have a weight of 50 kilogrammes; the quantity of the milk to be given would thus be reckoned by multiplying the centimetres above 100 by 25 = 1250 cubic centimetres. If there is a loss of 50 grammes of nitrogen during the cure, this means 310 grammes albumin, or 1650 grammes meat. If we have a loss of 10,000 grammes during reduction, we have to deduct 1650 grammes of meat. Thus there remains 8350 grammes for

the fatty substances, but these 8350 are not pure fat, but fat mixed with water. This explains why patients gain their normal weight after the cure is over—for there remains a great amount of water in the tissues and retention of sodium chloride in the body.

We have to discover what amount of water is contained in the fatty substances. There have been previous investigations of this subject, but with very unsatisfactory results. I have therefore undertaken to examine the fat in post-mortem cases as well as with patients immediately following an operation, for instance, extirpation of the mammæ. I examined 21 post-mortem cases and two cases following operations at the Pathological Institute of the Strassburg Hospital. My procedure was to take 5 grammes of fat instantly after dissection, which was then weighed on a chemical scale and placed in an incubator at a temperature of 110° C. for 48 hours; it was then transferred into an exsiccator for 24 hours, and then weighed again. The loss indicated the percentage of water in the specimen.

Case.	Sex.	Years of age.	Cause of death.	Percentages of water.			
				Fat layers of abdomen.	Heart.	Kidneys.	Femur.
1	F.	45	Cancer of intestines.	6·0	—	10·2	—
2	M.	41	Erysipelas.	7·88	—	—	—
3	F.	51	Endocarditis.	7·88	—	—	—
4	M.	69	Hæmorrhage of the brain.	9·02	—	6·86	—
5	F.	42	Placenta prævia.	10·9	—	—	—
6	F.	20	Intoxication through carbon monoxide.	10·03	—	—	—
7	M.	45	Cirrhosis of liver.	12·64	—	10·06	—
8	F.	59	Incarcerated hernia.	—	—	—	8·5
9	F.	51	Cancer of uterus. Metastasis.	12·2 19·4	—	—	—
10	F.	63	Lipomatosis of the heart.	13·45	14·27	17·94	—
11	F.	48	Cancer of the nose.	13·0	21·7	—	19·9
12	F.	22	Pneumonia.	17·03	—	—	—
13	F.	22	Uræmia.	—	—	—	16·7

Case.	Sex.	Years of age.	Cause of death.	Percentages of water.			
				Fat layers of abdomen.	Heart.	Liver and kidneys.	Mamma.
14	F.	25	Septicæmia.	—	—	20·06	—
15	M.	48	Tumour of the brain.	20·2	—	19·8	—
			Cachectics and Underfed.				
16	F.	73	Pneumonia.	—	—	22·32	—
17	M.	60	Cancer of the œsophagus.	—	—	28·5	—
18	F.	84	Apoplexia.	—	29·42	—	—
19	F.	79	Pneumonia.	—	35·84	46·24	—
20	F.	61	Pneumonia.	36·41	—	—	—
21	F.	58	Cancer of the stomach.	36·43	—	—	—
			After Operation.				
22	F.	50	—	—	—	—	13·3
23	F.	52	—	—	—	—	22·2

The results of my experiments tend to show 13 per cent. of liquid substance in the fat cells, but there is a slight difference if the fat is taken from the heart, the abdomen, or the kidneys. With the fat of the heart there seems to be a slight increase of the water. May I call your attention to Case 9. Between the amount of water in the fat cells close to the metastasis of a carcinoma and the fat at some distance was a difference of 7·2—in the first 12·2 and the second 19·4. In carcinomatous patients there are an increase of the liquid substances in the organism and formation of an œdema against the toxins produced. Voit stated that 30 per cent., Volkmann estimates 15 per cent., of water is contained in the fat cells; thus my experiments would verify Volkmann's calculation. You will find a difference between persons who are ill-nourished or cachectic and well-nourished. The amount of the water contained in the fat cells was about 7 to 14 per cent. (see Cases 2 to 9), though the fat layer measures sometimes almost an inch, but with the cachectic the amount of the water was higher (see Cases 16 to 21).

With the two specimens taken from persons immediately following operations (extirpation mammæ due to tumour) the amount of water was 13 and 22 per cent. Please notice that persons in whom a high percentage of water was found were old. A fact proved by Ranke was that the organs contain more liquid in old age, and therefore the fat cells naturally become charged with water as well.

With cachectics the tissues become impregnated with a kind of gelatinous substance especially the fat cells. We can understand this as it is quite natural that in a person suffering from a malignant disease the reserves of fat are consumed by the disease and the fat cells replaced by an albuminous liquid.

Becquerel, Rodier, and von Hosslin had similar results with the blood and tissue of carcinomatous and tuberculous cases, where there was an abnormal increase of the liquid substance.

The low amount of water contained in fat cells gives us an explanation why it is practically of no difference whether the amount of liquids be reduced in the diet—with 13 per cent. of water contained in fat cells it is of no importance whether liquids are given or not—the fat cells do not take more fluid—and would not be influenced by a reduction of liquid given.

Now, if we reckon a 13 per cent. amount of water in fat and take this into consideration in the balance of calometric equilibrium we would have the following results. During a period of 48 days a patient lost 50 grammes nitrogen, which corresponds to 310 grammes albumin, or 2920 grammes flesh. The loss of weight during these days was 12,000 grammes; deduct for flesh 2920 grammes, and there remain 9080 grammes, of which, with a 13 per cent. amount of water in fat, 639 grammes are water; thus 8441 grammes of pure fat have been lost, or 175 grammes a day. 175 grammes a day of fat give 1627 calories; thus if we put 1627 calories lost through weight in our calculations we have 1300 calories of the milk, 1627 calories lost, making 2927 calories, about the daily amount of calories necessary for one person.

As I said before, Karell's cure, which has lately become very popular on the continent, may form the basis for a further cure on Weir Mitchell's, Ebstein's, or von Noorden's principles. I need not point out to you that Weir Mitchell's treatment is a cure in which milk and proteid food is combined, during which milk and eggs are given, half a pint of milk and an egg every three hours, five or six times within 24 hours; but it may be more to the advantage of the patient to feed him on a richer diet, for the patient may soon get tired of underfeeding himself on a very strict line, and then give up the cure entirely, and therefore Ebstein's diet is advisable. As the French say, "l'appetit vient en mangeant." The diet should consist principally of meat, avoiding pork, goose, duck, and fat smoked beef; fish is allowed except salmon, lobster, sprats, herrings; toasted bread or rusks are preferable to fresh bread; no cake or biscuits. As to vegetables—potatoes, carrots, turnips, beans or peas are not allowed. Vegetables should not be cooked with butter or oil. Not allowed compôtes, dried fruit; no cheese. No soups, chocolates, cocoa, brandy, whisky, or champagne.

A drawback of all cures to reduce weight is that constipation soon takes place, due to the scarcity of food given, and as about 15 per cent. of the dried substances of the fæces consist of neutral fatty acids non-absorbed they cause a peristaltic movement and their elimination causes constipation. Remedies for constipation have to be given during the cure.

During a cure all alcoholic drinks ought to be reduced. The theory of reducing the liquid is antiquated, and plenty of ordinary water or mineral water may be allowed. It is Yorke Davies's merit to have pointed out that a reduction of fluid was not advisable at a time when Oertel insisted on great reduction of all fluid.

A great help in the treatment of obesity is a cure in a health resort, for there a dietetic cure may be taken under

better control than at home, and drinking the waters, combined with plenty of exercise, massage, and Turkish baths, reduce the obese quickly. Harrogate in England, Brides-les-Bains in France, Homburg, Carlsbad, and Marienbad on the Continent are some of the favourite resorts, "récherché's," by the obese. Patients are very apt to take too much of these waters in order to get thin soon. In my practice in Homburg I knew an American lady to take seven glasses of the Homburg waters in order to get thin fast. Needless to say, she collapsed after a week and was severely ill for some time.

The effect of taking the waters at spas like Homburg or Marienbad would be an ephemeral one unless the patients were taught how to diet themselves afterwards. In Homburg great attention is given to dieting; every hotel keeper and proprietor of a lodging-house is supplied with the necessary forms of diets, and special cooking is arranged. Some devote themselves exclusively to this dietetic task, and diabetes or gout is treated on the same dietetic line. The advantage of the Homburg waters is that they are purgative, a valuable item in the diet of the obese, who are apt to suffer from constipation, the Elisabethen spring containing 9 per 1000 of chloride of sodium, the Landgrafen Brunnen about 11 to 1000. I need not speak of their effect, for their laxative effect in colitis, the increase of hydrochloric acid in cases of anacidity of the gastric juice, is well known. Combined with these waters, the climbing of the hills, the carbonic acid baths, and the mud applications are beneficial in this cure. Homburg, being situated at an altitude of 800 feet, is especially beneficial by its bracing air to the cases of anæmic obesity, the amount of hæmoglobin increasing at a considerable altitude.

Should a dietetic cure not lead to satisfactory results treatment with thyroid is indicated, but in many cases thyroid is advised when the diet alone would have helped the patient, if carried on for a certain length of time. For there are cases in which the retarded metabolism of obesity does not seem to yield to a dietetic treatment, and patients, though undergoing a course of diet for a length of time, say that they are fed with only 900 calories, do not lose weight. These cases are due to a constitutional tendency, and they are cases to be treated with thyroid. The reduction of weight soon takes place and they remain less obese. During this treatment we have to watch the action of the heart and the pressure of blood; should the pulse increase, it would be advisable to discontinue this treatment. The amount of thyroid to be given, as a rule, is three grains, three times a day during the meals for a couple of weeks. No thyroid ought to be given in the climacteric age.

I may mention that there are relations between corpulency and secretions of the hypophysis gland. The extract of the hypophysis, the pituitary extract, is able to reduce corpulency as well as the thyroid extract. These facts show a relation between obesity and internal secretion of these glands.

In former days much importance was given to sexual obesity; the extirpation of the testes seemed to produce corpulency—the eunuchs of the Turkish harem were always quoted. Yet even complete withdrawal of the ovaries or testes may have no effect on the metabolic process. I refer here to an experiment of Luthje, who examined during one year the carbon and mineral metabolism of castrated and normal dogs, and determined the total composition of the bodies. No difference whatever could be found between the normal and pathological animals.

There exists one form of obesity, called adiposis dolorosa, or Dercum's disease, when adipose tumours form and pains occur. This kind of obesity causes atrophy of the muscles and debility of the nervous system. It is not very frequent on the continent.

Von Noorden, in Vienna, says that these cases of retarded metabolism, or "endogenous obesity," as he calls them, are about 20 per cent. among the Jews and 5 per cent. among the Caucasian races; and as obesity is very frequent among the Jewish race he attributes it to their tendency to marry in their own race.

It may look easy to reduce weight by underfeeding, but it is very difficult for the patient to maintain this reduced weight without suffering from general weakness. However great the number of patent medicines used by the public may be, none answers so well as carefully dieting a patient. We know too well that the lines of diet are the only ones to be followed in reducing obesity, and it is our duty to educate the public to this standard.

Gentlemen, I do not propose to put before you any dietary "cure" which a specialist has established, for common sense is the line upon which the diet has to be carried out. Every case has to be individually treated and the diet very carefully watched. It is therefore of importance that the carrying out of the diet be observed by the medical man, and not left to the will of the patient. A good surgeon knows when not to operate, a good physician knows when reduction of weight is no longer necessary, for the patient too often wishes to be reduced in weight in a very short time—a mistake that might soon be followed by general weakness due to muscular debility of the heart.

A SIMPLE SERUM DIAGNOSIS FOR TUBERCLE; ALSO A METHOD OF OBTAINING AN IMMUNITY INDEX.

BY V. B. NESFIELD, F.R.C.S. ENG., L.R.C.P. LOND.,
CAPTAIN, INDIAN MEDICAL SERVICE.

WITH a view to discovering traces of immune substance in the serum of tuberculous patients I carried out a series of tests, taking as my basis the fact that the immune body[1] combines with its specific bacterium or toxin, and that this bacterium-immune compound unites with complement.[2] It is the principle employed by Wassermann for the diagnosis of syphilis.

The reactions may be represented by the chemical interactions of three simple substances, which will perhaps explain more clearly these interactions than by referring to Ehrlich's organised looking bodies, with side-chains, &c. Thus let the bacterium be represented by zinc carbonate, $ZnCO_3$; the complement by sodium sulphide, Na_2S; the immune body by sulphuric acid, H_2SO_4; and sheep's red blood corpuscles by lead nitrate, $Pb(NO_3)_2$. $ZnCO_3$ and H_2SO_4 form a compound which combines with Na_2S.

Thus—

$$\underset{\text{Zinc carbonate. Bacillus.}}{ZnCO_3} + \underset{\text{Sulphuric acid. Immune body.}}{H_2SO_4} = \underset{\text{Zinc sulphate. Bact. imm. comp.}}{ZnSO_4} + CO_2 + H_2O.$$

$$ZnSO_4 + \underset{\text{Sodium sulphide. Complement.}}{Na_2S} = \underset{\text{Zinc sulphide.}}{ZnS} + Na_2SO_4.$$

$ZnCO_3$ cannot combine with Na_2S without the intervention of H_2SO_4.

Now, if to this mixture of bacterium ($ZnCo_3$), immune body (H_2SO_4) and complement (Na_2S) some lead nitrate (sheep's corpuscles) be added, no black lead sulphide will be formed (no hæmolysis). But if the immune body be excluded from the mixture, a black precipitate of lead sulphide will result (hæmolysis).

Thus—

$$ZnCO_3 + Na_2S + Pb(NO_3)_2 = ZnCO_3 + \underset{\text{Lead sulphide.}}{PbS} + 2NaNO_3.$$

It will be seen by the equation that 1 molecule of immune body (H_2SO_4) absorbs 1 molecule of complement (Na_2S) in the presence of its specific bacterium ($ZnCO_3$), and if there is more complement present than immune body, some complement (soluble sulphide) will remain unabsorbed and will produce blackening with lead nitrate, and thus the trace of immune body is likely to be overlooked.

In tubercle there are frequently only very small traces of immune body, usually one-fifth part of the complement present.

Special Points Affecting the Reaction.

1. Normal human serum hæmolyses sheep's red blood corpuscles—i.e., it contains an amboceptor for sheep's red cells.
2. Complement is destroyed by moderate heat, immune bodies are not.
3. Tubercle bacilli emulsion does not absorb complement, nor does it hæmolyse sheep's red corpuscles.
4. Sheep's corpuscles when washed three times do not contain complement.

[1] Known also as "amboceptor," "intermediary," "preparer," "fixateure," and "sensibilisatrice."
[2] Known also as "alexin" and "addiment." (Hewlett's Bacteriology).

5. The complement is very active, and its power of hæmolysing is not appreciably decreased by diluting 20 times.

6. The quantity of sodium chloride present is a very important detail. If human serum is diluted 5 times with 1·5 per cent. sodium chloride, it does not hæmolyse sheep's red cells, but will do so even 12 hours later, if diluted enough to make 1 per cent. With 1 per cent. salt hæmolysis occurs, but the best results are obtained with 0·5 per cent. salt. When the corpuscles are old 0·75 per cent. salt must be used.

The explanation of this may be: (1) With 0·5 per cent. salt the pellicles of the red cells are put slightly on the stretch (0·8 per cent. salt being normal), thus requiring only a little disintegration to bring about their rupture, and conversely with 1·5 per cent. salt; (2) salt may inhibit the activity of the amboceptor or complement or both, in the same way as it inhibits the antiseptic action of $HgCl_2$; and (3) the surface tension may play some part in the combinations of the active albuminoid (?) substances, amboceptor, complement, pellicle of red cell.

7. The albumins in serum to some extent inhibit hæmolysis, and hence better results are obtained by diluting.

8. 0·5 per cent. sodium chloride does not hæmolyse sheep's red blood corpuscles (when fresh).

9. Heated human serum contains active sheep's amboceptor (and does not hæmolyse).

The Method of Procedure.

A.—Collect samples of about ½ c.c. of blood from tuberculous patients, and also healthy people. Very little pressure should be employed when drawing the blood, as this tends to produce spontaneous hæmolysis of the human red cells. The blood should be allowed to clot, and may then be centrifuged, or put in an ice chest for 12 hours, so as to obtain the maximum quantity of serum. The serum should not be removed from the clot for at least six hours.

B.—An emulsion of tubercle bacilli in 1 per cent. salt should be prepared. This is made by very gently grinding the dry bacilli in Hayden's mortar, and gradually adding salt solution. The emulsion should be centrifuged, and the supernatant opalescent fluid employed.

C.—About 100 c.mm. of serum should be drawn off into a blood capsule, sealed, and heated in a bath at 56° C. for ten minutes.

D.—Prepare from glass tubing a series of small test-tubes 1½ inches long by ¼ inch. Place four strips of plasticine (a form of putty) on a small board, and affix on it four rows of tubes, A, B, C, D. To the tubes of the line A add 40 c.mm. of heated and 10 c.mm. of unheated serum from the same patient, and 150 c.mm. of 0·5 per cent. sodium chloride. To the tubes of the line B add 10 c.mm. of unheated serum and 190 c.mm. of 0·5 per cent. sodium chloride. To the tubes of the line C add 10 c.mm. of unheated serum, 10 c.mm. of tubercle emulsion, and 180 c.mm. of 0·5 per cent. sodium chloride. To the tubes of the line D add 40 c.mm. of heated and 10 c.mm. of unheated serum from the same patient, 10 c.mm. of tubercle emulsion, and 140 c.mm. of 0·5 per cent. sodium chloride. Shake the tubes to mix the ingredients, stopper them with a strip of plasticine, and incubate for two hours at 98° F.

E.—Centrifuge citrated sheep's blood (2 parts of 1 per cent. sodium citrate, 1 part sheep's blood); draw off the supernatant fluid, and add 1 per cent.[3] NaCl; centrifuge again; repeat the process three times. Finally, prepare from the deposited red cells a 1 in 10 dilution with 0·5 per cent. salt. After the two hours' incubation add 5 c.mm. of the 1 in 10 sheep's corpuscles to each tube. Controls of heated serum, salt, and tubercle emulsion should also be put up.

If the patient is tuberculous, there will be no hæmolysis in the tube of line D, but there will be hæmolysis in the corresponding tubes A and B.[4] The condition in C will depend upon the degree of immune bodies present. If the immunity is high, there will be no hæmolysis; if low, there will be hæmolysis. With normal sera hæmolysis occurs in D, more in C, and most in A and B, or all four may be equal.

Tuberculous patients who are suffering from fever and in whom the disease is advancing, may show hæmolysis in all four tubes, thus suggesting that the disease is progressing faster than the (antitoxin) immune-forming powers of the body. As the patient's health improves, no hæmolysis occurs in tube D and later none in C.

In a doubtful case four readings should be taken: before exercise, after exercise, one day after exercise, and two days after exercise. The exercise throws into the circulation an excess of toxin; this reduces the immunity, and hæmolysis occurs in tube D. Later there is a reaction, which increases the immunity, and now no hæmolysis occurs in D.

This system of testing serum not only gives a method of diagnosis in an obscure case, but also supplies a guide as to the immunising powers of the patient during therapeutic inoculation.

By putting up tubes containing—

1.	10 c.mm. unheated serum	
2.	Ditto	+ 10 c.mm. heated serum
3.	Ditto	+ 15 c.mm. ,,
4.	Ditto	+ 20 c.mm. ,,
5.	Ditto	+ 40 c.mm. ,,

an immunity index can be arrived at, and may be recorded thus—1, ½, ⅓, ¼, ⅛.

I have carried out this test with success with 20 tuberculous patients and 10 normal people. Also in a case of gonorrhœal arthritis, using the gonococcus in place of the tubercle bacillus.

As a rule, when the opsonic indices to tubercle are high, tuberculous patients show this test very well; when the opsonic index is low, the test is sometimes negative, but when the health improves, the test again becomes positive. This fixation of the complement test quite independently proves the value of the opsonic index as a means of diagnosis and an indication of progress. It also appears to show in a mixed infection which is the predominating organism. This latter point I cannot as yet state for certain, till my experience has been greater.

It will be seen that this test is on the lines of Flemming's modification of the modified Wassermann reaction, with the difference that the relation of the immune body to the complement is standardised in place of the antigen. It would, no doubt, also give a means of estimating the degree of reaction in the Wassermann test for syphilis.

Wassermann and Brück in 1906 failed to bring off this fixation test for tubercle; their procedure was different, and perhaps they failed to pay attention to the tonicity of the fluids employed.

It is too early to state what degree of reliance can be placed on the reaction, but as it has never failed in any of the tuberculous cases that I have tested, [nor given a positive result in a non-tuberculous case, I am tempted to publish the results.

Cases.—Normals tested with Tubercle Emulsion.

Students.

1.—M.	Hæmolysis	A, C, D.					
2.—H.	,,	,,					
3.—D.	,,	,,					
4.—Holland.	,,	,,					
5.—G.W.R.	,,	,,	and with 80 c.mm. heated serum.				
6.—R.	,,	,,	,,	,,	,,	,,	
7.—V.N.	,,	,,	,,	,,	,,	,,	
8.—Nurse O.	,,	,,					
9.—R.	,,	,,					

Patients.

1.—Female, aged 30. Synovitis right knee. Hæmolysis A, B, D, with tubercle. No hæmolysis D with gonococcus. Gonococcus opsonic index 2, reacting also to exercise. Repeated twice.

2.—Female, aged 17. Disease and sinus right ankle. Hæmolysis A and C; none in D with tubercle bacilli. Opsonic index 1. Repeated twice.

3.—Male, aged 21. Disease left ankle, three years' duration. No hæmolysis D and C. Hæmolysis A and B. Leg has since been amputated. Tuberculous disease.

4.—Female, aged 30. Polyarticular rheumatism. Opsonic index to tubercle fluctuated with exercise. Hæmolysis in all tubes (not tubercle). Repeated four times.

5.—Female, aged 16. Tubercle of lung. Tubercle bacilli found in sputum. Nov. 25th: Tubercle bacilli. Opsonic index 0·63. Hæmolysis A, B, C, D. 27th: Condition improved. No hæmolysis D. Dec. 12th: Condition further improved. No hæmolysis C and D.

6.—Male, aged 17. Cough, shortness of breath. Opsonic index tubercle low. Nov. 28th: Hæmolysis A, B, C, D. Temperature 101° F. 30th: Hæmolysis A, B, C, D, after breathing exercise. Dec. 6th: No hæmolysis C and D. Hæmolysis A. Condition greatly improved. Repeated twice.

7.—Male, aged 26. Tuberculous lungs, three years. Tubercle bacilli found in sputum. No hæmolysis C and D. Hæmolysis A and B. Repeated four times.

8.—Male, aged 26. Same as previous case.

9.—Male, aged 26. Tuberculous spine 20 years ago; at present quite fit. Trace of hæmolysis D. Marked hæmolysis A, B, C.

10.—Male, aged 13.—Tuberculous spine; lumbar abscess. No hæmolysis C and D. Hæmolysis A and B. Repeated.

11.—Female, aged 9. Tuberculous pleurisy, also tuberculous lung. 24 hours after tapping hæmolysis in all tubes (Nov. 28th). 29th: No hæmolysis D. Repeated twice.

12.—Female, aged 9. Tuberculous disease of spine, fingers, skin of face. No hæmolysis C and D. Hæmolysis A and B. Repeated twice.

13.—M——. Tuberculous disease of knee-joint. Opsonic index 1·34. Hæmolysis A. No hæmolysis D.

14.—I——. Early phthisis. Opsonic index 0·92. Hæmolysis A. No hæmolysis D.

15.—Male. Tuberculous glands in neck. Hæmolysis A. No hæmolysis D.

16.—Girl, aged 18. Tuberculous glands in neck; tubercle of spine of two months' duration. X ray photograph shows caries of lumbar vertebra. Hæmolysis A and B. No hæmolysis C and D.

[3] 1 per cent. is used to prevent hæmolysis during centrifuging.

[4] If no hæmolysis occurs in A, no conclusions can be drawn.

17.—Boy, aged 6. Tubercle of lung; continuous fever for two months. No hæmolysis C and D. Hæmolysis A and B.
18.—Female, aged 23. Syphilitic iritis. Wassermann reaction positive Tested with tubercle one week after treatment with "606." Hæmolysis in all tubes.
19.—Male, aged 23. Abscess of sole of foot; slight fever. Hæmolysis in all tubes.
20.—Male, aged 25. Old-standing empyema; no evidence of tubercle. Hæmolysis in all tubes.
21.—Male, aged 25. Sycosis. Treated with staphylococcus inoculation six months. Hæmolysis in all tubes with tubercle.
22.—Boy. Gland in neck. Pus aspirated. Cocci present. No evidence of tubercle. Hæmolysis in all tubes with tubercle.
23.—Boy. Old tuberculous disease of ankle, quite fit, and running about. Hæmolysis in all tubes with tubercle.
24. Female, aged 30. Rheumatoid arthritis. Pseudo-diphtheria bacillus isolated from cervix uteri, and inoculated with this bacillus for three months. Hæmolysis in all tubes with tubercle.
25. Female, aged 31. Gonorrhœal disease of wrist-joint. Hæmolysis in all tubes with tubercle.
26. Male, aged 45. Polyarthritis. Hæmolysis in all tubes with tubercle.

As a general rule, patients suffering from tubercle and inflammatory diseases other than tubercle give very marked hæmolysis with sheep's red cells, suggesting that in these diseases there is an abnormal quantity of complement produced. When serum is removed a few minutes after clotting takes place, and is mixed with sheep's corpuscles and 0·75 per cent. salt and incubated, hæmolysis occurs with 3 c.mm., but not with 1 and 2 c.mm. But when incubated for one hour at 98° F. in the presence of 0·75 per cent. salt previously to adding the corpuscles, no hæmolysis occurs with 6 c.mm.

Ealing.

THE CLINICAL ASPECTS OF "JUVENILE GENERAL PARALYSIS,"

WITH AN ACCOUNT OF A CASE TREATED WITH "606," AND OBSERVATIONS ON PROPHYLAXIS.

BY J. JOHNSTON ABRAHAM, M.D. DUB., F.R.C.S. ENG.,
LATE RESIDENT MEDICAL OFFICER, LONDON LOCK HOSPITAL FOR WOMEN AND CHILDREN, HARROW ROAD, W.

THE history of juvenile general paralysis bears a curious resemblance to that of many other diseases once considered rare, now generally recognised as of comparatively frequent occurrence. Its existence was unknown until 1877, when Clouston published a description (1)* of his first case in a boy, aged 16 years, under the name of "developmental general paralysis," and showed that it resembled, both clinically and pathologically, the form up to then considered exclusively confined to adult life. Two years later a second case was described by Turnbull in a child aged 12 years (2), and again two years later similar isolated examples by Nolan and Wiglesworth (3). It was in the same year that Regis recorded the first case on the continent (4). The condition was still considered very rare. Nevertheless, in 1895 Alzheimer had collected 40 cases, including 3 of his own (5), and in 1898 Thiry (6) had raised the number of known cases to 69. In 1900 Mott (7) published an elaborate analysis of 22 cases, collected in three years, from the London County Asylums alone, in 1908 he had raised the number of cases observed by him to 40 (8), and in 1910 to 60 (9). In the last 10 years cases have been recorded with increasing frequency from many other countries, till now there must be several hundreds in the literature, and it is not surprising to find that Fennell (10), as the result of his observations at Darenth, came to the conclusion that 5 per cent. of imbecile children were congenital general paralytics.

It will thus be seen that either the condition is becoming more frequent or else is being more readily diagnosed. Probably both suppositions are correct, yet undoubtedly, although the alienist is now constantly on the lookout for such cases, the medical profession as a whole has not yet grasped either their importance or their frequency; and, considering their invariably fatal termination, sufficient stress has not been laid on the paramount importance of treating every child, of known syphilitic parents, giving a positive Wassermann, whether it shows signs of congenital syphilis or not, as carefully as if it were an adult with definite symptoms of the disease; for it is a peculiarity of juvenile general paralysis that many of these children show absolutely none of the stigmata of congenital lues, though nearly all give a positive Wassermann.

* The parenthetical figures occurring throughout the article refer to the bibliography at the end.

It seems scarcely necessary now to labour the point of the close connexion between general paralysis and syphilis. Gowers and Ferrier always maintained the relationship with regard to tabes. Mott has shown (11) that tabes and general paralysis are expressions with connecting links of the late results of syphilis on the central nervous system. Fournier (12), as the result of his vast experience, positively affirmed that tabes and general paralysis were so alike in their etiology that they might be included under a common term, "parasyphilis." Krafft-Ebing (13) stated that general paralysis was the result of "civilisation and syphilisation," and after inoculating nine individuals suffering from general paralysis, who showed no signs of syphilis, with the virus of a hard chancre, waiting for 80 days, and finding then that none of them showed any symptoms, came to the conclusion that they were immune because they already had the disease. Finally, the fact that general paralytics give a positive Wassermann reaction in practically 100 per cent. of cases (14, 15, 16, 17) conclusively proves that if a positive Wassermann means syphilis, and it is a fact that the reaction is constant in the cerebro-spinal fluid or serum of general paralytics, then it amounts almost to a demonstration that "no syphilis means no general paralysis." The only other view with any pretence to scientific support as to etiology is that of Ford-Robertson (18), who maintains that the organism isolated by himself and MacRae from the cerebro-spinal fluid of general paralytics, and named by them the "bacillus paralyticans," is the causal factor of the disease. O'Brien (19) has published a paper in support of the view, but other competent investigators, Marie (20), Chandler (21), Thomson (22), and Williamson (23), have either not been able to find the organism, or have found it as often in controls as in general paralytics, or have found that it exists as a common organism in the throat and skin in normal individuals, and cannot be considered the causal factor of the disease, or more than a secondary infection in general paralytics. Most alienists have therefore come to the conclusion that syphilis is a necessary precursor of the disease. [Anyone interested will find the views for and against syphilis discussed at length in Nonne.[1]] That syphilis is not the exciting cause seems, however, evident, since only from 3 to 5 per cent. of syphilitics develop tabes or general paralysis (Mott). In adults it is generally stated that alcoholic and sexual excess is responsible for tipping the scale, but in children excess "in baccho et venere" can generally be excluded, and so the stress of puberty is usually considered the exciting cause, the ordinary age of onset being from 13 to 15 years, though cases as early as 8 years of age and as late as 23 years are recorded. The fact, however, that as a rule the reproductive organs are of the infantile type seems to weaken the assumption. One of McDowall's cases[2] was, notwithstanding, sexually well developed. Mott (24) mentions one case where a fall from a van seems to have been the exciting cause, and Collin (25) one of a boy who developed symptoms after an injured finger had been removed.

As to sex, in contradistinction to the adult type where 80 per cent. of the cases are male, in the juvenile type the sexes are almost equally divided, with perhaps a slight preponderance amongst females.

Two mental and two physical types are found amongst these children. Mentally they may be defective from birth, ranging from idiots to high-grade imbeciles, or they may be bright and highly intelligent until the commencement of their illness. Physically they may show all the stigmata of congenital syphilis, or, as has been pointed out by Mott (26), may have absolutely no signs of syphilis whatever, whereas brother and sisters, not suffering from general paralysis, often have well-marked signs, as though the disease had spent itself on the cutaneous and bone lesions, and allowed the central nervous system to escape. It would seem, then, that it is more often in the mild or cryptic forms, those least likely to have had an adequate course of treatment, that the disease is more likely to show itself, and it is probable if it were not for the number of abortions, miscarriages, still-births, and deaths in early infancy, directly attributable to syphilis, the number of cases of juvenile general paralysis would be very much greater than has been found to be the case."

Assuming, then, that any congenital syphilitic may be a

[1] Syphilis und Nervensystem. Berlin: S. Krager, 1909.
[2] Journal of Mental Science, Jnuaray, 1908, p. 112.

potential juvenile general paralytic, it becomes a vastly important matter, as pointed out by McDowall (27), to determine at what age we can safely assume that the children of known syphilitic parents are free from the risk of developing general paralysis. The average age of onset from Mott's statistics works out at 17, but he has had two cases occurring at the age of 23, and another at the same age is recorded by Burzio (28). Judging from statistics, then, the risk of a congenital syphilitic developing general paralysis after 25 years of age is very small, unless, indeed, as Mott suggests, it is possible for the adult type to occur as the result of the congenital as well as the acquired variety (29).

Turning now to individual details, it will perhaps be more interesting to describe the symptoms in the case recently under my care, comparing and contrasting them at the same time with those of the recorded cases and with the adult type.

The patient was a boy who was admitted to the East Sussex County Asylum as an imbecile. He was a good-looking, bright-eyed lad of apparently 8 years of age, though he was in reality 13, could answer simple questions, write his name rather badly, but could not read or recognise colours. He was sent to the school for defective children attached to the asylum, proved rather dull, but was cheerful and well-behaved, and appeared to be in good health. In this state he remained for three years. In the interval his mother was admitted to the asylum as a general paralytic, an exceedingly uncommon coincidence, for though it is not rare for father and son each to develop general paralysis, it is extremely rare to find mother and son suffering from this disease in the same institution at the same time. It was the first intimation we had that the boy had a syphilitic heredity, as no details of his family history had been elicited when he was admitted, and he was free from all signs of syphilis, except two rounded smooth scars, one on either buttock, which were probably not syphilitic, as condylomata, which are quite common in that region in congenital syphilis, do not leave scars unless as the results of syphilo-sepsis.[3] After his mother's admission, however, he was kept under observation, but nothing developed until he was 16 years of age. He was then a bright, smiling high-grade imbecile looking about 10 years of age, able to run about and make himself useful, with a very limited but distinct vocabulary, and no apparent delusions.

On Sept. 21st, 1910, the boy suddenly developed a temperature of 102° F., and had retention of urine. Nothing was found in the chest or abdomen to account for the temperature, which subsided to normal in four days, during which time the patient had to be catheterised daily, a 24-hour specimen, amounting to 18 ounces, giving a specific gravity of 1032, containing 2·8 per cent. urea, no albumin, but a partial reduction of Fehling on testing for sugar. He lay smiling in bed, turned on his right side, with his knees drawn up, passively resisting attempts to straighten them. His bodily condition was fair, but the arms and legs were thin, and the genitals of the infantile type so commonly associated with the disease. The bowels only acted after enemata. The pupils were unequal, small, eccentric, oval, and sluggish to light. Accommodation could not be satisfactorily tested. There was no nystagmus, a rare condition which occurred only once in Mott's cases,[4] and no external ophthalmoplegia, a condition not uncommon in cerebral syphilis, but occurring again only once in Mott's cases (paralysis of the external rectus in Case 6). Both knee-jerks were exaggerated, as is usual in the disease, though in later stages it is not uncommon to find them absent on one or both sides. He never spoke, and had to be spoon-fed.

On Sept. 25th the patient was reported to have had a "seizure" in the night. During the following day he had eight typical epileptiform attacks. There was no cry, but he lay in bed with flushed, twitching face, his forehead and cheeks covered with large beads of perspiration. There was conjugate deviation of head, neck, and eyes to the right. The pupils were dilated and fixed. His right arm and leg twitched in unison with his grimacing face. When no attack was on there was a constant coarse tremor of the lips, and a curious, apparently unconscious, smacking as if after pleasant food. The tongue was protruded in a jerky manner, curled up at the tip, but was not markedly tremulous. Attacks occurred with diminishing frequency during the following week, and then ceased. Afterwards a crop of herpetic vesicles appeared on the lower lip. During the attacks loss of control of the bladder or rectum did not occur. Distinct paresis of the right face, the right arm, and the right leg followed the attacks, the superficial reflexes were very active, but there was no Babinski. Ankle-clonus was easily elicited on both sides (a rather uncommon occurrence), the knee-jerks were markedly exaggerated, wrist and triceps jerk well marked, but there was no jaw-jerk. Once or twice he vomited during an attack, a common occurrence in the "seizures" of general paralysis. There was no headache, judging from subjective signs. Under the action of homatropine the pupils dilated irregularly, showing pericyclic outlines. Examination showed optic atrophy, most marked in the right disc, but no chorio-retinitis. Watson (30) in 12 post-mortem examinations in such cases found optic atrophy in four, but this appears to be a much greater proportion than is found clinically. Chorio-retinitis, on the other hand, is not uncommon.

Examination of the patient's serum showed a well-marked Wassermann reaction, 0·25 cubic centimetre of complement being fixed, whereas 0·1 cubic centimetre is usually required for diagnostic purposes. According to Nonne (31), a general paralytic should give the following reactions: (1) lymphocytosis in the cerebro-spinal fluid; (2) the globulin reaction; (3) Wassermann in the "fluid"; and (4) Wassermann in the serum. In a previous paper (32) he states, however, that the cerebro-spinal fluid may give a negative Wassermann in juvenile general paralysis, just as it does in 30 per cent. of the adult type.

On Oct. 2nd the facial palsy was seen to be improving, the brows corrugated naturally, the eyelids closed, but the lower half of the face remained as before. During the next fortnight the paresis of the right arm and leg improved till the grip was equal on both sides. The reflexes, however, were as active as during the "attacks," and both upper and lower limbs were so paretic that he could not sit up in bed, or attempt to feed himself. He was able, however, to shake hands, smile frequently, and to speak a few words very indistinctly. Urination was normal again.

The patient showed no symptoms of any delusions, as was to be expected in an imbecile. Indeed, the usual grandiose delusions of wealth, ambition, sexual power, or the inverted grandiose depression so equally characteristic of the adult type, are not to be expected in the juvenile form, even when attacking a previously normally intelle tual child, because, as pointed out by Mott (8), "until puberty these passions have not formed a part of the experience of associative memory, have not been deeply organised in the brain, and so when the brain begins to decay, and the mind is shed, there are none of these passions present to rise uncontrolled into consciousness in pathological magnitude." This has been the general experience of most observers (33), but nevertheless there have been exceptions. One of Mott's cases thought he was a Member of Parliament, which, in the pauper class, may be considered an "idea of grandeur," and Kleineberger (34) records five cases with "childish ideas of grandeur."

During the month of October the patient's condition remained unchanged, except that at times he lost control of his bladder and rectum, evacuating unconsciously; and so, in spite of the fact that optic atrophy was present, it was decided to try the effects of "606" on him. Accordingly, on Oct. 30th. 0·3 gramme in solution was injected into the buttocks. No pain apparently was present after the injection, but the patient did not sleep as usual that night nor all the next day, and he frequently wrinkled his brow and put his left hand to his head in a puzzled manner. Eventually after 36 hours' sleeplessness he was given one-sixth of a grain of morphia, hypodermically, with good effect. After that he was able to sleep naturally without drugs.

The peculiar erythematous rash known as the "Jarisch-Herxheimer reaction" was not present in this case, a little local redness present at the seat of injection passing off in a few days. The temperature rose to 100° F. on the day after the injection, and continued above normal for six days. On Nov. 8th the patient developed atony of the bladder, associated with marked constipation, and had to be catheterised for two days. Such symptoms cannot, however, be ascribed to the drug, as he had had similar attacks twice before in the previous month.

[3] The absence of signs of syphilis is not uncommon. Of Mott's 7 cases, 15 showed signs of syphilis, 9 did not. (Archives of Neurology, vol. i.).

[4] Archives of Neurology, vol. i., p. 278.

Re-examined on Nov. 26th, four weeks after the injection, the patient's condition was as follows. Speech was more easily elicited, but was quite imbecile in character. Articulation was like that of a cleft-palate case. The pupils were unequal, the left reacting feebly to light under strong electric illumination, the right inactive. Reaction to accommodation could not be satisfactorily ascertained. The superficial reflexes were still exaggerated. Elbow-jerk, wrist-jerk, knee-jerk, and ankle-clonus well-marked and easily elicited. The bodily condition showed continued wasting since the injection. There was no difference in the fundus. Loss of control of bladder and rectum was present, and the patient was unable to stand or sit up.

It will thus be seen that there was practically no improvement, and this is in keeping with the vast majority of clinical reports recorded in the adult type and in tabes. At the outset Ehrlich cautioned against the use of "606" in degenerative changes, and in a recent communication to Sachs stated that there had been 12 deaths in advanced cerebral and spinal disease after its use (35). In cerebral syphilis, however, Neisser states that paralysis and pains disappear like magic, and advises that it may be tried in early tabes and general paralysis, questioning, however, if it is safe when optic atrophy is present. From experiments on animals it has been found that "606" is not injurious to the normal eye, but in the human subject it is stated that transitory blindness may occur. Speithoff and Michaelis had a tabetic who 50 hours after an injection of 0·6 gramme was seized with temporary blindness for several minutes, and another who, eight weeks after an injection of 0·45 gramme, developed sudden ptosis of one lid and blindness lasting ten minutes. Nothing was found ophthalmologically (36). Glück treated two cases of paresis and one of optic atrophy without result (37). Fordyce[5] treated nine tabetics with little result, and one case of cerebral syphilis with wonderful success. Dr. Ivy Mackenzie reports that of 16 general paralytics four were undoubtedly benefited (38). Michaelis in one of his general paralytics had a remission lasting two months. In 12 paralytics treated by Meyer there was no lasting result. The Wassermann reaction after treatment in these cases of Meyer was very interesting; four gave a negative reaction, four a diminution, and four were uninfluenced (39). In this connexion it is interesting to note the extreme difficulty of influencing the Wassermann reaction by treatment in congenital syphilis. In the London Lock Hospital for Women and Children we found that even after two years' in-patient treatment by inunction children still gave an active Wassermann reaction; and McDonagh states that congenital syphilis, irrespectively of treatment, tends to give a positive Wassermann reaction throughout life (40). This statement, though there are strong reasons for believing that it is in the main correct, is probably not absolutely without exception, as the term "congenital syphilis" is at present loosely used to include cases both of infection before birth, in which the child is born dead, or if alive comes into the world with well-marked signs of syphilis, and cases of infection from the placental blood, occurring during the period of delivery, and manifesting themselves some three or four weeks after birth.

Reverting again to the main subject, it will be seen from the cases quoted above that in syphilitic and parasyphilitic affections of the nervous system hopes of success may be entertained in cerebral syphilis, and that amelioration of symptoms in some tabetics and remissions in some general paralytics may follow the use of the drug. To anyone, however, acquainted with the frequent remissions, and even sometimes complete cessation of ataxic and mental symptoms, for a time in tabetics and general paralytics without treatment, the evidence that such improvement is due, in the cases quoted above, to the use of "606" is not convincing, and the necessity of early and systematic treatment to prevent these late manifestations becomes increasingly urgent. In Wassermann's reaction we apparently have a means of discovering latent congenital syphilis in the children of known syphilitics, and these are the cases that seem particularly liable to develop juvenile general paralysis. Considering, then, the apparent hopelessness of checking the malady by even the latest form of treatment, and the known fact that mercury has been proved time and again to be equally useless, it is imperative that such children should be given the very best possible chance at the earliest possible opportunity; and the mere fact that treatment has a very dubious effect on the character of the Wassermann reaction, instead of suggesting to us the impossibility of curing congenital syphilis, should stimulate us, on the contrary, to continue treatment, possibly for years, instead of, as is so frequently the case, stopping treatment as soon as the early manifestations during the first year of life subside.

Ehlers of Copenhagen reports a death five days after the injection of 0·5 gramme of "606" in a general paralytic.[6] The patient was a man, aged 40 years, who had developed syphilis 11 years previously and had been insufficiently treated. In April, 1908, he had an apoplectiform seizure. In August of the same year he first began to show signs of general paralysis (dementia paralytica). In July, 1910, he had a second seizure. On August 25th he was injected in the interscapular region subcutaneously with a neutral suspension after the manner of Wechselmann. His symptoms were those of poisoning; there was tremor, shivering, sweating, and progressive loss of strength. His temperature rose to 103·6° F. (39·8° C.). He died from paralysis of the heart. A post-mortem examination showed all the organs to be healthy except the heart, in which there was acute parenchymatous degeneration. Details of the microscopic examination of the nervous system have not yet been published.

I beg to acknowledge my indebtedness to Dr. F. R. P. Taylor for permission to record the case, to Dr. C. H. Fennell for much help in valuable details, to Mr. H. W. Bayly of the Lock Hospital for the Wassermann results, and to Dr. Otto Grünbaum for the use of the "606."

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Queen's-road, W.

[5] Loc. cit., supra.

[6] Ein Todesfall nach Ehrlich-Hata: "606," Münchener Medicinische Wochenschrift, Oct. 18th, p. 2183.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

BALNEOLOGICAL AND CLIMATOLOGICAL SECTION.

British Health Resorts for Foreign Invalids.

A MEETING of this section was held on Dec. 14th, Dr. T. F. GARDNER, the President, being in the chair.

Dr. NEVILLE T. WOOD read a paper on British Health Resorts for Foreign Invalids. He said: Whereas a large percentage of the patients at the better known continental spas hail from Great Britain, the number of foreign invalids sent to British health resorts is quite insignificant. The reason for this state of things is that the policy of British municipalities exhausts itself in the endeavour to keep Britons from foreign countries rather than to bring the foreigner to ours, and in addition to that no serious

attempt has been made by the profession in England to inform their foreign colleagues that there exist in our island spas and climatic stations of the highest rank. Continental spas should not be regarded as competing with British spas, nor British with continental, the indications for the two groups differing so widely that they are complementary to each other. Speaking generally, the categories of foreign invalids for which our spas are typically suitable include those who thrive in a relatively cool climate and are able to walk well, those who in association with complete change derive benefit from baths which are neither very hot nor taken in close succession, and those whose maladies are held to be tributary to the waters we possess—that is to say, the muriated, sulphuretted, iron indifferent, earthy, and alkaline sulphated. A comprehensive view of British spas from an international standpoint is that, whereas for Britons they are mineral water stations with climatic advantages, for foreigners they are climatic stations with the advantage of mineral waters. It has been objected that our spas are intolerably dull, but there are very many on the continent visited annually by thousands of invalids which are not in any way more lively. Excessive rainfall has been urged against all of our resorts, but on the European mainland, too, it is not uncommon for a whole season to be spoilt by persistent downpour of rain; and, as a matter of fact, in summer less rain falls in the eastern division of England than at some of the stations of Western Europe. Our seaside resorts possess for foreigners advantages which, if not so well defined, are even wider in range. Foreigners are accustomed to and demand higher temperatures in summer than are agreeable to English people. This difficulty may be met by sending continental patients to the warmer of our coast stations. We have, in addition, inland climatic stations where the air, though bracing, is not devoid of sedative qualities. Among such stations may be mentioned Hindhead, Church Stretton, Crowborough, Okehampton, and Ben Rhydding. When the inhabitants of Central Europe become as well aware of the advantages of British health resorts as we are of the indications for theirs, there will be a free interchange of invalids instead of as now a movement in only one direction—and that away from our shores. In order to accomplish this purpose a book is now under consideration with descriptive monographs written and the whole collated by whatever chapters may appear to be necessary.

The PRESIDENT, Mr. E. SOLLY, Dr. F. BAGSHAWE, Dr. R. FORTESCUE FOX, Dr. A. MANTLE, Dr. F. H. HUMPHRIS, and Dr. J. LIDDELL took part in the discussion which followed, and Dr. WOOD replied.

EDINBURGH OBSTETRICAL SOCIETY.

The Modern Treatment of Contracted Pelvis.—Lantern Demonstration.

A MEETING of this society was held on Dec. 14th, Dr. F. W. N. HAULTAIN, the President, being in the chair.

Sir JOHN HALLIDAY CROOM read a paper on Modern Treatment of Contracted Pelvis. At the outset he referred to the diminution of sepsis in hospital practice, which permitted many interferences now which were impossible in the olden days, and he further referred to the fact that sepsis still continued in private practice. He thought it was useless to discuss the methods of dealing with the narrow pelvis until practitioners recognised the fact that a careful and accurate measurement of the pelvis in every primiparous woman, and in every multiparous woman with a bad obstetrical history, must be carried out. He referred to the fact that in midwifery, as well as in general medicine, preventive treatment was more important, instancing the successful prophylaxis of obstetric complications in the Pre-Maternity Home in Edinburgh. He divided narrow pelvis, for all practical purposes, into three categories. First, those below 3 inches; second, those above 3¼; and third, those between 3 and 3¼. With the first variety there was no difficulty in dealing, because in them the only treatment, when diagnosed before labour, was Cæsarean section, which, of all abdominal operations, was by far the most satisfactory. He then dealt with the question of such cases being seen late in labour, and with the field of craniotomy, which he pointed out as getting more and more circumscribed every day. He recommended a more general use of maternity homes and nursing homes for the treatment of all obstetric operations. Sir John Halliday Croom pointed out that with the disappearance, in hospitals at least, of puerperal septicæmia, confidence in the forces of nature had returned, and labour in a narrow pelvis was allowed now to complete itself spontaneously in a great proportion of cases. This method of treatment was strikingly successful both for the mother and child. He believed that spontaneous delivery might be looked for in cases with a conjugate of slightly under 3½ inches in flat pelves and 3¾ inches in generally contracted pelves. The Walcher position should never be omitted in these cases as an aid to the fixation of the head. The duration of the second stage of labour was to be limited only by the condition of the mother and child. The great difficulty centred round the quarter of an inch between 3 and 3¼ inches. In that small area there was a choice of treatment. If the condition were recognised early, there was the option of inducing premature labour; if not seen until term, there was the choice of attempting to deliver by forceps or by some operation for enlarging the pelvis. The position of the operation of the induction of premature labour was that it was perfectly safe for the mother, but unfortunately was accompanied by a very considerable infantile mortality. In regard to high forceps operations in narrow pelvis, the mortality and morbidity to the mother were unquestionable. This was absolutely proved by statistics. The fœtal mortality in these cases ran between 20 and 40 per cent. He then referred to the development of the operations for the enlargement of the pelvis. These operations were not uniformly safe for the children, and were not unassociated with considerable risk to the mother. The cases in which these operations were useful were those of moderate contractions in which, after ample time had been given for the head to enter the brim, it still remained unengaged. There pubiotomy might be expected to be followed by spontaneous delivery, but if necessary, and particularly if the child's life were endangered, might be justifiably supplemented by forceps delivery. He thought that no high forceps operation should be seriously undertaken unless the operator was prepared to perform one of these cutting operations if necessary.

Dr. J. M. MUNRO KERR (Glasgow) alluded to the tendency in recent years to leave difficult cases to nature. Yet he remembered how Dr. Milne Murray extolled highly the use of axis-traction in high forceps cases and how he could accomplish delivery in pelves with a conjugate of 2⅞ inches. But in high forceps difficult cases the fœtal mortality was about 50 per cent. If these cases were given plenty of time, from 50 to 60 per cent. were delivered spontaneously. In such cases one should estimate the size of the head and pelvis, and give plenty of time for nature to mould the head; if that failed forceps should be applied. If fair traction was not sufficient one should never resort to brute force to pull the head through, but then perform pubiotomy. In obstetrics care should be taken not to be led by fashions. Even now pubiotomy was being decried by previous supporters.

Dr. J. W. BALLANTYNE advocated the education of public opinion as to the necessity for careful examination of the pregnant woman to ascertain the presence of such conditions as albuminuria and pelvic deformity. Obstetrical homes were much needed, and also an obstetrical bed readily adaptable to the Walcher position and for the performance of operations.

Dr. J. HAIG FERGUSON alluded to the complete change in their views as regards the application of the high forceps, considering it unjustifiable to apply them if the head was free above the brim. It was better to give plenty of time for moulding of the head to take place, at least in slighter degree, before applying the forceps. In private practice the fœtal mortality was not nearly so great as in hospital practice.

Dr. W. FORDYCE thought they were losing sight of the value of the old operation of turning; it gave the advantage of engaging the narrow wedge of the head in the conjugate, and this could be assisted greatly by the pressure of the hand directly on the head through the abdominal walls. Sir Halliday Croom had given exact measurements of the conjugate in his paper, but he (the speaker) had found it exceedingly difficult exactly to estimate the true conjugate. The diagonal conjugate was a help, and consideration must also be given to the position of the head.

The PRESIDENT said he thought the maternal mortality given by Sir Halliday Croom was impossible in experienced

hands; he had never once seen a woman die as a result of the application of high forceps. Much was to be gained by patient waiting on nature's attempts to mould the head. It was extremely difficult to measure the pelvis, estimate the size of the head, and the probable amount of moulding it would undergo. To discard forceps was a swing of the pendulum in the opposite direction.

Dr. JAMES RITCHIE and Dr. MICHAEL DEWAR also took part in the discussion.

Sir JOHN HALLIDAY CROOM, in his reply, mentioned that he considered forceps one of the best instruments, most excellent in their place, when the head was engaged in the brim or in the pelvic cavity.

Dr. JAMES YOUNG gave a lantern demonstration on the Mode of Action of the Fœtal Structures on the Maternal Tissues and the Function of the Decidua. He referred to the importance of a clear appreciation of the structure of the uterine mucosa in order to understand the changes during pregnancy. He had already pointed out that the stroma throughout its entire extent was a soft, mobile, protoplasmic mass imperfectly differentiated into cellular elements. As he had also pointed out, the fluid and blood escape from the vessels during menstruation was due to tissue change which led to an active dragging out of the blood elements from the vessels—the structural peculiarity of the stroma allowed of an opening-out of the vessel walls and a displacement of the stroma to the greatest advantage. Menstruation was not a congestive process. Dr. Young pointed out that the changes induced by the chorionic epithelium in the pregnant tube, chorion-epithelioma, &c., proved that there was liberated from the chorionic cells a bio-chemical material that spread into the surrounding tissues, extending its sphere of action more and more with the duration of growth. This substance altered the maternal tissues in such a way as to lead to an active imbibition of the blood fluid by the tissues, hence the widespread and uncontrolled œdema. Later it led to a dragging of the red corpuscles from the vessels—i.e., after the vessel walls were teased out. This was the cause of the opening up of the maternal vessels which occurred in these conditions; it was not due to a mechanical liberation of the contents from vessels, the walls of which had been eroded by the advancing chorionic epithelium. The tissue changes were due to an alteration in the protoplasmic colloids, with an increase in their affinity for fluid. In the case of the endothelial and connective-tissue elements this was manifested by a distinct intracellular collection of fluid. The same changes were present in the muscle elements, but here there occurred in the abnormal sites a speedy disintegration and solution. The result of these changes in the proximity of the fœtal elements was seen in a wholesale passage of the blood through the tissues towards the chorionic epithelium. The new vessel formation and the sinuses which developed were due to the same tissue changes. Dr. Young showed vessels from the decidua of two early human ova, which revealed the existence of the same cause of the blood escape. One of these ova was approximately 14–15 days old. In the pregnant tube the only regions where the irregular and uncontrolled œdema and hæmorrhage were prevented were where a decidual change had occurred, and it was clear that, without it, the uterine mucosa would be torn up from fundus to internal os as successive levels came under the influence of the chorionic substances. The decidual membrane localised the changes to the proximity of the ovum. —Dr. B. P. WATSON, Dr. FORDYCE, Dr. HAIG FERGUSON, and Dr. J. LOCHHEAD discussed the subject, and Dr. YOUNG replied.

CLINICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Dec. 20th at the Children's Hospital, Gartside-street. Mr. J. Howson Ray, the President, being in the chair.—Dr. H. A. G. Brooke and Mr. L. Savatard showed cases illustrating the dermatological affections of Tertiary Syphilis, a case of Molluscum Contagiosum, and a case of Primary Lupus Vulgaris in a youth.—Dr. J. G. Clegg showed an interesting case of Traumatic Vertical Hemiopia of the Right Eye. A short time before being seen the patient had received a blow on the right side of the nose, and the ophthalmoscope readily showed a hæmorrhage into the sheath of the right optic nerve.—Dr. N. C. Haring demonstrated the uses of the Pharyngoscope.—Dr. C. C. Heywood showed a case of Muscular Rigidity in an infant aged 18 months, and a case of Intention Tremor in a boy aged 13 years.—The President showed several children with Affections of the Hip-joint, with X ray photographs of each, and demonstrated the diagnostic points of difference between coxa valga, coxa vara, tuberculous hip disease, and tuberculous disease of the great trochanter. He also showed a case, on which he had operated recently, of extensive Cleft Palate and Hare-lip.—Mr. H. H. Rayner showed two cases, undergoing fixation treatment, of Congenital Dislocation of the Hip-joint, with X ray photographs of these.—Dr. J. A. K. Renshaw showed cases of Tuberculous Laryngitis among others.—Mr. P. R. Wrigley showed a case of Cerebellar Abscess and one of Sarcoma of the Left Frontal Bone, both in young girls.

Reviews and Notices of Books.

International Clinics. Edited by HENRY W. CATTELL, A.M., M.D., Philadelphia, U.S.A. Vol. III., Twentieth series. 1910. London and Philadelphia: J. B. Lippincott Company. Pp. 311.

THIS volume opens with an interesting contribution to the study of the ideographic cerebral centre, illustrated by a case of ideographic aphasia by Dr. H. V. Würdemann. This is followed by an article by Dr. Nathan P. Levin on Ehrlich's Diazo Reaction in Chronic Tuberculosis. This reaction, as is well known now, is not so absolutely diagnostic of enteric fever as its discoverer first thought. Although it is of almost constant occurrence in this disease, it has occasionally been present in a number of other affections, both acute and chronic, and of these it more especially occurs in some of the acute and chronic forms of tuberculosis. Dr. Levin, as a result of his inquiry into the latter aspect of the value of the reaction, states that it is very rare in the early stages of phthisis; that it does occur in a good proportion of the advanced cases, but not in all of them; and, lastly, that it is a bad prognostic omen, as, of course, follows from its occurring in these advanced cases. In his remarks on the treatment of pneumonia Dr. Joseph H. Lopez emphasises the value of the "hot jacket" over the messy, old-fashioned linseed poultice, which has to be so frequently changed, necessitating the patient to unnecessary exposure and discomfort. He gives us various useful formulæ, including, we are glad to notice, one containing strychnine, which should be given without waiting for the profound systemic depression to be developed. He does not mention the good effect of another very valuable drug, albeit also an old-fashioned one—namely, antimony. Dr. C. K. Austen writes on autoserotherapy, instancing cases where it gave good results in pleurisy, tuberculous and otherwise, and finding it efficacious in the majority of cases. It has also been tried with good effect in cases of ascites from cirrhosis of the liver.

An excellent contribution is by Dr. L. Howard Russell on Uncinariasis. He summarises the various signs of the disease, showing how vast districts of South America are infected by it. As regards the blood examination, that for the hæmoglobin is the most important, as nearly all the cases cited by Dr. Ashford and Dr. King show diminution of this constituent, whilst the most important and characteristic sign in the differential count is the eosinophilia. Nearly all the cases showed this: it is greater in the acute than in the chronic cases, and its decrease under treatment is a good prognostic sign. The red cells are usually reduced; in one case they were as low as 904,000. The changes in the stools, skin (which is dry and harsh), nervous, circulatory and digestive systems, are all portrayed, and finally the patient is shown to have been always undeveloped and to exhibit a peculiar apathy. With regard to the examination of the stools, the author lays great stress on the quick examination of the fæces under the microscope with a low

power. As regards treatment, thymol gives the best results, and if this be ordered, oil or alcohol should not be given at or near the same time that this drug is administered. The thymol should be repeated until the hæmoglobin rises. The dose is 30 grains. With reference to the mode of infection, the steps are as follows: the worm deposits its eggs in the intestine; these, however, are not hatched here, but mature when they, mixed with the fæces, are deposited in a fit soil. The entrance into the body occurs first through the skin, and, secondly, by swallowing. The anæmia is caused chiefly by the presence of some toxin, and not by the mere bleeding caused by the worm. The article is illustrated by some excellent plates.

Dr. Milton K. Meyers, in writing on hydrophobia, gives an excellent description of the bodies discovered by Negri in 1903. In his remarks on its incubation he urges that too much reliance must not be placed on those cases in which the disease developed years after the bite. There is, however, one well-authenticated case in India in which an officer died two years after the bite. He was the *last* person bitten with some others; these others underwent Pasteur's treatment, whereas he did not.

One of the best articles in this volume is by Dr. Daniel L. Hoyt, who discourses on what vivisection has done for medicine, both in treatment and diagnosis. By its means we have learned how to cure cretinism, how to relieve many cases of exophthalmic goitre. Lord Lister clenched the good effect of carbolic acid by an experiment on a horse, and this experiment marked the benefit of his antiseptic system, by which he has established himself without gainsay as the greatest benefactor to the human race that the world has ever produced.

Space only permits us to notice a few of the articles in this work, but all will repay perusal.

Portfolio of Dermochromes. By Professor JACOBI of Freiburg. English adaptation of the text by J. J. PRINGLE, M.B. Edin., F.R.C.P. Lond. Third and enlarged edition. In three volumes. With 132 plates, 243 coloured and 2 black-and-white illustrations, and 12 photomicrographs of parasitic fungi. London: Rebman, Limited. 1910. Price, full bound, £4 14*s.* 6*d.* net; half bound, £4 6*s.* net.

THE first English adaptation of Professor Jacobi's Dermochromes appeared in 1903 in two volumes, and these were so successful that a supplement was published in 1906. Dr. Pringle states in the preface to the edition of 1910 that it contains practically all the old plates and text of the old editions and the supplement, rearranged and enlarged. Ten entirely new plates have been added, and 12 photomicrographs of the commoner parasitic fungi. The latter, he points out, should prove useful to English-speaking countries, as the diseases caused by these fungi are unduly prevalent in Britain and her colonies.

We are not surprised to learn that a new edition has been called for so soon. The volumes are of use not only to dermatologists but to the profession at large, and to teachers and students. The simple and every-day diseases, as well as the rare conditions, are here illustrated, with a perfection of colouring and a detailed and life-like representation which is usually looked for in vain in illustrations of skin diseases. Especially useful to the student are the faithful portraits of the various stages and phases of the protean manifestations of syphilis. If we may single out any plates in a work showing so uniformly high a standard throughout, we would mention as of special merit those portraying psoriasis, lupus erythematosus, lupus vulgaris, the circinate form of pityriasis rosea, and tinea affecting the smooth skin. Darier's disease would have been clearer if a smaller area had been represented on the same size of plate, and the pictures of sclerodema are not very convincing. The characteristic purple infiltration of one stage of mycosis fungoides is not shown; and the early stage exhibited would not give much assistance in a difficult diagnosis. The photomicrographs are somewhat indistinct; most would only assist those who already had some experience in the diagnosis of the different fungi.

The letterpress is short and to the point, and adds greatly to the usefulness of such an atlas for the general practitioner. We cordially welcome the work, which is at once so truthful and so artistic, and we anticipate that it will have a wide circulation.

LIBRARY TABLE.

Surgical Diagnosis. By DANIEL N. EISENDRATH, A.B., M.D., Professor of Surgery in the Medical Department of the University of Illinois (College of Physicians and Surgeons); Attending Surgeon to the Michael Reese and Cook County Hospitals, Chicago. Second edition, thoroughly revised and enlarged, with 574 original illustrations, 25 of them in colours. London and Philadelphia: W. B. Saunders Company. 1909. Pp. 885. Price 28*s.* net.—The importance of diagnosis can hardly be over-estimated. Anything which assists in improving the student's power in recognising different morbid conditions deserves a welcome, and we know no work which is better calculated than this to afford real assistance to the student in diagnosing a disease. The large number of illustrations present should assist materially the student in appreciating the points of difference between one disease and another. The majority of these illustrations are reproductions from photographs and show very clearly what is intended. We think that any student or practitioner who makes use of the book to improve his diagnostic powers will not repent of the trouble.

Houses, Villas, Cottages, and Bungalows for Britishers and Americans Abroad. By GEORGE GORDON SAMSON. London: Crosby Lockwood and Son. 1910. Pp. xvi.-131. Price 3*s.* 6*d.* net.—This little book shows plans for several houses, varying in cost of construction from £130 to £1400, ingeniously planned to be adaptable to several styles of external treatment. Many of its suggestions are particularly suitable for those who desire a *pied-à-terre* in the Riviera, Algeria, and other health resorts, in which not only the initial cost but the working expense also shall be reduced to a minimum. Its subject matter will also interest medical practitioners and others—it is generally the others who have the necessary leisure and money—who desire to lessen the strain of professional life by a week-end resort of their own not too far from their place of occupation. For houses in foreign parts suggestions are made for the adoption of local ways and materials, modifying them so as to engraft the essentials of British or American ideas on the general local style, which is usually an evolution due to local circumstances, though apt to persist after the disappearance of the conditions that originally gave rise to it.

The Views of "Vanoe": An Englishman's Outlook. By ARNOLD WHITE. London: Kegan Paul, Trench, Trübner, and Co., Limited. 1910. Pp. 419. Price 5*s.* net.—These views are expressed in a felicitous way that makes them pleasant reading. They cover a wide range of subjects—occultism, politics, social economics, moral characteristics of races and individuals, &c. One section is devoted to eugenics. Much sound personal hygiene is inculcated. There is not a little criticism of the medical profession, some of it doubtless more or less deserved, but it is tempered with a generous recognition of the disinterestedness of the profession as a whole. The section concerning health contains many sensible observations on socio-economics, among which we are glad to see the contention that national health demands that a free hand under proper conditions shall be given to scientific research as it is to explorers of the Poles. The

author is at his best in the discussion of social problems, wherein he expresses straight thoughts in clear phraseology. We could easily find points to take exception to, as could everyone interested in any of the matters discussed; but that is merely because in all such problems no view-point can proportionately encompass the whole of truth, so that each observer naturally gives prominence to, and even possibly somewhat distorts, the side most immediately in view. But we do not wish to cavil, preferring to read and enjoy these reflections of a careful observer, an acute reasoner, and a broad-minded thinker.

A BATCH OF ANNUALS.

1. *The Official Year Book of the Scientific and Learned Societies of Great Britain and Ireland.* Twenty-seventh annual edition. London: Charles Griffin. 1910. Pp. viii.-370. Price 7*s.* 6*d.*

2. *The Englishwoman's Year Book and Directory.* 1911. Edited by G. E. MITTON. London: Adam and Charles Black. Pp. xxiv.-386. Price 2*s.* 6*d.*

3. *The Writers' and Artists' Year Book.* 1911. London: Adam and Charles Black. Pp. viii.-130. Price 1*s.*

4. *Whitaker's Almanack.* 1911. By JOSEPH WHITAKER, F.S.A. London: 12, Warwick-lane, E.C. Pp. 971. Price, cloth, 2*s.* 6*d.*

5. *Whitaker's Peerage, Baronetage, Knightage, and Companionage for 1911.* London: 12, Warwick-lane, E.C. Pp. cii.-812. Price 5*s.* net.

6. *Who's Who.* 1911. London: Adam and Charles Black. Pp. xxvi.-2246. Price 10*s.*

7. *Pears' Shilling Cyclopædia.* London: A. and F. Pears. Pp. ii.-1022. Price 1*s.*

1. This year book will prove of value to science students. It gives a classified list of the various scientific societies, with the names of their officers, the addresses of the secretaries, their objects, occasions of meeting, membership requirements, and the periodical and other publications of the society. These are followed by a list of the papers read during the session of 1909–10, arranged alphabetically under authors' names. Section XIV. is devoted to medicine and covers 60 pages. It gives the foregoing details in reference to the Local Government Board, the Royal Society of Medicine, the Royal Medical Society of Edinburgh, and the Royal Academy of Medicine in Ireland, the Medical Society of London, the British Medical Association, the Harveian Society, the Lister Institute, and of the most important medical societies in London, the provinces, Scotland, and Ireland. There is also a list of other medical societies, which occupies two pages of small print. Besides the section on medicine, there are other sections dealing respectively with physics, chemistry, biology, economics, psychology, and science generally, as well as with law, mechanics, literature, &c. A cross reference in Section VIII., Naval and Military Science, to the United Services Medical Society, which appears under Section XIV., may be suggested as an improvement in the future.

2. The thirteenth issue of the *Englishwoman's Year Book* shows a new departure in arrangement which should greatly enhance its usefulness. The work is divided into two parts, the first of which deals with education, professions and occupations, and social life; the second with philanthropic and social work. In the first part, the second and third sections, which deal respectively with Universities and Research work and with Medicine, Pharmacy, and Dentistry, are of direct interest to medicine, and especially to medical women; while under Employments and Professions, in Section IV., information of particular interest to the medical profession is found under the headings of Factory Inspectors, Hospital Almoners, Hygiene, Nurses for Children and Sick Nursing, Physical Training, Research Work, Sanitary Inspectors, &c. The subject of sick nursing is satisfactorily dealt with. Part II. contains sections on Charitable Organisations, Homes, and Societies for Children, Girls, and Young Women, Industrial Matters (factory and workshop labour, &c.), and Hospitals and Convalescent Homes. The book contains a table of university scholarships for women and a good index. It deserves hearty commendation.

3. *The Writers' and Artists' Year Book* is a useful work of reference for writers generally, a large and increasing number of whom are now to be found in the medical profession. It contains lists of journals and magazines, both British and American, with details as to their character, scope, requirements, the remuneration given, and so forth; also lists of syndicates that buy manuscripts, of literary agents, publishers, music publishers, and information on special subjects, such as Christmas card making and other similar work, and press-cutting agencies.

4. *Whitaker's Almanack* has long since established itself as a public necessity, and the present (forty-third) issue, being that of an epochal year, contains more than the ordinary amount of alterations, &c., necessitated by the death of King Edward VII., the accession of His Majesty King George V., and the General Election of January last. It was impossible to await the results of the recent General Election and at the same time to ensure early and simultaneous publication in all European cities, and for Christmas and New Year in distant parts of the world, so a coupon is issued in the preface, which, when duly filled in and forwarded prepaid to the office of the Almanack, will entitle the sender to receive post free a supplement containing the latest Parliamentary information. The usual retrospects are present, to which may be added articles on the military and educational systems of the world, on naval progress among the maritime powers, the administration of the British army, extended and cheaper imperial telegraphy, and so on. The scientific summary is this year omitted.

5. *Whitaker's Peerage* describes itself in its title. It has successfully met the various tests to which we have submitted it with a view to demonstrate its completeness and accuracy.

6. The popular and useful reference book, *Who's Who*, is a biographical dictionary of living people who have been born distinguished, have achieved distinction, are grappling for distinction, or have had distinction thrust upon them. The work is again increased in size, and contains notes of a fair proportion of names of those notable in medicine and the allied sciences. For the man of affairs it provides a good *résumé* concerning persons in, or near, the public eye, of the estimation in which the public holds them, or in which they hold themselves. To journalists in these days the book is simply indispsenable.

7. *Pears' Cyclopædia* includes 18 distinct works of reference under the editorship of James Burnley, with eight assistants. It contains dictionaries of the English language, of general information, prominent people, classical information, everyday information, a world gazetteer, an atlas, dictionaries of events, gardening, poultry and birds, cookery, health, sports and pastimes, the toilet, business, photography, the nursery, and a ready reckoner from 1-16*d.* to 21*s.* It is a small reference library of itself, at a price within everyone's reach.

DONATIONS AND BEQUESTS.—Among other bequests the late Mr. John Bradshaw, of Cheltenham, left £1000 to the Lancaster Royal Infirmary for the purpose of endowing a "John Bradshaw" bed; £500 to the Royal Infirmary, Manchester; £300 to the Home for Incurables, Harrogate; £200 to the Cheltenham General Hospital, and £100 to the Harrogate Infirmary.

THE LANCET.

LONDON: SATURDAY, DECEMBER 31, 1910.

THE ANNUS MEDICUS 1910.

NOT only custom leads us year by year to carry out a medical stock-taking at Christmas-time; we know that our annual summary is of service to many of our readers, and especially is it useful for future reference. That Medicine has advanced during the last 12 months we have no doubt, though the time is too early to pick upon any given piece of recorded work and point to it as the beginning of a new principle or the embryo of a method of treatment with which great things will be wrought. Our present stock-taking possibly leaves out of notice some innovation destined in the near future to have great significance; and possibly again it may attribute undue mportance to something which is on the edge of being superseded. A *résumé* of this nature, whatever pains be spent upon it, must necessarily fall short of completeness, but we are encouraged to continue the custom of our predecessors and to add another chapter to the history of modern medicine that has been compiled in these pages, and in its present form, for over 40 years, nearly half the lifetime of THE LANCET. Year by year the chapters have grown longer, and space forbids us to make each of them more than an expanded index, but it is, we trust, a discriminating index. Each year, too, the record of medical events, not strictly scientific, becomes longer, as medicine and hygiene enter more prominently into the counsels of the nation and into the daily consideration of our countrymen; this is abundantly evident in this story of the Annus Medicus for 1910.

MEDICINE.

Vaccine Therapy.

THE subject of vaccine therapy has commanded a large amount of attention during the year, and numerous contributions have been made to the literature concerning it. An important discussion on Vaccine Therapy, its Administration, Value, and Limitations was held at the Royal Society of Medicine and occupied six sittings. The discussion was opened by Sir ALMROTH WRIGHT, and numerous speakers related their experiences and the conclusions at which they had arrived. The new features in regard to vaccine therapy are its widespread applications, its development in regard to mixed infections, and the claim that it should be controlled by the opsonic index. Sir ALMROTH WRIGHT in his opening address referred to the relations of the bacteriologist and the practising physician to one another and to the patient. There will probably not be a general agreement with his contention that there is a desire on the part of clinicians to oppose the application of bacteriological methods, to belittle the achievements of the bacteriologists, or to prevent them from receiving their due professional recognition and emoluments. General support, however, will be given to the statement that an acquaintance with bacteriological methods sufficient to enable them to be utilised practically should be part of the curriculum of every medical student. Every patient must be studied at the bedside, and purely laboratory investigations can never with safety replace the careful observation of the patient and his symptoms which forms the basis of clinical medicine. But there can be little doubt that methods of diagnosis and means of treatment will be evolved in laboratories to an increasing extent, in the application of which clinical knowledge and experience must continue to be of importance. One of the striking features of the discussion was the fact that the speakers almost without exception testified to the value of the method of treatment by vaccines. The actual points which came in for criticism and discussion were the limitations of the method and the various modes of administration. The postulates laid down by Sir ALMROTH WRIGHT were in brief the necessity for an exact and complete bacteriological diagnosis, kept up to date during the treatment; the necessity for bacteriological knowledge on the part of the person employing the method; and the facts that there are definite limits to the responsive power of the patient, that successful results can only be obtained where an efficient lymph-stream can be conducted through the foci of infection, and that in long-standing infections a long series of inoculations may be necessary. He also mentioned that in a not inconsiderable percentage of cases it is essential to success that the dose of vaccine shall be controlled by measurements of the opsonic index. Those who took part in the discussion were members of different branches of the medical profession, and the net result of the discussion was to indicate a widespread belief in the usefulness of vaccine therapy and to prove an expectation of great results from it in the future, when the questions of the proper control of dosage have been more definitely worked out. The methods of administration were carefully discussed, but much investigation is still required before the limitations of this therapeutic measure can be in any way defined. The nature and treatment of mixed infections require close study, and the results of those who are now investigating the matter will be awaited with interest.

Tuberculosis.

The aspects of tuberculosis which have mainly attracted attention during the past year have been its bacteriology, its occurrence in children, and its prophylaxis. In delivering the Milroy lectures Mr. A. G. R. FOULERTON chose as his subject the Streptotrichoses and Tuberculosis. He dealt fully with the evidence which he found available in support of the following propositions: (1) That under the name of "tuberculosis" there are commonly included infections caused by more than one species of parasite; and (2) that the parasites, generally reputed to be bacilli, which are the cause of tuberculosis belong in reality to a higher group of organisms, and, as streptotricheæ, must be included with the hyphomycetes, or mould fungi. He also discussed the unity of tuberculous infections. He mentioned five distinct types: (1) Tuberculosis occurring in fishes and other cold-blooded species; (2) avian tuberculosis; (3) tuberculosis of the rat; (4) bovine tuberculosis; and (5) human tuberculosis. In referring to avian tuberculosis, Mr. FOULERTON said that when the pathogenic activity of the parasites of human and avian tuberculosis is compared, strongly marked differences suggest the separate identity of the two species, and he quoted experiments which showed the difficulty that was experienced in infecting poultry, pheasants, and pigeons by the human parasite. He also considered that the parasite of rat tuberculosis was specifically different from either the human or avian parasite. With regard to intercommunicability of human and bovine tuberculosis, he believed that, whilst the human adult was susceptible only, or only in any important degree,

to infection by parasites from a human source, the child was equally susceptible to infection by either species, "human" or "bovine."

The occurrance of tuberculosis in children has been considered by various observers. At the annual meeting of the National Association for the Prevention of Consumption and Other Forms of Tuberculosis, Dr. FRANZ HAMBURGHER (Vienna) read a paper on the Frequency of Tuberculosis in Childhood, in which he maintained—(1) that the majority of persons become infected by tuberculosis in childhood; (2) that the frequency of tuberculous infection increases from year to year, while tuberculous morbidity—that is, the frequency of manifest tuberculous disease—decreases from year to year; and (3) the prognosis of tuberculosis in childhood becomes more favourable the older the individual is at the time of the first infection. A debate followed on this paper, the discussion revealing the comparative frequency of abdominal tuberculosis among children. It appeared that this frequency was very marked in Edinburgh and Glasgow, but was probably dependent upon bad milk-supply and not bad air, as cases were cited where town-bred children had derived tuberculosis while in the country from drinking tainted milk warm from the cow.

Dr. CLIVE RIVIERE published a paper in our columns entitled "Phthisis in Children,"[1] in which he contended that the term "phthisis" should be reserved, when speaking of children, for a disease identical with phthisis in the adult, and should not be used to cover all forms of pulmonary tuberculosis. He considered that, using the term in its proper meaning, phthisis is not a common form of tuberculous disease in childhood. He also stated that fatal tuberculosis is (comparatively) uncommon at school ages, the bulk of tuberculous infection during this period being localised and recoverable. Finally, he was of opinion that when the disease occurs in children it is eminently curable in the early stages, but that when fatal it generally runs a shorter course than in the adult.

In regard to measures to be taken to prevent the spread of pulmonary tuberculosis, the establishment of dispensaries for tuberculosis has been much discussed. As early as 1887, Dr. R. W. PHILIP founded the Royal Dispensary for Consumption in Edinburgh. The movement now shows signs of being more widely adopted. A dispensary has been in operation for over a year in Paddington, and similar institutions are being established elsewhere. In Marylebone, for instance, one will probably be in active work by the end of the year. When a patient has been seen at the dispensary and pronounced tuberculous, his home is visited by the nurse, who fills up a careful register of its hygienic and economic conditions, which is countersigned by the medical officer after he has paid a visit for himself. His treatment of each case is thereafter conditioned entirely by the environment of the patient. He gives personal advice upon the best methods of obtaining open-air treatment in a small tenement, to certain cases he lends open-air shelters, and he always refrains from ordering expensive nourishment for a person who is obviously unable to obtain it. It is a sound feature of the system that the treatment of no case which is already in medical hands is undertaken without the written consent to such a transference of responsibility being first obtained from the medical man in attendance. The experience both at Edinburgh and at Paddington is that private practitioners frequently send their poor cases to the dispensary either for consultation or for treatment, whilst the out-patient departments of general hospitals are not less quick to free themselves of the responsibility of cases for which their system of treatment, allowing of no home supervision, is confessedly inadequate.

[1] THE LANCET, Jan. 15th, 1910, p. 156.

At the meeting of the National Association to which we have referred many subjects were discussed, and in particular the measures which should be taken to prevent tuberculosis. The publicity which is at present being given to the subject of tuberculosis in the lay press renders it a matter of great importance that the funds subscribed and the enthusiasm awakened shall be directed into the most profitable channels, and that not all of it shall be expended in a somewhat one-sided campaign against the bacillus. All authorities on the subject are agreed that tuberculosis is very largely a social disease, intimately bound up in one way or another with the problems of poverty, and notably with the housing and feeding of the poorer classes. It is known that the disease is found in intimate association with back-to-back houses, overcrowding, and under-feeding, and that the removal of these states and conditions is followed by a diminished death-rate from pulmonary tuberculosis. So much is this the case, that could there be a general crusade both in urban and rural districts against bad housing a greater effect would probably be produced upon the rapidly declining tuberculous death-rates than would be likely to ensue from any other single event—greater, perhaps, than might be expected from all the other agents of prevention combined.

The question of the notification of pulmonary tuberculosis has again attracted attention, and voluntary notification has been adopted in many of the London boroughs and elsewhere; but the procedure has not yet been long enough in force for any definite judgment to be formed as to the influence it has on the incidence of the disease.

Typhoid Fever.

Lieutenant-Colonel D. SEMPLE, R.A.M.C. (retired), made some investigations in order to ascertain whether there was any advantage to be gained by substituting intramuscular inoculation of bacterial vaccines for the usual practice of subcutaneous inoculation. In regard to typhoid fever, he found that the immunising response following the inoculation of typhoid vaccine in rabbits, as measured by the presence of agglutinins and opsonins in the blood, is the same whether the vaccine is given subcutaneously or intramuscularly. In both methods of inoculation the agglutination and opsonic changes, when plotted on a chart, were found to take somewhat similar courses, and in both an increase of agglutinins practically means an increase of opsonins. The conclusion was therefore arrived at that the intramuscular method of inoculating bacterial vaccines possesses no advantages whatever over the subcutaneous method, and as the latter gives rise to less pain and inconvenience it is to be preferred.

Scarlet Fever.

An epidemic which presented interesting characteristics occurred at Ingatestone, in Essex. This village, which has a population of about 1000, after being practically free from the disease for many years, had the infection introduced, and all the early cases were of so mild a character that they only became recognised when desquamation occurred. A very careful search for missed cases and strict attention to the children attending the public elementary schools appeared to have arrested the spread, when suddenly a series of nine cases occurred. During the next five weeks two or three cases occurred weekly, then suddenly 20 cases occurred in one week, after which the infection rapidly subsided. Milk came under suspicion at the earlier outbreak, and throughout the whole period over 80 per cent. of the houses invaded obtained milk from the same source. This in itself was almost sufficient to implicate the milk, but other facts, which the milk theory seemed incapable of explaining, had to be taken into consideration. Practically all the cases occurred in a limited area, whereas the milk-supply extended over a much larger area. The largest consumers of milk

within the infected area were but little affected, and beyond this area they were not affected at all. Every attempt to account for this circumscribed diffusion failed, and the source of origin remained obscure. Dr. J. C. THRESH, the medical officer to the Essex county council, in his special report pointed out many other peculiarities of the outbreak, such as the age and sex incidence, and notably the escape of those who drank raw milk, whilst those who only used milk in tea were attacked.

Acute Anterior Poliomyelitis.

At intervals during the last five years epidemics of acute anterior poliomyelitis have appeared in different parts of the globe, some of them of peculiar severity and extent. Norway, Sweden, New York and the New England States, Australia, various parts of Germany and Austria, France, Holland, and England have all been visited. As a natural consequence of these somewhat alarming occurrences—for the mortality throughout has been considerable—attention has been concentrated on the disease, and the problem of its nature and etiology has been attacked with vigour. Contributions on the subject have appeared in medical journals, and an immense advance has been made in the knowledge of this malady. One result is that it is evident that the conceptions of the disease must be widened as far as its seat in the spinal cord is concerned. Hitherto too much reliance has been placed on the study of chronic instances of the complaint, whereas in all the epidemics innumerable opportunities have presented themselves of observing it in the earlier stages. Thus it has become certain that meningeal symptoms are far from uncommon, as exemplified by pain and stiffness of the neck, pain on any movement of the head, sometimes a degree of opisthotonos, pain and stiffness along the spine, and sometimes on pressing the vertebræ. Kernig's sign has not been wanting in numbers of cases. Almost invariably, however, these meningeal symptoms are confined to the spinal cord. The meningitis, moreover, has been easily recognisable post mortem in many cases, consisting in infiltration of the meninges, some thickening of them, and engorgement of the blood-vessels. In a small number of cases, relatively, the posterior horns and posterior root ganglia have been invaded, although the main seat of the disease remains in the cornua. For this reason, amongst others, it would seem desirable to describe the disease as acute or epidemic poliomyelitis; the designation "infantile" should be abandoned, and perhaps also the word "anterior."

In 1909 there was an epidemic of poliomyelitis along the seaboard of New England, and Dr. FLEXNER and his associates at the Rockefeller Institute succeeded in obtaining material from the central nervous system from two patients who died. They found that the toxin or toxic agent can be transmitted to apes, producing the characteristic symptoms of the disease, but the potency of the virus is not thereby lessened; after a slight attack reinoculation is almost impossible. As regards the nature of the virus, it is very active, but invisible even by special illumination. It is not arrested by the finest filter. So far, the investigators have not succeeded in staining it nor in cultivating it, unless a cloudiness in certain media may be regarded as a culture. These cultures do not transmit the disease, thus differing from the invisible organism of pleuro-pneumonia. The virus resists a temperature of −2° C. for 30 days. Drying for seven days over caustic potash does not diminish its virulence, nor does admixture with glycerine. It even resists 5 per cent. phenol. Numerous suspensions in water and long keeping do not render it inactive; but it is sensitive to heat, becoming inert at 45° C. In its transmissibility it shows many analogies with the diplococcus intracellularis; and Dr. FLEXNER believes that both organisms enter and leave the body *viâ* the nares, the cribriform plate, and the cerebro-spinal fluid. It is interesting to note that in Professor WEICHSELBAUM'S laboratory operators have also succeeded in inoculating the monkey with the virus of poliomyelitis.

Plague in England.

In the month of September four patients died at Freston in Suffolk from a disease the nature of which was uncertain. Suspicion arose that the deaths might have been due to plague, the pneumonic symptoms being capable of explanation in that way. A bacteriological examination was made in regard to material taken from two of the patients, and although opinions were not unanimous, it certainly seemed possible that the pneumonia had been due to plague. Subsequently rats and hares, found dead or dying in the same locality, have been examined, and some were found to be infected with plague. An active crusade against rats was then put into operation, which has resulted in the weekly destruction of thousands of these vermin and their attendant fleas, any of which may have been carriers of plague bacilli. Considerable speculation has arisen as to the length of time during which this rat plague had been in existence in East Suffolk, and as to whether anything approaching a similar state of affairs exists elsewhere unrecognised; no definite decision has yet been given.

Sleeping Sickness.

Sir HENRY HESKETH BELL, K.C.M.G., late Governor of the Uganda Protectorate, and now High Commissioner of Northern Nigeria, has provided an extensive report on the measures adopted for the suppression of sleeping sickness in Uganda. After dealing with the prophylactic measures which had been taken he proceeded to consider the results of treatment. In spite of the continuous efforts that have been made to discover a cure, Sir HESKETH BELL considers that not much progress has been made. Treatment by injections of atoxyl and of allied drugs, in which great hopes were at first placed, has not given the results expected. In some instances, indeed, atoxyl caused blindness to such an alarming extent that its use had to be greatly restricted. Mercury in conjunction with atoxyl seems to have given more satisfactory results, but, adds Sir HESKETH BELL, "I think I am correct in saying that we are still unable to produce a single undoubted cure among all the thousands of cases which have passed through our segregation camps or elsewhere. All that can be claimed for some of the drugs used is that in a great number of cases they seem to have prolonged the lives of the patients and to have somewhat reduced the acuteness of their sufferings. Sooner or later, however, the unfortunates all seem to die, and unless a therapeutic cure can soon be discovered every soul affected will succumb to the disease." This, however, is rather a sweeping statement; certainly several observers hold the opinion that atoxyl can cure a number of cases if the treatment be begun early enough.

Diseases of the Heart.

In delivering the Bolingbroke Lecture before the South-West London Medical Society Dr. NORMAN MOORE referred to certain points in connexion with diseases of the heart which are of considerable significance in diagnosis and prognosis. He again expressed his opinion that in every case of rheumatic pericarditis an endocardial murmur will sooner or later be heard. If, therefore, pericarditis long persists without any murmur being heard, some other cause than rheumatic fever must be looked for. Conversely, the presence of a murmur in a patient known to have previously had normal heart sounds will sometimes make it clear that a supposed injury is not the cause of a pain in the knee or ankle, but that the patient has rheumatic fever. He also referred to the bacteriology of endocarditis. He remarked

that in the present state of bacteriological knowledge it is often difficult to determine whether the endocarditis progressing in a patient is of the kind belonging to rheumatic fever or is a true ulcerative or malignant endocarditis. The presence of streptococci in the blood will sometimes indicate a malignant form of endocarditis, but often the blood culture yields an inconclusive result. Time seems at present a necessary aid to solving the problem of the presence or absence of malignant endocarditis; but it may be expected that bacteriology will soon supply an earlier determination of the nature of such cases. In discussing the prognosis of mitral regurgitation Dr. MOORE expressed the opinion that such complete compensation may take place that the condition need not interrupt even an active career in life. He thought that the most important point in treatment is to avoid further endocarditis and consequent further valvular injury. He believed that the cause of death in the majority of patients is not merely the condition of the valves and the endocardium, or of the myocardium, but of the whole heart and the whole circulation.

As Lumleian Lecturer at the Royal College of Physicians of London Professor WILLIAM OSLER chose for his subject Angina Pectoris, and gave a learned disquisition on several aspects of the disease. In regard to the cause of the pain in this condition, he said that angina results from an alteration in the working of the muscle fibres in any part of the cardiovascular system, whereby painful afferent stimuli are excited. Cold, emotion, and toxic agents interfering with the orderly action of the peripheral mechanism increase the tension in the pump walls or in the larger central mains, causing strain, and a type of abnormal contraction enough to excite in the involuntary muscles painful afferent stimuli. He was further of the opinion that in disturbance of the Gaskellian function is to be sought the origin of the pain, whether in heart or arteries. The lecturer continued that spasm or narrowing of a coronary artery, or even of one branch, may so modify the action of a section of the heart that it works with disturbed tension, and there are stretching and strain sufficient to arouse painful sensations. Or, he said, the heart may be in the same state as the leg muscles of a man with intermittent claudication, working smoothly when quiet, but instantly an effort is made, or a wave of emotion touches the peripheral vessels, anything which heightens the pressure and disturbs the normal contraction, brings on a crisis of pain.

Diseases of the Nervous System.

The localisation of cerebral function was considered by Dr. J. SHAW BOLTON in the Goulstonian Lectures delivered before the Royal College of Physicians of London. Dr. BOLTON had conducted a new and important anatomical and embryological investigation in regard to the cerebral cortex, and had obtained some interesting results, though this was but a preliminary to the development to his main thesis. This thesis is that the essential physical basis of mental disease consists, on the one hand, in a true sub-evolution, or defect of development, of the cell laminæ of the cortex; and, on the other, in degrees of decrease of the cell laminæ, which is of the nature of a true involution or dissolution. His conclusions were based on the average measurements of 30 cases of mental disease, grouped under visuo-sensory, visuo-psychic, and prefrontal regions. Dr. BOLTON finds that a definite relationship exists between the depth of the prefrontal cortex of the respective cases and the degree of amentia or dementia which existed. No such relationship obtains in the case of the other two regions measured. Further, in considering the individual cell laminæ he concludes that the inner cell lamina is the fundamental cell layer of the cortex, and is concerned with the performance of the instinctive activities. It is below the normal depth in the prefrontal cortex of imbeciles and dements unable to attend to the calls of nature or to feed themselves; while the second or pyramidal layer is concerned with the psychic or associational, in contra-distinction to the instinctive, activities of the cortex.

In the Morison lectures delivered before the Royal College of Physicians of Edinburgh Dr. W. ALDREN TURNER discussed the Nature and Treatment of Epilepsy. In regard to therapeutics, he made some interesting remarks on the dietetic treatment of the disease. He had adopted a purin-free diet, or a modification of it, containing, according to the needs of individual cases, a small portion of fish either once daily or three times a week for several years in conjunction with the bromides or Gelineau's dragées. The results were such that he had been led to advise it in all cases of recent epilepsy. In cases in which the bromides alone had been of little or no use the adoption of the purin-free saltless diet at once led to material improvement. By its aid the dose of the bromides could be largely reduced, and if properly supervised symptoms under such conditions never appear. If the patient showed any signs of loss of weight the addition of cream or cod-liver oil was usually sufficient. If not sufficient, fish, or even a little lamb or mutton, could be added to the diet.

The Actions of Pituitary Extracts.

Dr. ARTHUR DELILLE, who has devoted considerable attention to some of the effects of opotherapy, has published an important monograph on the subject of the pituitary body. An interesting account of the structure and functions of this organ is given, as well as a critical review of the work of previous investigators, and an ample bibliography. He records the results of his own studies, which comprise both experimental and clinical observations carried out in collaboration with Professor L. RENON. After a review of the symptoms produced by a deficient and excessive action of the pituitary respectively, he reviews its employment for clinical purposes. He recommends it in cases where it is desired to raise the blood pressure, lessen the rate of the pulse, produce diuresis, suppress painful sensations of heat and produce perspirations, improve the appetite and capacity for sleep, combat asthenia, and exert a stimulating effect upon nutrition. He advises that it should not be given when the blood pressure is high, and that it should not be combined with suprarenal extract. He recommends the use of an extract of the whole gland, since it is nearly as active as that of the posterior lobe only, and being more easy to prepare is less costly. He states that the daily dose administered for therapeutic purposes should not exceed a quantity corresponding to half a fresh gland of the ox, that the patient should be carefully observed, and that the arterial pressure should be taken as a guide to the necessity of modifying the dose given. Dr. DELILLE gives details of its use in a considerable number of different conditions, including typhoid fever, tuberculosis, certain cardiopathies, Graves's disease, paralysis agitans, and some defects of growth. Dr. S. JERVOIS AARONS in a recent paper in our columns described the use of pituitary extract in obstetrics and gynæcology, and came to the conclusion that low blood pressure and a generally flabby condition warranted a trial of the treatment.

Ringworm.

Recognising the grave prevalence of ringworm and the disastrous influence which this prevalence has upon the education of children, we invited two thoroughly competent dermatologists to make an inquiry for us into the whole question as it at present affects the school children of the metropolis. Their report was published in THE LANCET of Jan. 1st of this year (p. 51). One of the most suggestive parts of that report was the opinion on the results of the X ray treatment. There is a great unanimity amongst those

who have had much experience with this form of treatment of ringworm that it is rapid and certain and free from risks in the hands of those who thoroughly understand it, but there is still a great deal of diversity of opinion as to many of the details. The points which seem of importance are the following. The scalp should be deprived of its hair in as few applications as possible. If any circular shield or stops be employed it must necessarily follow that either there must be areas of overlapping or areas untreated by the rays. When only small areas are to be treated the hexagonal lead-glass stops are preferable to the circular, because hexagons can be fitted into one another. More simple still is the method of using no shields, employed at the Ringworm Hospital of the Metropolitan Asylums Board. The strength of the secondary current from the coil should be controlled by observations of a milliampère-meter and of a spinter-meter, but, above all, Sabouraud's pastilles, prepared from trustworthy material, should be employed. In nearly all cases the whole head can be epilated in five, or at the most six, exposures. The nape of the neck seldom needs treatment and may usually be neglected. The ears, the nose, and the neck generally require to be shielded.

Lectures of the Year.

The Lumleian lectures were delivered by Professor WILLIAM OSLER on Angina Pectoris. We have already referred to some of his remarks under the heading of Diseases of the Heart. Dr. JOSEPH SHAW BOLTON was the Goulstonian lecturer, selecting as his subject, A Contribution to the Localisation of Cerebral Function, based on the Clinico-pathological Study of Mental Disease. Recent years have seen considerable advances in the knowledge of cerebral function and its exact localisation. Yet the impression left by a perusal of the elaborate and painstaking researches of Dr. BOLTON is not so much one of wonder at what has been accomplished as almost of dismay at what remains to be performed. We have referred to these lectures under the paragraph dealing with diseases of the nervous system. The Bradshaw lecture was delivered by Dr. G. NEWTON PITT, who chose as his subject, The Results of Bronchial Obstruction. He first drew attention to the numerous results which may follow the compression of a bronchus. He described the factors which lead to dilatation of the bronchial tubes, which he believed to consist in local changes in the walls, the accumulation of secretion under tension, and the effects of inspiration of a lung which is not capable of expanding satisfactorily. He then considered in detail the causes of bronchial obstruction. These may be either external or internal, the external being aneurysm of the aorta, malignant disease (either of the bronchial glands or of the œsophagus), enlarged caseous or suppurating glands, gummata, abscess, and dilated left auricle; the internal causes being bronchiolitis, syphilitic ulceration with scarring, primary malignant disease of a bronchus, and foreign bodies in the bronchus. Dr. F. W. ANDREWES gave the Croonian lectures on the Behaviour of the Leucocytes in Infection and Immunity. He drew attention to the important rôle played by the bone marrow in immunity. He reminded his hearers that the marrow is the mother tissue of the white cells. If there is an urgent call for more leucocytes there is a "leucoblastic" reaction, which is commonly a neutrophil leucoblastic reaction, because the need for an increase in the polynuclear leucocytes is a much more common thing than the need for eosinophils, basophils, or lymphocytes. Dr. ANDREWES said that it would seem that the "plant" for the production of polynuclear leucocytes present in normal marrow, though it may suffice for a high transitory leucocytosis, is quite inadequate for the *maintenance* of a high leucocytosis. In presence of a grave pyogenic infection steps are at once taken to increase the plant necessary to keep up a due supply. In spite of this the patient or the animal may die, but he thought it is permissible to assume that in every case showing a sustained circulatory leucocytosis this marrow reaction is present. We have referred to the Milroy lectures delivered by Mr. FOULERTON on the Streptotrichoses and Tuberculosis. The Oliver-Sharpey lectures were given by Dr. F. W. MOTT, who selected as his subject the Cerebro-spinal Fluid. He first discussed its physiology, pointing out its physical and chemical properties, its source, its destination, and its functions. He then considered its pathology, laying stress on the changes which are found in sleeping sickness, syphilis, and parasyphilis. Dr. H. B. DONKIN was the Harveian orator, his subject being Some Aspects of Heredity in Relation to Mind.

SURGERY.

The Preparation of the Skin for Operation.

The preparation of the skin for operation has ever since the introduction of antiseptic surgery been looked upon as of vital importance, and inasmuch as sterilisation by heat is here impossible we have to trust to mechanical cleansing and to the use of antiseptics. The practice has certainly varied greatly in different parts of the world, and even in the hospitals of the same city, but it has for the most part consisted in the application for 12 hours or more of a compress moistened with some antiseptic after thorough washing of the operation area. This method, though of very definite value, is not free from objections; in the first place, it is not at all rare to find the skin inflamed by the compress, and in some cases the irritation may be great; a further objection is that the method is inapplicable to emergency operations, for sufficient time is not available. Nearly 50 years ago BOINET wrote in favour of iodine as a local application in surgery. In 1906 CHASSEVANT recommended the use of a solution of iodine in chloroform of the strength of 1 part in 15 for the disinfection of the skin. GRÖSSICH has also employed the tincture of iodine for the same purpose. In THE LANCET Mr. H. F. WATERHOUSE and Mr. W. STEPHEN FENWICK described the method employed at Charing Cross Hospital. At first the iodine was applied only after thoroughly washing with soap and water and the employment of an antiseptic solution, but the results were unsatisfactory, till it was found that the preliminary washing was not only unnecessary but a positive hindrance to the penetration of the iodine. When the washing of the part was omitted the action of the iodine was very satisfactory, and most of the incisions healed by first intention. The best strength of the iodine solution had then to be determined; an 8 per cent. solution was at first employed, but it was found to cause much irritation, and later a 2 per cent. solution was used, and with the results of this strength they were quite satisfied. They lay stress on the importance of using rectified spirit as the solvent, for if the iodine is dissolved in methylated spirit the eyes of the surgeon and his assistants are liable to suffer. WATERHOUSE paints the operation surface first two hours before the operation and again on the operating-table. Many surgeons are now employing iodine in much the same way, but various modifications are used. A slightly weaker solution is equally efficacious, and one painting immediately before the operation appears to be successful. The value of iodine as a disinfectant has long been recognised, and PAUL RECLUS has called attention to the great value of iodine in the treatment of wounds of the hand. In the hands of workmen the skin is often thick and covered with a crust of grease and dust, and it is very difficult to sterilise the skin, but if tincture of iodine is applied direct to the wound and its margins rapid healing is the rule. It is worthy of note that in the Russo-

Japanese war tincture of iodine was largely used, and this was one of the causes of the success of the treatment of wounds in that war.

Antiseptic and Aseptic Methods of Operation.

The relative value of the "antiseptic" method as taught by LISTER and the modern "aseptic" method has been the subject of a discussion in the columns of THE LANCET. There appear to be misconceptions among some surgeons as to the exact procedure in an "antiseptic operation," but, as Sir WATSON CHEYNE has said, it is not a question of the materials employed or whether rubber gloves are used or not, it is in the manipulations carried out by the surgeon that the essence of the matter lies, and the personal equation of the operator has more to do with the result than anything else. With either "antisepsis" or "asepsis" it is possible to obtain perfect results, but either method can easily be practised so as to lead to failure, more or less complete.

Momberg's Method of Hæmostasis.

The arrest or prevention of hæmorrhage in operations is often of the greatest moment, and one of the more powerful methods of controlling hæmorrhage in operations on the lower half of the body and on the lower limbs is that introduced by MOMBERG. It was first described in 1908 and consists in applying a thick rubber tube tightly round the waist. It is certainly very effective, and it has been widely employed on the continent, though but little in this country. Although in several cases some troublesome symptoms have appeared, only one fatal result had been recorded until recently, but a second fatal case has been observed by Professor GROSS and Dr. ANDRÉ BINET of Nancy. The patient had a knee completely disorganised by tuberculosis, and it was decided that amputation of the hip-joint was the best treatment. As she was much wasted and in a very bad general condition it was resolved to employ MOMBERG'S method, so that she might lose as little blood as possible. The operation went off well until at the very moment when the rubber tube was completely relaxed the pulse suddenly stopped and the patient became pale. At the necropsy, on the left side of the heart there were vegetations on the mitral and aortic valve with some fatty degeneration of the heart muscle. It would be a misfortune if these two fatal cases should lead to the abandonment of MOMBERG'S method of hæmostasis; the chief measure of precaution would appear to be a very slow application of the tube and an equally slow removal.

Microscopic Examination of Tumours at Operation.

The importance of the surgeon knowing at the time of operation the exact nature of a tumour can hardly be overestimated, and many attempts have been made from time to time to examine microscopically tumours and other diseased tissues during the operation, and various degrees of success have followed these attempts. Mr. ERNEST H. SHAW contributed to our columns a useful paper on the methods he employed for the examination of the tumour during the course of the operation. Mr. SHAW has found that he is able within five minutes, or even less, to give a report which shall be of use to the surgeon. To prolong an operation to the extent of five minutes so as to perfect a diagnosis is perfectly justifiable, and the methods he employs would certainly often prove useful, though it must surely happen that in no small proportion of the cases an exact diagnosis by microscopy is not possible.

Surgery of the Heart.

From time to time fresh cases of the suture of heart wounds are recorded, and a very striking instance was reported by Dr. C. H. PECK of New York City. The patient was a coloured girl, 24 years old, and was stabbed in the chest with a pocket-knife about half an hour before admission to the hospital. The pericardium was filled with blood and the intra-pericardial tension was so great that no heart beat could be felt even by the finger on the sac. The right auricle had been wounded and the incision was nearly half an inch long. Four sutures were inserted and the patient completely recovered. The heart is much more tolerant of surgical interference than surgeons thought a few years ago. The cases in which an unwounded heart is operated on are necessarily much rarer, and therefore it is of interest to read of a case of heart puncture recorded in THE LANCET by Mr. GAY WALLACE MILNE of Aberdeen. The patient was a girl, aged 20 years, and her heart had been damaged by an attack of rheumatic fever. She suffered from great dyspnœa and the heart was dilated one inch beyond the nipple to the left and one inch beyond the right border of the sternum to the right. Mr. MILNE endeavoured to bleed the patient, but no blood could be obtained from either median basilic vein. Even when the brachial artery was opened there was only a feeble trickle of dark blood. The cyanosis was well marked and the breathing was stertorous, while the heart was becoming more and more distended. He inserted a trocar and cannula into the heart in the fifth left intercostal space close to the border of the sternum. Blood of the colour of porter immediately flowed by the cannula. Twenty ounces of blood were removed; the cannula was then withdrawn and the puncture was closed by acupressure. The patient was much relieved, and there was only slight cyanosis; her strength, however, steadily failed and she died some four hours after the operation.

Surgery of the Blood-vessels.

Wounds of the larger blood-vessels, if untreated, are usually followed rapidly by a fatal termination. Mr. H. M. ANDERSON of Portsmouth has recorded a very striking case, in which the inferior vena cava was torn and yet the patient survived nine hours. A girl 7 years old was run over by a milk-cart an hour and a half before admission to the Royal Hospital, Portsmouth. The wheel had passed over the epigastrium. All the symptoms pointed to severe abdominal hæmorrhage and the child died nine hours after the accident. At the necropsy the abdominal cavity was found full of dark blood, and a tear was found in the inferior vena cava at the point where it pierces the diaphragm. The survival of nine hours with such a serious injury is remarkable.

Mr. G. GREY TURNER of Newcastle-upon-Tyne has recorded a somewhat important case. A boy, 4 years of age, swallowed a halfpenny, and though efforts were made to recover it by the introduction of the fingers. X rays were not employed and no instruments were introduced. For a day or two the child complained of pain about the pit of the stomach, but it soon disappeared, and for a couple of weeks the child had sore throat and difficulty in swallowing, but these symptoms also soon disappeared and a severe cough and dyspnœa came on Twenty-two months later he began to vomit blood. When he was admitted to the Newcastle Infirmary the X rays showed the coin lodged in the œsophagus, but as it was quite clear that some large vessel, almost certainly the aorta, had been opened by ulceration no attempt was made to remove it, and the child died the next day. At the necropsy the coin was found impacted in the œsophagus at the level of the crossing of the left bronchus, and the ulceration had extended into the aorta immediately beyond the origin of the left subclavian artery. Mr TURNER appended to his paper brief notes of five cases which he has seen during the last six years where death has been due to perforation of the aorta by foreign bodies.

The Treatment of Aortic Aneurysm

Aneurysm of the thoracic aorta is little amenable to treatment. Many methods have been devised, but it can hardly be said that any of them has been a real success. The most

recent method has been the introduction of a length of wire into the sac, followed by the passage of an electric current through the wire. A. A. ESHNER has collected 36 cases in which this treatment was adopted, and two of these were under his own care. He considers that in most of these cases the patient's life was prolonged and the symptoms were improved. The technique is fairly simple; some ten or twelve feet of gold or silver wire are introduced into the aneurysm through a hollow needle which is insulated except at its tip. The end of the wire is connected with the positive pole of a battery, the negative pole being placed on the back, and the current, which may reach a hundred milliampères, is passed through it for an hour and a half. In half the cases death followed within a month of the operation, but in one case the patient lived nearly twelve years. The method is naturally applicable only to sacculated aneurysms.

Aneurysmal Varix.

Sir HENRY MORRIS, in a clinical lecture, has described the first recognition of this important condition by Dr. WILLIAM HUNTER, and gave full references to other writers on the subject, while also describing a case which he saw in 1909 of this lesion. The patient was a girl, aged 7 years, whose leg had been punctured with scissors, and a typical aneurysmal varix developed. The case is remarkable both on account of the comparative rarity of the disease and especially the youth of the patient.

The Surgery of the Lymphatics.

Mr. W. SAMPSON HANDLEY took for the subject of his Hunterian Lecture at the Royal College of Surgeons of England the Surgery of the Lymphatic System, and that part of his lecture which was of special interest dealt with the "brawny arm" occurring in a certain percentage of cases of cancer of the breast. It had always previously been thought that this brawniness of the arm was caused by pressure on the axillary veins, but he showed that it was due to obstruction of the lymphatics. He went further, and devised an operation to relieve it, and this he called lymph-angioplasty. It consists in the introduction of silk threads into the subcutaneous tissue of the affected limb, and these serve as new lymphatic channels. Silk may lie embedded in the subcutaneous tissue for years with little alteration, and the practical results of his operation justify the attempt, for in several of the cases the relief has been great, and some other surgeons who have followed his procedure have met with a certain measure of success. We may therefore take it that the operation had become established as justifiable in the treatment of this serious condition.

Mr. A. B. MITCHELL of Belfast has also employed the method with success in cases of lymphatic œdema of the eyelids following erysipelas. Mr. HANDLEY has also, at the suggestion of Dr. ESSEX WYNTER, operated on cases of ascites by draining the fluid into the tissues through the femoral canal. Some of these cases were successful, but in others no benefit resulted. It is a little early to judge of the method.

Removal of Tonsils and Adenoids.

The operation for the removal of tonsils and adenoids is now widely performed by many general practitioners, and it is generally considered that the operation is comparatively safe. Dr. F. R. PACKARD, however, has recorded a case in which death followed the procedure. The patient was a girl, aged 2 years; she was anæsthetised with ether and both tonsils and adenoids were removed. No post-operative hæmorrhage occurred, but she died a few hours later and Dr. PACKARD regarded her death as due to status lymphaticus.

The hæmorrhage after removing the tonsils is occasionally very severe; even then it is usually controllable by pressure. Dr. H. H. GILPATRICK considers that firm and complete approximation of the anterior and posterior faucial pillars by means of sutures is the most efficient means of controlling the hæmorrhage, but the difficulty of the operation is so great that he recommends it only as a life-saving measure after other methods have failed. An interesting case has been described which was under the care of Dr. A. TENNYSON SMITH and Mr. HAROLD S. BARWELL. In this case the boy, aged 10 years, had constant bleeding after removal of the tonsils, and it was found necessary about a fortnight later to suture the pillars together. It was elicited after the first operation that the boy belonged to a family of bleeders, and that he had had severe hæmorrhage after circumcision in infancy.

The Operation for Cleft Palate.

A difference of opinion exists as to the best time for operating on cleft palate, most surgeons holding that it is best to wait till the patient has completed the first dentition before operation, while others maintain that the fissure should be closed well within the first year of life. Mr. T. H. KELLOCK has described two cases who had been operated on very early, but the result was unsatisfactory, and he insists strongly on the need for waiting till the child is older.

Other writers in our columns support this view and suggest the desirability of those who are in favour of the early operation exhibiting the cases in which it had been performed so as to show clearly the benefit obtained from the early interference.

Exophthalmic Goitre.

One of the most important subjects discussed in the Surgical Section of the British Medical Association at its London meeting was the Surgical Treatment of Exophthalmic Goitre, and the difficulty of arriving at a certain opinion is due in great part to the difficulty of deciding with certainty what patients should be put under this title. Some surgeons whose statistics show excellent results after operation certainly include many cases which would not be called exophthalmic goitre by others. On the whole, surgeons are more in favour of operative treatment than are physicians, but those cases seem most suitable for operation which are only slightly marked, and these appear to be just the cases which are likely to recover without operation. Dr. W. HALE WHITE in a recent address has reported the result of an examination into the after-history of the cases of exophthalmic goitre which were in Guy's Hospital during the years 1888 to 1907 inclusive. It was only possible to trace 54 of the 148 cases, and the result of the examination was to show that in a large proportion of the cases recovery followed, and the percentage of recovery did not seem to be increased by operation. He rightly lays stress on the very great importance of rest in the treatment of this condition.

Appendicitis.

Dr. DONALD W. C. HOOD has drawn attention to the tendency that appendicitis shows to become more virulent, and to the evidence that the disease may affect certain families, for many cases are known to occur in the same household. He holds that the disease is due to the effect of microbic influence and that the micro-organism may, under certain conditions, be conveyed from one individual to another, in other words he regards appendicitis as being contagious. Dr. ALFRED MANTLE maintains that appendicitis is not in itself contagious, but that the condition of mucous colitis, which is so often associated with it, may be more or less infectious. He considers that many cases which are diagnosed as appendicitis are merely examples of mucous colitis. Mr. ARTHUR H. BUCK advocates the very early operation in appendicitis. He is strongly of opinion that in every case of inflammatory appendicitis

diagnosed within the first 24 hours the appendix should be removed at the earliest possible moment, for he holds that the prognosis in any case of inflammatory appendicitis is absolutely uncertain, and only early removal can ensure success. With these opinions most surgeons will agree, for it is probable that if the appendix be removed within 24 hours of the commencement of the disease the mortality would be reduced to the smallest possible amount, but this cannot always be done, for the case may not be seen at so early a stage or permission to operate may be refused. Removal of the appendix in the "quiet period" will give good results; and Mr. W. H. BATTLE has analysed 400 cases of his own which were operated on by him at a time selected by himself, and among them there was none in which operation was required by the urgency of the attack. Of the whole series only one case died, and that death was due to acute peritonitis. Mr. BATTLE employs the method of temporary displacement of the rectus muscle which he suggested and performed for the first time 15 years ago, and which is generally called by his name. In 46 of the cases there was evidence of old perforation, and in four cases there had been obstruction of the bowels by adhesions.

In this country the rôle of an appendix in the causation of gastric symptoms is not much considered, though on the continent and in America the condition has obtained general recognition. Mr. HERBERT J. PATERSON has recorded 24 cases, in the majority of which operation was undertaken for a supposed gastric or duodenal ulcer. He describes the symptoms encountered, and he lays especial stress on the radiation downwards of the epigastric pain. Hæmatemesis and melæna may be present, periodical exacerbations of the symptoms occur, and a long history is generally present. The average duration of these 24 cases was six years. He attributes some of the failures of gastro-enterostomy performed for supposed ulcer to the circumstance that the symptoms were caused by appendicular disease.

Mr. C. A. MOORE of Bristol has recorded a case in which suppurative appendicitis coincided with perforated gastric ulcer. The patient was a girl, aged 18 years, who had suffered with symptoms of gastric ulcer, and she had also had several attacks of pain and tenderness in the right iliac fossa. She was suddenly seized with pain on the left side of the abdomen accompanied by vomiting, and 24 hours later she was admitted into hospital. Operation was performed the same evening and the appendix removed, but the condition of the appendix, which was inflamed, did not seem to be sufficient to explain all the symptoms; the abdomen was opened in the middle line above the umbilicus and much gas and fluid escaped. A perforation was found in the anterior wall of the stomach. This was sutured and the patient recovered.

Malignant Disease of the Appendix.

Sir T. LAUDER BRUNTON and Dr. LEWIS G. GLOVER have recorded an important case in which malignant disease of the appendix was treated with emanations of radium. Sir WILLIAM RAMSAY was the first to suggest the possibility of the emanations proving of value in disease, and Sir LAUDER BRUNTON mentioned the suggestion in 1904. The patient, who was a man 60 years old, had suffered from some diarrhœa and pain over the cæcum. On examination a small, long, tender swelling was felt and diagnosed as an enlarged appendix. The appendix was removed by Sir FREDERICK TREVES, and when examined microscopically it was found to be affected by a columnar-celled carcinoma. The patient remained well for two years, but recurrence occurred, and the tumour grew rapidly. The abdomen was opened by Mr. C. B. LOCKWOOD, but it was found that the growth was hard and irremoveable, and nothing was done. Injections of cinnamate of sodium had no effect. Then Sir LAUDER BRUNTON suggested the administration of the emanations of radium, and 1 cubic centimetre of water which had absorbed radium emanations for 10 days was injected into the subcutaneous tissue on two successive days. A few days later the swelling burst and much pus was discharged. In all 18 injections were given, 2 cubic centimetres of the emanation solution being injected every eight days. Rapid recovery followed, but a small swelling was left. Subsequently two other abscesses were opened, but fairly good health was enjoyed between the operations. Later, a short-circuiting operation was performed by Mr. J. BLAND-SUTTON, but the patient died shortly after. In this case, where the diagnosis seems to have been certain, for on several occasions portions of the growth were examined, the injection of radium emanations appears to have been of some benefit, at least sufficient to warrant its employment in other cases.

Ruptured Hydatid Cyst of the Abdomen.

Dr. J. E. BARLING and Dr. D. A. WELSH of Sydney contributed a paper on the Symptoms of Ruptured Abdominal Hydatid Cyst, based on six cases. The three distinctive signs are: First, eosinophilia; this is a common but not invariable sign in hydatid disease, but it appears to be constantly present in cases of ruptured hydatid; secondly, the presence of free fluid in the abdominal cavity due to peritonitis set up by the hydatid fluid; and thirdly, the appearance of urticaria. Of these the most constant are the blood reaction, and the presence of the peritoneal fluid. It is probable that the urticaria is constant, but it may be unnoticed by the patient. In cases in which free fluid in the abdominal cavity is the most salient clinical feature, the presence or absence of eosinophilia is of great diagnostic value.

Intestinal Obstruction.

We have published several accounts of instructive cases of intestinal obstruction. Dr. DAVID M. GREIG of Dundee has recorded a case of a boy, 12 years old, in whom symptoms of obstruction were caused by an enterolith which was spontaneously discharged through an umbilical fistula.

Dr. HENRY ROTH has reported a case in which signs of acute intestinal obstruction were produced by adhesions caused by the presence of pledgets of cotton wool found at operation in the peritoneal cavity. The woman confessed that an abortion had been induced on several occasions, and that the last of these was about six weeks before the onset of her illness. A hard patch could be felt on the posterior wall of the uterus, and this is probably where the uterus had been perforated and where the wool had escaped into the peritoneal cavity.

Mr. G. H. MAKINS has published a case in which obstruction of the bowel was caused by a Meckel's diverticulum. The patient was a boy of 20 who had signs of subacute obstruction, and when the abdomen was opened it was found that there was compression of a piece of bowel by a Meckel's diverticulum which was adherent near its tip. The diverticulum was removed and the patient recovered. A piece of a rib of a whiting was found in the diverticulum, perforating the wall.

Mr. REGINALD M. MOORE has reported a case of intestinal obstruction due to two distinct causes. The patient, a woman, aged 56 years, was admitted with a history of constipation and vomiting for three days. As a hard mass was felt by the rectum the abdomen was opened for the purpose of performing colostomy, and then it was found that a large subperitoneal fibroid had compressed the rectum, and it was removed. As, however, it was clear that the small bowel was more distended than the large intestine, search was made for the cause, and a Richter's hernia was discovered in the right internal inguinal ring; the bowel involved was gangrenous,

necessitating resection. The patient died from general peritonitis three days later.

Dr. N. I. SPRIGGS has published an account of seven cases of congenital intestinal obstruction. In all but one the obstruction was complete; the cases show that the site is most commonly in the lower ileum; the site next in order of frequency is the biliary papilla.

Mr. W. ARBUTHNOT LANE has described the changes which occur in the ileum as a consequence of the progressive descent of the cæcum into the pelvis as a result of chronic intestinal stasis. The ileum becomes sharply kinked about two inches from the ileo-cæcal valve. As the kinking is more marked when the abdominal wall is lax and tired, it follows that the pain is worse in the evening; it is also worse after meals and after riding or running.

Duodenal Ulcer.

Mr. B. G. A. MOYNIHAN read a valuable paper on Duodenal Ulcer before the Royal Society of Medicine, opening a discussion. He claims that the disease is more common than is imagined, and that it can be recognised by its symptoms. Immediately after a meal there is ease, and if pain or discomfort were present before, the meal relieves them and banishes them completely for a time. This group of symptoms is sufficient to justify a diagnosis of duodenal ulcer, and the diagnosis is confirmed at the operation. Mr. MOYNIHAN holds that when the diagnosis is certain surgical treatment is always indicated. The opponents of the idea that "hunger pain" is a sign of duodenal ulcer attribute it to "hyperchlorhydria," but the opinion advocated by Mr. MOYNIHAN is gaining ground.

Clamps in Gastro-enterostomy.

Mr. SINCLAIR WHITE reported a case of chronic duodenal ulcer in a man aged 26 years. He performed posterior gastro-jejunostomy, the usual clamps being employed. Death occurred from hæmorrhage from a vein in the stomach wall. This vein had not been secured by the stitches, and this fact was not recognised at the operation because the clamps employed prevented hæmorrhage until the inner row of stitches was completed, and then the hæmorrhage could not be seen. As this risk is always present when clamps are used, Mr. WHITE has discarded them, and a preliminary fast and careful packing with gauze make it possible to prevent contamination. This article evoked a number of communications from other surgeons, the majority of whom preferred to operate without clamps, but others considered that clamps could be so used as not to hide hæmorrhage. It is clear that good results can be obtained both with and without clamps, but if clamps are used they should not be so strong as to damage the tissues, and care should be taken that all hæmorrhage is arrested by the sutures.

A New Anastomosis Device.

Many surgeons have found the Murphy button of great value in intestinal anastomosis, but it has several objections, for it is liable to be retained for a long time within the body, as its shape is not favourable for passage along the bowel, and it may cause obstruction. Dr. F. W. FORBES-ROSS has devised an ingenious instrument for intestinal anastomosis which unites the bowel readily, and yet, from its shape, which is ovoid, it can pass easily along the bowel.

"606."

A powerful instrument has been placed in the hands of surgeons for the treatment of syphilis by the introduction by EHRLICH and HATA of the new arsenical compound, dioxydiamidoarsenobenzol, or "606" as it is generally called. A single injection of this substance in suitable dose has a marvellous power of causing the disappearance of syphilitic manifestations, the primary and the tertiary lesions disappearing even more quickly than the secondary. The Wassermann reaction usually becomes negative in a short time, and in most cases at least, no further signs are seen of the disease. THE LANCET has contained several important articles on "606," by Professor WECHSELMANN, Dr. JAMES MCINTOSH and Mr. PAUL FILDES, Mr. J. E. R. MCDONAGH, Fleet-Surgeon W. E. HOME, and Dr. W. D. E. EMERY. At the end of another year the value of the remedy will be more exactly known and its limitations will have been determined. Its claim to careful trial is established.

Device for Many Persons to See Operations.

The presence of many students and visitors is not so common in the operating theatre at the present time as it was some years ago, and, indeed, most modern operating theatres provide very little accommodation for visitors, and major operations are so common that even in large medical schools very few students beyond those who assist attend operations; yet it sometimes happens, from the rarity or importance of an operation, that a great many persons may wish to see it. For such a case a device which has been employed in New York City may prove useful; by this it is possible for spectators in a room adjoining the operating theatre to see clearly on a screen the whole operation, every move of the surgeon and of his assistant being plainly visible. There is no interference with the operator and no risk of infection. The method is certainly ingenious.

OBSTETRICS AND GYNÆCOLOGY.

The International Congress of Obstetrics and Gynæcology.

The fifth International Congress of Obstetrics and Gynæcology was held in St. Petersburg in September of this year and was well attended. The following delegates from Great Britain and Ireland were present at the Congress: Dr. AMAND J. ROUTH (London), representing the Royal College of Physicians of London, the Royal College of Surgeons of England, Charing Cross Hospital Medical School, and the Obstetrical and Gynæcological Section of the Royal Society of Medicine; Dr. THOMAS WILSON (Birmingham) and Dr. JERVOIS AARONS (London), representing the Royal Society of Medicine; Dr. EDWARD MALINS, representing the University of Birmingham; Sir ALEXANDER R. SIMPSON, representing the Edinburgh Obstetrical Society; and Mr. M. G. MCELLIGOTT, representing the Royal College of Surgeons in Ireland.

A large number of papers were read, many of the greatest importance, and the Congress was an undoubted success. The two most important subjects which were considered were Cæsarean section and the use of the vaginal route in the performance of various operations on the pelvic organs. On the first subject important papers were contributed by Professor BUMM, Professor PESTALOZZA, and Dr. AMAND ROUTH. The first discussed the advantages and disadvantages of the suprasymphysial section over the classical operation on the fundus of the uterus, and expressed the opinion that in aseptic cases the choice of method is not important. For feverish women with a septic genital canal neither method is secure, for the danger depends on the kind of infection, decomposition of the liquor amnii by ascending putrefactive germs being less dangerous than the presence of streptococci. Professor PESTALOZZI expressed the opinion that extra- and intra-peritoneal methods of Cæsarean section have each precise indications, the classical operation being always preferable where asepsis is certain. When this is uncertain the extraperitoneal operation should be performed, but in cases of certain infection embryotomy was indicated and no Cæsarean section was safe. Dr. AMAND ROUTH contributed a paper on Cæsarean Section in Great Britain and Ireland. He showed from statistics of all operations performed in the United Kingdom since 1867 how the lessened risk of Cæsarean

section had widened its range of usefulness, and considered it in the circumstances of obstruction to labour, uterine hæmorrhage, and constitutional crises.

A good deal of difference of opinion was expressed by the different speakers as to the merits of the extraperitoneal Cæsarean section, and there was by no means unanimity as to its employment in cases of suspected septic infection of the uterus. Professor SELLHEIM, for instance, maintained that in evidently infectious cases with a marked abnormal relationship between child and parturient canal all operative deliveries, with exception of the reduction in the size of the child, are dangerous. If this is so, then the utility of the operation appears to us to be small; and it must be remembered that not uncommonly there is a good deal of difficulty in the actual delivery of the fœtus—a very serious drawback to the procedure as compared with the classical Cæsarean section.

The vaginal route evidently finds considerable favour among Russian gynæcologists, since a number of papers were read before the Congress pointing out its advantages, more especially when combined with the use of the specula and lighting apparatus devised by Dr. OTT. With the use of these instruments some of the speakers maintained that tumours situated above the pelvic brim, even if complicated by adhesions, could be operated upon safely. We cannot, however, agree with the contention of some of the readers of papers, that cases of cancer of the uterus complicated by pregnancy are best dealt with by this route; and we are rather inclined to concur with the conclusions expressed by Dr. JAYLE, who considered that the vaginal route should be reserved for those cases only which were not suitable for abdominal section as a consequence of some exceptional conditions. At the same time, the many valuable papers which were read and the important discussions which took place cannot fail, when they appear in the proceedings of the Congress, to be of great assistance to gynæcologists and surgeons in enabling them to come to a correct conclusion on this point.

Musculature of the Pelvic Floor.

The muscles of the pelvic floor are of great importance in relation to the support of the pelvic viscera, and prolapse of these organs, especially of the uterus, is in nearly all cases associated with some loss of function of these structures. Even at the present day there is a good deal of difference of opinion as to which particular constituent of the pelvic floor—the fasciæ, muscles, or ligaments—forms the most important supports of the uterus, and the exact homologies of the various constituent muscles are still far from settled.

The whole subject has been treated very exhaustively during the past year by Dr. R. H. PARAMORE in his Hunterian lectures. Most anatomists are accustomed to regard the coccygeus muscle as directly related to the movements of the tail in the animals possessing such an organ; thus in tailed mammals these muscles are especially developed. Dr. PARAMORE, on the other hand, does not consider that the coccygeus and levator ani muscles are of much importance as tail movers, but he regards them as playing an important part in the maintenance of the intra-abdominal pressure. According to this view the development and evolution of these muscles is related to the requirements of the animal in regard to an increasing intra-abdominal pressure, and more particularly to the proper performance of respiration. Thus in ungulates, as he demonstrates, the pubo-coccygeus and ilio-coccygeus are entirely absent, and this, he thinks, is associated with the fact that these animals are often attacked and have to flee for their lives. The necessity, therefore, for a low abdominal pressure has led to the suppression of these muscles, while the non-development of the pubo-coccygeus further renders the act of defæcation during locomotion easy and its occurrence possible without interference with locomotion. On the other hand, in the carnivora, with their special adaptability for pursuing and killing, the development of these muscles renders it possible for the animal to fix, not only its thorax, but also its abdomen, and so enables it to execute certain muscular movements with greater certainty and a greater degree of force. According to the view taken by Dr. PARAMORE, these muscles play a much larger part than that of merely moving the tail, and their presence in man in a comparatively highly developed state is associated with the important physiological functions they are intended to subserve.

Cæsarean Section.

The problems connected with this operation have received a good deal of consideration during the past year, not only at the International Congress, but also in other places.

Before the Obstetrical and Gynæcological Section of the Royal Society of Medicine of London Dr. HENRY JELLETT read a paper on Cæsarean Section in the Treatment of Placenta Prævia, and came to the conclusion that there was no place for this operation in the modern treatment of uncomplicated cases of placenta prævia. In a few exceptional cases with a rigid cervix or premature rupture of the membranes, associated with an atonic condition of the uterus, it might be indicated, but his own preference in such a case would be for vaginal plugging, and if that failed for incision of the cervix and bipolar version. In the view that the performance of Cæsarean section was practically never indicated in the treatment of placenta prævia most of the speakers who took part in the discussion concurred.

At another meeting of the section Dr. F. J. MCCANN described a case of Cæsarean section for eclampsia with a successful result to the mother. The operation has been performed very few times in this country, and the author's contention that it was justified in certain well-defined cases met with little acceptance from the critics of the paper.

The justifiability of performing Cæsarean section in cases where it is indicated on account of pelvic contraction, but the patient has been long in labour and is possibly infected, is a problem which still waits a solution. It has been considered in various papers during the past year, and more especially in connexion with the alternative performance in some of these cases of pubiotomy or the extraperitoneal method of Cæsarean section. It is a difficult matter to determine with certainty whether in such conditions any given patient is infected or not. The period of time the membranes have been ruptured is, of course, no criterion, and the clinical recognition of the presence of sepsis may present great, indeed insuperable, difficulties. That the operation can be performed with success even many hours after the waters have broken is certain, but more definite information is required as to the presence or absence of any signs of septic infection in these cases. Without doubt the risk of practising this operation late in the second stage of labour has been somewhat exaggerated in the past, and the question requires further careful investigation.

The Causal Treatment of Dystocia in Cases of Pelvic Contraction.

The very excellent results obtained by Professor VON HERFF in the induction of premature labour by puncture of the membranes render his paper on this subject, read before the meeting of the British Medical Association, of great interest. In view of the considerable maternal mortality which still attends operations of pelvic section, together with the risks of injuries and subsequent complications, and a child mortality of 8 to 9 per cent., such operations, in his opinion, should be reserved as a last resource where the asepticism of

the case is too doubtful to admit of any other form of delivery.

If we compare the results obtained after induction of premature labour with those of pelvic section, given above, we find a maternal death-rate of not more than 0·5 per cent. and a fœtal death-rate, immediate and within the first two weeks of life, of about 20 per cent. Undoubtedly, then, this mode of treatment entails a risk to the child at least two or three times as great as that of pelvic section, but the risk to the mother cannot be compared, and it must be remembered that under the best conditions, such as obtain in private practice, the fœtal death-rate is much less than this. If the degree of pelvic contraction is too severe for the induction of premature labour, then Professor VON HERFF counsels the performance of an elective Cæsarean section with a fœtal death-rate of 7 per cent. and in carefully selected cases a maternal death-rate of some 2 to 3 per cent. While it is quite true that in a very large number of contracted pelves spontaneous labours will take place if the case is left to nature, yet this applies even more to cases where labour is induced, and with less resulting danger to the life and the health of the mother.

A study of the tables accompanying the paper demonstrates that the moderate conservative treatment of cases of contracted pelvis by the induction of premature labour gives at least as good results as the more radical method of awaiting delivery by spontaneous labour, and if this fails an ultimate recourse to pelvic section or to Cæsarean section. There can be no question, therefore, that, while in this country we continue rightly to consider the life of the mother as of greater value than that of the child, we shall continue to practise the induction of premature labour rather than have recourse to such operations as symphysiotomy or pubiotomy.

The Rational Puerperium.

The so-called rational treatment of the puerperium has been discussed during the year, but has made, we fancy, but little headway in this country. Indeed, some of its adherents do not appear so enthusiastic in its praise as they were; and we may well anticipate that the fashion of inducing parturient women to leave their beds as soon after the second or third day as they may feel inclined will not survive long when any large number of carefully recorded cases has been collected and studied. Apart from the danger of the development of displacements of the uterus or of subinvolution, it appears to us that the practice of keeping a patient in bed for at least ten days after her confinement in the case of the poor has many advantages. In their busy and hard-worked lives any opportunities of lying in bed, except on those occasions when they are suffering from some acute illness which necessitates their confinement to bed, are few and far between; and for this reason the short rest which the lying-in patient obtains after her confinement is undoubtedly beneficial. The advocates of early rising are prone to forget the strain which the nine months of pregnancy and the resulting labour entail even in the strongest and healthiest women, and the period of confinement to bed, short as it is, which such patients obtain when treated in the customary manner after their confinements must be of advantage to them, even if it is not absolutely essential to the complete and perfect recovery of their pelvic organs.

Adenomatosis Vaginæ.

It is not often that we can chronicle the discovery of a hitherto undescribed condition. This, however, is the claim made by Dr. VICTOR BONNEY and Mr. BRYDEN GLENDINING for a pathological state called by them adenomatosis vaginæ. In the case observed, a woman, aged 42 years, had suffered for 12 years from a persistent vaginal discharge of a transparent, sticky nature. The entire mucous surface of the vagina and portio vaginalis of the cervix was red and granular, being studded all over with small cysts, varying in size from that of a pin's head to that of a large pea. A continuous stream of mucous fluid like the white of an egg exuded from the diseased surface, in quantity about 6 ounces per diem, with a specific gravity of 1014. Microscopical examination of the vaginal wall revealed the presence of numerous glandular spaces lined by a single layer of tall columnar epithelium, actively mucinogenetic, as proved by their reaction to mucicarmine. Here and there the communication of these glands with the surface of the mucosa could be demonstrated. After a careful consideration of several possible explanations of this rare condition, Dr. BONNEY and Mr. GLENDINING came to the conclusion that a congenital peculiarity of the cells lining the vagina existed, in virtue of which they possessed facultative gland-forming powers similar to those possessed by the cells covering the vaginal cervix in immediate proximity to the external os uteri. This power had remained dormant until excited by inflammation or the effects of child-birth—a process analogous to that by which a glandular erosion of the cervix is formed.

Fibro-myomata of the Uterus and Pregnancy.

This subject is one of perennial interest to the obstetrician and to the gynæcologist, and is of great importance, because even at the present time there are two sharply defined schools who hold very divergent views upon the proper treatment to adopt in these cases. The one school—composed mainly of obstetricians, but including a number of gynæcologists—maintains, and, in our opinion, quite rightly, that the danger of this complication of pregnancy is grossly exaggerated. The other school—composed, we believe, almost wholly of gynæcologists—maintains strongly that the danger is very great and often sufficient to warrant immediate interference when the condition is first discovered, even if such interference necessitates the sacrifice of the life of the fœtus.

The subject was considered in a discussion at the meeting of the British Medical Association held this year in London, opened by Dr. WALTER W. H. TATE, who stated the case fairly and without exaggeration, and came to the following, in our opinion quite correct, conclusions as to the treatment of this complication. Dr. TATE said that the treatment of fibroids during pregnancy depended upon their situation, upon whether they would certainly, possibly, or certainly not, obstruct delivery. In the first case, if mobile, they might be pushed up above the pelvic brim; if too firmly impacted for this to be done without undue force, abdominal section and enucleation were safer; if there were no pressure symptoms it was better to wait till near term, and perform Cæsarean section and enucleation, or pan-hysterectomy. Small cervical fibroids and polypi might be removed per vaginam near the expected term. In the second group were included cases in which the fibroids were multiple and one or more of them encroached on the lower uterine segment. In such the speaker held an expectant attitude to be best for mother and child. In the third class the fibroids were entirely abdominal, and in the absence of severe symptoms he regarded operative interference as unwarrantable. Serious symptoms might compel interference, abdominal enucleation, or hysterectomy; enucleation was the operation of choice. The induction of abortion sacrificed the pregnancy and did not relieve the patient of her tumour; it was an improper proceeding.

The Operative Treatment of Prolapsus Uteri.

The large number of operations which have been devised by different surgeons for the cure or palliation of this condition is evidence of the uselessness of a great many of them. A very excellent paper—the more valuable since it gives the

after-history of a number of the cases, a very important factor in an attempt to gauge the value of any of these procedures—was published in our columns by Dr. J. B. HELLIER. In this he described his experience of WERTHEIM'S operation for prolapse, with fixation of the uterus in the anterior vaginal wall, so-called "interpositio uteri vesico-vaginalis." About 1000 cases have now been recorded by various operators, and in these a permanent cure was obtained in about 70 per cent., with relapse in some 30 per cent., including cases of relapse after subsequent childbirth. The proper performance of the operation requires the sterilisation of the patient, so that we can hardly accept these figures as strictly accurate. The operation is undoubtedly useful, and gives good results in selected cases. As we remarked, however, at the time, in commenting upon Dr. HELLIER'S paper, it is an operation not altogether free from risks, and has the disadvantage that in some of the cases the uterus is too small to keep up the cystocele. In other cases again it is too bulky to fit into place in the anterior vaginal wall and requires to be diminished in size—a necessity which undoubtedly increases the risk of the operation and involves the chance of severe hæmorrhage occurring. In spite, however, of these possible drawbacks, it is one of the best operations for this common complaint, and deserves to be practised to a greater extent in this country than it is at the present time.

OPHTHALMOLOGY.

During the past year no book of superlative value has been published. The Handbook of GRAEFE-SAEMISCH slowly and wearily wends its way towards a yet distant terminus. It outlives both its founders, and Professor HESS of Würzburg is now responsible for the completion of the vast second edition, taking the place of Professor SAEMISCH of Bonn, whose death is much deplored by ophthalmologists throughout the world. Of the parts more recently published, those dealing very exhaustively with exophthalmic goitre have already received some appreciation at our hands. When completed they will form a very valuable monograph on this disease. Of books published in the English language, Dr. THOMAS HENDERSON'S on Glaucoma is the most noteworthy. Founded upon a theory which will not find universal acceptance, at any rate in unmodified form, it predicates some revolutionary ideas which will at least prove stimulating to discussion, and it may be hoped also to further experimental research.

Colour Vision.

The now famous "TRATTLES" case—in which a man, stated to be dangerously colour-blind by the supreme scientific examiners of the Board of Trade, was found to be not dangerously colour-blind by an extraordinarily constituted legal court of inquiry—has led to the appointment of a Departmental Committee of the Board of Trade. The committee is instructed to inquire what degree of colour-blindness or defective form vision, in persons holding responsible positions at sea, causes them to be incompetent to discharge their duties; and to advise whether any, and if so what, alterations are desirable in the Board of Trade sight tests at present in force for persons serving or intending to serve in the Merchant Service or in fishing vessels, or in the way in which those tests are applied. The members of the committee are the Right Hon. ARTHUR H. DYKE ACLAND (chairman); Mr. RAYMOND BECK; Captain THOMAS GOLDING; Professor FRANCIS GOTCH, F.R.S.; Mr. NORMAN HILL; Mr. EDWARD NETTLESHIP, F.R.C.S.; Mr. J. HERBERT PARSONS, F.R.C.S.; Professor J. H. POYNTING, F.R.S.; the Lord RAYLEIGH, O.M., F.R.S.; Sir ARTHUR RÜCKER, F.R.S.; and Professor E. H. STARLING, F.R.S.; with Dr. WILLIAM WATSON, F.R.S., and Mr. S. G. TALLANTS as secretaries. Objections to the constitution of the committee have been brought forward by the Imperial Merchant Service Guild, the chief being that, understanding that shipping organisations were not to be represented and that the committee was to be a small one, the Guild took no steps to secure representation, but subsequently found that among those selected to constitute the committee one was the secretary of a large association of shipowners, another a well-known underwriter, while a third was an Elder Brother of Trinity House. The Guild was excluded from representation while the Royal Society was largely represented, the suggestion here being that the committee would be prejudiced in favour of the methods used by Sir WILLIAM ABNEY and recommended by the Royal Society. It may be hoped that the results of the inquiry will be so satisfactory as to disarm criticism, for the subject is one of great importance, full of difficult problems.

Glassworkers' Cataract.

The committee of the Royal Society appointed to investigate glassworkers' cataract has not yet reported, but we understand that much valuable research work is being carried out, both clinical and experimental. The latter involves abstruse physical and physiological investigations, which are in able hands and cannot fail to bear fruit.

Cataract.

Intracapsular extraction of cataract still occupies the most prominent place in the literature of the subject. Lieutenant-Colonel HENRY SMITH, I.M.S., like a modern ATHANASIUS, still fights the good fight of faith against many unbelievers but supported by firm adherents. The report of Major P. P. KILKELLY, I.M.S., on the results in 23 cases operated upon by Lieutenant-Colonel SMITH at Bombay during the Medical Congress is probably the strongest adverse criticism yet brought forward against the method. In five cases the capsule ruptured and in two vitreous was lost. The early visual results were not superior to those of ordinary extraction. In four of the five cases in which the capsule was ruptured the capsule became impacted in the wound. There was incarceration of iris in the wound in five cases. Vitreous opacities were found in nine cases, and in five of these iritis was present. Iritis also occurred in two other cases. Allowance must be made for the fact that Lieutenant-Colonel SMITH was operating in unfamiliar surroundings. Major KILKELLY concludes that "the average patient is exposed to an altogether unnecessary danger by the operation," but while most ophthalmologists will agree with him the other side is not without its arguments.

Post-operative infection is a subject of peculiar importance in relation to cataract extraction. Whilst ordinary pyogenic organisms like the pneumococcus are well known to cause panophthalmitis when introduced into the eye, and even saprophytes like the bacillus subtilis may produce a like result when introduced into the vitreous, it has hitherto been asserted by such an authority as AXENFELD that the staphylococcus albus is innocuous. HANCOCK, however, has proved this statement to be erroneous. In three cases of suppuration after cataract extraction a pure culture of this organism was recovered from the vitreous.

Glaucoma.

Much ingenuity has been directed during the past year to devising a satisfactory operation for ensuring permanent relief of increased tension in cases of chronic glaucoma. The operations already brought forward in some cases failed to appeal to ophthalmic surgeons as likely to attain this object without undue risk, and had therefore been abandoned, or in other cases were still on their trial. Among the latter must be included HEINE'S cyclodialysis, and the sclerectomies of LAGRANGE and HERBERT; amongst the former, the methods

of HERBERT and HOLTH for producing permanent incarceration of the iris as part of a glaucoma iridectomy. Most of the newer operations are founded upon the principle of establishing a permanently permeable cicatrix or "filtering scar." QUERENGHI, BJERRUM, and ABADIE have modified the anterior sclerotomy operation to this end, but few surgeons appear to have adopted their procedures. Cyclodialysis has been performed many times in many clinics during the last few years since the introduction of the method by HEINE. The operation is severe, liable to induce untoward results, and has not yet proved reliable in attaining the object aimed at. The reduction of tension is transitory, probably owing to fibrous union of the dislocated ciliary body to the sclerotic at no long interval after its operative release.

Greater success has been obtained with the various forms of anterior sclerectomy, and amongst these LAGRANGE'S operation has undoubtedly found most favour, both on account of its technical simplicity and the large measure of success in attaining the desired result. It differs from the ordinary glaucoma iridectomy a little more than the addition of a simple procedure, whereby a small portion of the sclerotic is snipped off from the anterior lip of the wound with scissors. In this manner firm fibrous union is impaired, and when successful the small gap is filled in with loose connective tissue, which permits the excess of aqueous to filter into the conjunctival lymph spaces, whence it is readily absorbed. HERBERT'S operation is more complicated, and appears to have been abandoned by its inventor in favour of a simpler operation, which will be referred to at a later stage.

The use of the trephine for the removal of a small disc of sclerotic has been advocated by FREELAND FERGUS and ELLIOTT, the principle being the same as in LAGRANGE'S and HERBERT'S operations. In ELLIOTT'S operation the opening is made into the extreme periphery of the anterior chamber and iridectomy is performed; it may, therefore, be regarded as a modification of LAGRANGE'S operation. In FERGUS'S operation the trephine is used more posteriorly, over the ciliary body, and an iris repositor is passed from the trephine hole into the anterior chamber, thus effecting a cyclodialysis. The operations were devised simultaneously and independently, and, as will be realised, are fundamentally different procedures. VERHOEFF'S sclerectomy resembles ELLIOTT'S except that the disc of sclero-cornea is removed by a specially devised punch or sclerectome, and only a small buttonhole is made in the periphery of the iris.

The most recent and probably the greatest advance which has yet been made, though the evidence is insufficient to demonstrate its utility, is the latest procedure advocated by HERBERT It consists of an anterior sclerotomy, so devised that a little flap of sclerotic is formed subconjunctivally. As the intra-ocular tension is restored after the operation the flap is lifted up somewhat, and in this manner firm union of the wound is impeded and spongy fibrous tissue permitting filtration is formed. The results hitherto obtained by this simple operation have been very gratifying, but it is still too early to assert that the great problem of the cure of chronic glaucoma has been solved.

In other directions the greatest advance in the problem of glaucoma is found in the invention of a reliable tonometer, whereby accurate numerical estimates of the intra-ocular tension have at last become possible clinically. Hitherto reliance has been placed upon the tactus eruditus of the surgeon, for the tonometers previously invented have failed in their object. The tonometer of SCHIÖTZ, however, bids fair to become an indispensable item in the ophthalmologist's armamentarium. It requires to be used with care and skill, and it entails some expenditure of time and trouble, but this is amply repaid by the accuracy and concordance of the readings. The instrument has been extensively used for some time in continental eye clinics, and is on its trial in this country. The reports hitherto obtained are uniformly favourable, and if they are substantiated, the acquisition of a reliable test of intra-ocular tension, to replace the uncertain clinical methods formerly in use, will prove a great boon.

Papillœdema.

A very able discussion of the pathogenesis of papillœdema, or "choked disc," due to intracranial tumours, &c., has been published by DE SCHWEINITZ and HOLLOWAY. This highly judicial review of the complex subject should be read by all neurologists and ophthalmologists. Time and experience have proved beyond dispute that blindness may be averted by prompt relief of intracranial pressure in these cases, even though the removal of the cause, such as a cerebral tumour, be impossible. The most important communication on this branch of the subject comes from Germany, in a paper by VON HIPPEL. His conclusions coincide with those now universally accepted in England.

Sir VICTOR HORSLEY adduces further evidence in favour of "ipsolaterality" of the papillœdema in cases of intracranial tumour—i.e., he strongly supports the localising value of the neuritis, holding the view that it commences first, and is usually most severe, in the eye of the same side as that on which the tumour is situated. He is of opinion that the papillœdema usually begins in the upper nasal quadrant of the disc.

Apropos of intracranial growths, BORDLEY and CUSHING have investigated the condition of the fields of vision for colours in these cases with interesting results. They find that the colour fields are often inverted and contracted, though there is no definite relationship between the contraction of the field for form and that for colours. Complete achromatopsia was noted in several cases, and hemiachromatopsia has occasionally been followed by complete homonymous hemianopia involving the same side.

Ophthalmia Neonatorum and Trachoma.

The necessity for notification of cases of ophthalmia neonatorum has been repeatedly dealt with recently in the columns of THE LANCET and the progress of the campaign reported upon. With regard to trachoma, interest has centred in the diagnostic significance of the so-called "trachoma bodies" of PROWACZEK and HALBERSTADT. Evidence has been brought forward by NOGUCHI and others to show that the bodies in question are not pathognomonic of trachoma, but may be found occasionally in ophthalmia neonatorum. They have been regarded as altered forms of the gonococcus. Considering the extreme difficulty of distinguishing these bodies with certainty from other intracellular granules possessed of similar staining reactions, their significance must be regarded as still *sub judice*.

Congenital Malformations.

Very valuable contributions to the explanation of many congenital malformations are contained in the Hunterian Lectures delivered this year by Mr. GEORGE COATS. He brings forward many ingenious suggestions based on the embryology of the eye, and at the same time accepts the view that some conditions, notably congenital anterior staphyloma, are due to the effects of intra-uterine inflammation.

Serum Diagnosis and Treatment.

WASSERMANN'S test for syphilis has proved of great value in diseases of the eye. Researches have been published by SCHUMACHER, COHEN, and others. Tuberculin treatment is now carried out frequently, particularly in cases of the more chronic forms of tuberculosis affecting the uveal tract and sclerotic. The results vary considerably, but this fact

is in a large degree explained by the great diagnostic difficulties.

Treatment.

Much attention has been devoted to the influence of X rays, radium, and ionisation upon various diseases of the eye. The subject must be regarded as still in the experimental stage, but some valuable results may yet be attained. Carbon dioxide snow has been introduced with success for the destruction of nævi and so on. New operative procedures for glaucoma and cataract have already been mentioned. ZIEGLER'S knife has been found useful for the division of dense membranes following the extraction of cataract, and for iridectomy in suitable cases.

DENTAL SURGERY.

Dentistry and School Children.

The subject which has attracted the most attention during the past year is that of the treatment of the teeth of the school children. So far but little has been done by the various educational authorities to carry out the work imposed upon them by the Act of 1907. The only effort, we believe, that has been made by the London authorities has been in the direction of approaching the present charities to ascertain how far the hospital authorities would be willing to undertake the treatment of children referred to them. In one instance—namely, at Poplar Hospital—an arrangement has been entered into which will secure the treatment of about 2500 children per annum, while a scheme for dental treatment at the Deptford Children's Centre has also been sanctioned by the Board. It is, we believe, the almost unanimous feeling of the dental surgeons attached to the London hospitals that it is inadvisable to attempt to deal with the problem through existing charities, and that the only right course is the formation of dental clinics under the direct supervision of the London County Council itself. The subject was dealt with in our issue of Oct. 1st, and it was there pointed out that inasmuch as the funds available will in all probability be insufficient for the work to be done as thoroughly as it should be done, the right course to pursue would be to employ the funds to produce the best results. The opinion we expressed was that the problem should be approached in the following order: (1) The thorough teaching of prevention to the parents; (2) the remedial treatment of the infants; and (3) the remedial treatment of the school children.

Periodontal Disease.

Several papers dealing with the subject of general periodontal disease have been published. In a contribution to THE LANCET[1] Mr. J. F. COLYER drew attention to certain points in this affection. He showed that the morbid anatomy of the disease suggested that the lesion in the bone was of the character of a rarefying osteitis. He drew attention to the fact that the clinical appearances are determined by the general condition of the patient, the resistance of the tissues, and the hygiene of the mouth. By a series of reproductions of photographs of the gum condition and radiographs he demonstrated that clinical appearances are not altogether satisfactory guides as to the extent of destruction of the bone of the tooth sockets.

The vaccine treatment of general periodontal disease was the theme of an interesting discussion before the Odontological Section of the Royal Society of Medicine.[2] The general trend of opinion seemed to be that the method of treatment required extended trial before any definite opinion could be given as to its value.

Effects of Nasal Obstruction.

In a paper by Dr. J. STODDART BARR[3] on the Effects of Nasal Obstruction during Childhood upon the Growth of the Teeth and Jaws, the author summarises his conclusions as follows: 1. That the changes are more rarely seen or much less marked in children under the age of 5 years. 2. That the most important causative factor is the lateral compression exercised upon the jaws as the result of the stretching of the cheek muscles consequent upon the mouth being constantly open. 3. That the direct contributory causes depending also upon mouth-breathing are: (*a*) lack of sufficient use of the jaws; (*b*) absence of the spreading action of one jaw upon the other, and the moulding action of the tongue; and (*c*) the short upper lip. 4. That the remote contributory causes which may play a part are hand-feeding, improper feeding-bottles, thumb-sucking, rickets, &c.

Dental Caries.

Mr. STANLEY P. MUMMERY,[4] in a paper on the Susceptibility of Teeth to Dental Caries, recounts some experiments undertaken to test the resisting power against lactic acid of different enamels. The teeth were suspended by silken threads in a solution of lactic acid 0·075 per cent., and with 100 teeth, the records of which are given, he found a very marked difference in the powers of resistance of the enamel.

In connexion with the subject of caries Mr. F. J. BENNETT records[5] an interesting series of experiments illustrating the action of fermenting milk on teeth. The experiments consisted in placing fragments of sound teeth in ordinary cow's milk and keeping them at a temperature of 35° C. The milk was changed at intervals—in some cases daily, in others after two or more days, up to a week. After varying periods he was able to produce a decalcification of the enamel and the dentine. Microscopical section of the dentine appropriately stained showed that micro-organisms had penetrated the dentinal tubes. The experiments are interesting and open up a wide field for research.

In a communication Mr. KENNETH GOADBY[6] deals with the question of the Buccal Secretions in Relation to Dental Caries. He states that organisms present in the mouth where caries is rampant invariably ferment glucose, lactose, and maltose, and occasionally cane sugar, but fermentation of cane sugar is more feeble and takes much longer than glucose or maltose. He suggests that, in addition to ordinary treatment, a change should be made in the flora of the mouth. For this purpose cultivations of some innocuous form of organism are made use of, such as B. mesentericus vulgaris or B. subtilis, and the spores of these are sown in the mouth or a lotion containing them is employed to rinse the mouth. The principle of the treatment advocated is to introduce organisms which do not ferment carbohydrate to acid, but which tend to produce an alkaline reaction and in addition by products inimical to acid fermentation.

Dr. KIRK has published some observations on the question of mucin, and he states that when there is an alkaline saliva loaded with mucin caries is usually very abundant. On the other hand, a clear acid saliva, free from mucin, is found in individuals who have very little caries. Now mucin is precipitated by acids, and when there is much mucin present in the alkaline saliva, acids formed locally in the mouth precipitate this mucin. Dr. KIRK has been able to show in a laboratory experiment that the mucin is thrown down by acids in the form of a film, and probably produces in the mouth one of the forms of plaque found on the teeth, this plaque consisting of felted masses of micro-organisms bound together by mucin. The mucin having been precipitated, the surrounding medium is acid, and decay may proceed readily beneath these films. This fact would seem to suggest that it is possible that a saliva of an alkaline reaction may

[1] THE LANCET, May 7th, 1910, p. 1258.
[2] Proceedings of the Royal Society of Medicine, Jan. 24th, 1910.
[3] British Dental Journal, May, 1910, p. 469.
[4] Proceedings of the Royal Society of Medicine, Odontological Section, Feb. 28th, 1910.
[5] Ibid., vol. iv., No. 1.
[6] Brit. Med. Jour., Sept. 17th, 1910.

be more likely to be present in cases of caries than an acid saliva. It is well known that bacteria will not grow at all readily in even a slightly acid medium, but require a neutral or slightly alkaline reaction in the culture medium. Thus it can readily be understood that—as was long ago pointed out by MILLER—the rapid proliferation of acid-producing organisms in an alkaline medium would give rise to a greater production of acid in the mouth in a given time than when the saliva was freely acid to start with.

Another communication as bearing upon the question of caries was published in the *British Dental Journal* by G. FRIEL. This observer examined 513 Kaffirs in Klipsprint Location. The conditions under which they lived approximated that of Europeans. In examining the teeth he was unable to use a probe, so that it is possible that the incidence of caries was greater than suggested. He found 1592 defective teeth, and, roughly speaking, 60 per cent. of the Kaffirs showed caries, the percentage of bad teeth being about 5.

In a paper on Drainage and Stagnation, Mr. J. G. TURNER[7] draws attention to the fact that dental disease is in the main due to the stagnation of food débris, &c., in and around the teeth, and that sufficient note is not taken of this by operators in their operations on the teeth.

Other Papers.

Mr. J. SEWELL ANDERSON gives a detailed account of a case of Facial Hemiatrophy,[8] in which the bones on the affected side were much smaller than those on the unaffected side, this being most marked in the case of the mandible, the difference being sharply defined at the symphysis. The necks and roots of the teeth on the affected side were also unduly exposed and loose. Another communication worthy of note is one by Mr. MONTAGU HOPSON, entitled "A Review of Some Modern Theories of Variation and Heredity, and Some Suggestions as to their Application to the Study of Orthodontia."[9] Mr. C. MANSELL MOULLIN, in a paper on the Essential Cause of Gastric and Duodenal Ulcer,[10] states that he is convinced that the real cause of the vomiting and hæmatemesis so often seen in young women is the persistent swallowing of septic toxins manufactured in the mouth and throat.

Under the title of "Two Odontoceles and Some Other Cysts,"[11] Mr. HOPEWELL-SMITH describes very fully two interesting cases of buried teeth associated with cyst formation. In the author's opinion the cysts met with in connexion with the jaws could with advantage be classified according to their pathological variations. He suggests the following: (1) Dental cysts; (2) eruption cysts; (3) follicular odontomes; (4) epithelial odontomes, or multilocular cystic tumours; (5) mucous cysts of the antrum; (6) odontoceles, (*a*) subcapsular, (*b*) extracapsular; and (7) cystic adenomata of the antrum and gum.

In a communication to the *Dental Cosmos*,[12] Professor A. MICHEL of Würzburg gives an extended account of his examination of the fæces of patients in relation to the digestion of starch and the masticatory apparatus. Briefly stated, he finds: 1. That persons with a sufficient number of teeth show starch present in the fæces if they are "bolters," and absent if they are masticators. 2. That in persons with an insufficient number of teeth the fæces contain more undigested starch in inverse ratio to the number of molars or premolars present. 3. That the introduction of dentures in cases where the masticatory apparatus is insufficient leads to a rapid diminution of the amount of starch in the fæces.

[7] Dental Record, vol. xxx., p. 490.
[8] British Dental Journal, vol. xxxi., p. 627.
[9] Dental Record, January, vol. xxx., p. 1.
[10] THE LANCET, Oct. 1st, 1910, p. 913.
[11] Proceedings of the Royal Society of Medicine, Odontological Section, April, p. 121.
[12] Dental Cosmos, November, p. 1272.

Other interesting papers are: A Review of the Manufacture of Artificial Teeth,[13] by THOMAS GIBBONS; The Casting Process and its Use in Dentistry,[14] by J. T. W. DAVIE; and What Dentists have Contributed to Other Professions,[15] by B. J. CIGRAND. The problem of the articulation has been exhaustively dealt with by Dr. A. GYSI in a series of papers.[16]

Bibliography.

Amongst the new publications issued during the year the following may be mentioned:—"An Atlas of Dentistry in Stereoscopic Photos," edited by KARL WITZET; "Modern Dental Materia Medica, Pharmacology, and Therapeutics," by J. P. BUCKLEY; "Dental Surgery and Pathology," by J. F. COLYER, being the third edition of "Diseases and Injuries of the Teeth," by MORTON SMALE and J. F. COLYER; "Dental Surgery Notes," by E. B. DOWSETT; and "The Principles and Practice of Operative Dentistry," by J. L. MARSHALL (third edition).

ANÆSTHETICS.

General Anæsthetics (Inhalation).

While various new methods of employing general anæsthetics have been contrived by continental surgeons, the tendency in Great Britain has been to study the reputed dangers and shortcomings of the accepted methods, and rather to modify than to abandon the modes of procedure which have become established. It has been pointed out by the editor of the *Therapeutic Gazette* and other American writers that many of the dangers and difficulties, which continental surgeons appear to regard as inherent in the use of chloroform and ether when given by inhalation, are in fact due to the lack of experience of those who are called upon to employ them; since, while on the continent general anæsthetics are relegated to junior officers, in Great Britain practitioners of special knowledge and experience usually undertake the delicate duties of the anæsthetist. This fact has to be borne in mind when statistics of deaths and dangerous sequelæ are quoted to prove that inhalation anæsthesia is beset with exceptional perils. The newer methods, such as subdural stovainisation, intravenous and terminal arterial anæsthetisation, are committed to practised surgeons, and their results are comparable to those of the specialists in this country, who give anæsthetics by inhalation and whose results are, upon the whole, extremely favourable to this method of narcosis.

Choice of Anæsthetic.

The range of selection has greatly increased. Formerly it lay between chloroform and ether; whereas, at the present time, spinal and local analgesia, intravenous and intra-arterial local or general anæsthesia, and the use of scopolamine with morphine alone or antecedently to a general anæsthetic, have to be added to the list. Again, the prolonged use of nitrous oxide for general surgery synergetically to scopolamine and morphine, or with spinal or local anæsthesia, as well as a large number of mixtures of chloride of ethyl, ether, chloroform, have found advocates. The methods of using these agents are also considerably modified, and the selection of the method of using the agent or agents has become as much a matter of importance as the choice of the anæsthetic itself. Papers dealing with these subjects have appeared during the year.

A discussion on the Choice of the Anæsthetic was held in the Section of Anæsthetics of the Royal Society of Medicine,[1] which was opened by Dr. DUDLEY BUXTON, who discussed the subject under the heads of (1) condition of the patient;

[13] Dental Record, Nov. 1st, p. 621.
[14] Ibid., May, June, and July.
[15] Dental Review, vol. xxiv., No. 9.
[16] Dental Cosmos, January, February, and March, 1910.
[1] Proceedings of the Royal Society of Medicine, vol. iii., p. 63.

(2) necessities of the operation, including the region involved; and (3) the duration of the operation. He favoured the use of chloroform following ether in all prolonged and suitable cases, and its employment in accurate volume percentages, together with oxygen. Dr. G. A. H. BARTON and Mrs. F. M. DICKINSON BERRY extolled the employment of ether by of the open method.

The Open Ether Method.

Mr. H. BELLAMY GARDNER read a paper before the Section of Anæsthetics of the British Medical Association on the open ether method.[2] For suitable cases he speaks in favour of the method. Lung affections he regards as contra-indications. Atropine (1-120th grain) is given before the administration, and morphine (1-6th grain) is added in the case of alcoholics and muscular subjects. The ether is dropped on 12 folds of gauze placed on a wire mask.

Dr. BARTON[3] has contributed a useful paper on this subject. Although advocating the plan, he admits objections—the length of the induction, the large amount of ether used, the difficulty of getting relaxation in muscular subjects, and for laparotomies. To meet these he suggests adopting the following plan. An inhaler is used which consists of a cylindrical chamber open at the top and having another opening about the junction of the middle and lower third communicating with the face-piece. This is lined with lint, so that the latter dips into the ether well, which is capable of holding two ounces. In this way a large evaporating surface for the ether is obtained. A Roth-Dräger type of face-piece with valves is employed, and simple adjustment permits the administrator to lessen or to increase the quantity of ether used. The C.E. mixture and chloride of ethyl, he suggests, may be employed before the ether is inhaled. Dr. BARTON, however, uses a few inspirations of chloroform vapour during the narcosis to promote anæsthesia in alcoholic and athletic persons; and relies upon morphine with scopolamine before the open ether method in laparotomies. Another "inhaler" suggested for the "open" ether method is described in THE LANCET of May 21st, p. 1421, by Dr. R. H. HODGSON.

Morphine and Scopolamine Narcosis.

A large number of papers dealing with the use of morphine and scopolamine with the open ether method have appeared, and the experience gained appears, upon the whole, to be favourable. Dr. CLIFFORD O. COLLINS[4] records 1100 cases in which these alkaloids were used. He regards the objections raised by TERRIER and others as unreal. Although he has used cactin synergetically he found it of little use. Ether given by a drop method has in his hands proved the best general anæsthetic to give subsequently to the scopolamine and morphine. He approves of giving repeated injections in the case of exophthalmic goitre, one being given the night before the operation is done. Children aged above eight years, in his experience, respond well to this method. This writer agrees with Dr. CRILE that nitrous oxide with oxygen, when employed after morphine and scopolamine, supply a valuable anæsthetic for major surgery.

Dr. CRILE[5] has compared the values of ether and nitrous oxide when used after scopolamine and morphine. Nitrous oxide, he thinks, causes less shock, less infection, and fewer after-effects such as nausea, vomiting, and headache. His conclusions are based upon experimental work, as well as 575 major operations carried out according to this method. Dr. CRILE has further elaborated a scheme which he describes as "stealing the thyroid," whereby a patient with exophthalmic goitre can be operated upon with the minimum of risk. Daily injections of scopolamine and morphine are made, while all suggestion of operation is avoided, and when the patient has become accustomed to this procedure she is wheeled into the operating-room and the general anæsthetic—nitrous oxide and oxygen—is given while the surgical condition is dealt with.

Dr. R. A. HATCHER[6] has contributed to the Council of Pharmacy and Chemistry of the American Medical Association an exhaustive report upon the action of scopolamine and morphine in narcosis and in childbirth. He regards the combination as valuable within limits, provided it is associated with some general anæsthetic, but he points out that in obstetrics it may increase the risk to the child. He supplies a valuable bibliography of the subject. A similar investigation undertaken by Dr. R. H. JAMIESON[7] gives experimental results which explain the clinical observations recorded by several surgeons upon the alarming retardation of respiration. Dr. JAMIESON states that artificial respiration restores animals whose breathing had dropped to five or six respirations per minute. RINNE[8] records two fatalities occurring within three days and due to scopolamine and morphine.

A somewhat unusual danger under this form of anæsthesia is reported by Dr. FAUST[9] of Berlin. The patient, a healthy youth, aged 17 years, developed violent spasm of the muscles of respiration with cyanosis. This occurred within an hour of the completion of appendectomy, and was so severe as to render the performance of artificial respiration impossible. The spasm passed off spontaneously but recurred six times subsequently; eventually the patient recovered. FAUST regards scopolamine as the cause of the spasm.

Dr. F. M. BARNES[10] of Baltimore has investigated the effects on metabolism of the scopolamine-morphine narcosis. When quantities are given sufficient to lessen the vital activities he found that a decrease of the absolute amounts of nearly all the normal urinary constituents occurred, while when scopolamine was given by itself there was increase of the vital activity and of the urinary constituents. These effects are transient and appear within 12 hours of the administration. Repeated doses of the drugs in combination, if given for a prolonged period, lead to the establishment of tolerance. The influence on metabolism, as shown by the variations in the urine, seems to arise through indirect or secondary action of the drugs. The delayed absorption in the alimentary tract is regarded as the primary cause of the urinary variations.

A considerable number of papers have appeared dealing with this combination in connexion with parturition. We may mention contributions by P. SICH,[11] and a review of the whole subject in the columns of the *Therapeutic Gazette* of Feb. 15th, which upon the whole speaks favourably of the plan, but would restrict its employment to hospital cases or those attended by a skilled nurse, as emergencies may arise which, if not promptly treated, may lead to serious results. Dr. TORRANCE THOMSON and Dr. DENNIS ATTERILL[12] have discussed the advantages of giving repeated small doses of scopolamine and morphine, while Dr. H. R. LAWRENCE[13] gives his experience of these drugs in obstetric practice in 126 cases. He had no maternal deaths, and the five deaths of the infants were, he thinks, not due to the scopolamine employed. 13·3 per cent. required resuscitation, while 73·3 per cent. are described as "lively," and 8·8 per cent. as drowsy. In 2·2 per cent. the mothers were unaffected;

[2] THE LANCET, August 20th, 1910, p. 555.
[3] Practitioner, November, 1910, p. 713.
[4] Journal of the American Medical Association, March 26th, 1910.
[5] New York Medical Journal, Jan. 29th, 1910.
[6] Journal of the American Medical Association, Feb. 5th and 12th, 1910.
[7] Brit. Med. Jour., March 26th, 1910.
[8] Deutsche Medizinische Wochenschrift, Berlin, Jan. 20th, 1910.
[9] Ibid., March 17th, 1910.
[10] Archives of Internal Medicine, April, Chicago (quoted by Journal of American Medical Association, May 21st, 1910, p. 1725).
[11] Deutsche Medizinische Wochenschrift, March 3rd, 1910.
[12] Edinburgh Medical Journal, December, 1909.
[13] Ibid., November, 1910.

in 17·7 per cent. they remembered, and in 82·2 per cent. they did not remember, the birth of the child. He thinks that when the infant is prejudicially affected it is the result of the morphine used. Although it remains an open question whether the labour is prolonged by these drugs, Dr. LAWRENCE is inclined to negative the suggestion.

The scopolamine and morphine sequence, besides being advocated for obstetric practice and as a preliminary to the use of a general anæsthetic, has found advocates among those who prefer to employ intrathecal injections of stovaine, tropacocaine, or other analgesic. It has been long recognised that nervous patients—and these form the bulk of those who have to face surgical operations—dread both taking the inhalation of a general anæsthetic and suffer severely also during prolonged manipulation under spinal analgesia. Dr. CRILE [14] has recently emphasised the danger of psychic shock especially in the case of persons suffering from Graves's disease. To meet this peril many surgeons have published their methods, which consist practically of the preliminary use of scopolamine and morphine. That this mind-shock is not a mere theoretical danger is shown by the experimental work of Dr. CRILE, which has demonstrated definite changes in the brain cells the result of fear.

Mr. A. E. JOHNSON [15] advocates the use of both intrathecal injection to block nerve influences provocative of shock, and a light general anæsthetic to obviate psychic influences. He asserts that "the combination of spinal and general anæsthesia is much more convenient and satisfactory." He points out that with a dosimetric method it is extremely easy to control the amount of chloroform if this anæsthetic is used, and to preserve an extremely light narcosis while ensuring a complete anæsthesia. A number of workers along these lines have adopted nitrous oxide gas or Hillischer's "Schlafgaz"—i.e., nitrous oxide and oxygen—as the general anæsthetic, using regional injections of stovaine or other local analgesic for nerve blocking. This plan Dr. CRILE advocated at the annual meeting of the British Medical Association.

NEU [16] employs scopolamine and morphine, and then maintains anæsthesia by a mixture of nitrous oxide and oxygen, employing a new form of apparatus, which he describes. Dr. S. BUNNELL [17] has extended the use of these agents to thoracic surgery. As a result of successful experiments upon the lower animals he claims that, given under positive pressure, the chest can be kept open for nearly two hours. Respiration and circulation can, he asserts, be kept going without difficulty, but so soon as the positive pressure is discontinued cyanosis, respiratory distress, and a vagal pulse develop, and death rapidly occurs.

Some diversity of opinion appears to exist among the advocates of scopolamine. While, upon the one hand, this drug is regarded as assisting in obtaining muscular relaxation, upon the other we are advised to omit scopolamine in abdominal surgery, as experience has convinced some surgeons that its use leads to muscular rigidity. Morphine with atropine should be substituted, it is alleged, when muscular relaxation is essential for the success of the operation.

Heart Massage.

An interesting case of cardiac failure under chloroform was reported by Dr. V. B. ORR [18] at the close of last year. The patient, a woman, aged 30 years, collapsed under chloroform. An abdominal incision was made and the heart, which was "flabby," was stroked from below the diaphragm. The woman made an excellent recovery. This case is recalled by others published by Captain T. C. RUTHERFOORD, I.M.S.,[19] and Mr. J. WALLACE MILNE.[20] Dr. ORR pointed out the three methods hitherto tried are: (1) the thoracic; (2) the subdiaphragmatic; and (3) the transdiaphragmatic. Two recoveries by the thoracic route have been recorded, but the method takes time and exposes the patient to serious unnecessary risks—e.g., pneumothorax. The transdiaphragmatic route has so far proved unsuccessful, so that the subdiaphragmatic is by most authorities regarded as the operation by election. Ten successes by this method are mentioned by Dr. ORR. The use of rubber gloves and the rapid sterilisation of the skin with tincture of iodine enable the surgeon, even if engaged upon a septic operation, to proceed to the laparotomy without loss of time, while pulmonary perflation with oxygen is carried out by the anæsthetist. In Captain RUTHERFOORD'S case the patient was a healthy adult native of India suffering from hæmorrhoids. The abdomen was opened and the heart was compressed 60 times a minute between the hands, one grasping it and one placed on the præcordium. The heart after 12 compressions hardened and resumed beating. Chloroform had been used. Mr. MILNE'S case was also a healthy male, and anæsthesia was produced in four minutes by chloroform. Comment upon this fact [21] suggests that the heart failure was due to over-dosage. The operation was for appendicitis. Incision to the left of the xiphoid cartilage allowed the entrance of the right hand which grasped the heart, the thumb being behind it. One squeeze initiated cardiac movement, and eventually the operation of appendectomy was successfully performed.

REHN [22] gives details of another case. A healthy boy, aged 7 years, collapsed while inhaling chloroform. Brauer's positive pressure apparatus was used to maintain respiration for two and a half hours, by which time complete restoration of respiration and circulation had occurred. The heart had been massaged by introducing the finger, but the pleura was unfortunately damaged and pneumothorax, which proved ultimately fatal, resulted so soon as the finger was withdrawn. The first heart movements were felt after 70 minutes and the beat was maintained for four hours. A useful tabulation of 50 cases is given by Dr. J. WHITE.[23]

Shock under Anæsthetics.

At the annual meeting of the British Medical Association a discussion of great interest took place upon this subject. Dr. CRILE advanced his well-known views with regard to the value of nerve blocking to protect the controlling centres from exhaustion. He pointed out, further, that both subarachnoidean injection and local analgesia fail to obviate psychic shock. To meet this he uses a general anæsthetic or scopolamine and morphine. Mr. JOHN MALCOLM, who does not regard as proven the theory of vaso-motor exhaustion being the cause of shock, advanced cogent arguments in support of what is now termed the acapnia hypothetical explanation of surgical shock.

We owe to Dr. YANDELL HENDERSON a mass of valuable experimental work supporting the view that when the blood has its content of carbon dioxide lowered to a certain point the symptoms of shock supervene.[24] Hyperpnœa leads to over lung ventilation, and when the carbon dioxide content is lowered the respiratory centre is no longer stimulated to act. Exposure of serous membranes also causes escape of CO_2 and leads to respiratory failure.

[14] Brit. Med. Jour., Sept. 17th and Oct. 1st, 1910.
[15] Ibid., Dec. 3rd, 1910. See also Archives of Middlesex Hospital, vol. xvii.
[16] Münchener Medizinische Wochenschrift, No. 36, 1910.
[17] California State Journal of Medicine, January, 1910.
[18] Proceedings of the Royal Society of Medicine, December, 1909. See also Therapeutic Gazette, May, 1910, p. 338.
[19] THE LANCET, April 30th, 1910, p. 1119.
[20] Brit. Med. Jour., Nov. 19th, 1199.
[21] Ibid., Dec. 3rd, 1910, p. 1822.
[22] Münchener Medizinische Wochenschrift, vol. lvi., No. 43.
[23] Surgery, Gynæcology, and Obstetrics, October, 1910.
[24] Fatal Apnœa and the Shock Problem, Johns Hopkins Bulletin, August, 1910; and American Journal of Physiology, vol. xxiii.

The work of MOSSO, MISCHER, HALDANE, and the pupils of the latter, with the brilliant investigations of Dr. YANDELL HENDERSON, have advanced the theory of acapnia to a position of essential importance in relation to surgical shock under anæsthetics. Professor ERNEST STARLING and Dr. E. JERUSALEM[25] have also studied the subject experimentally, and their results are in accord with those of YANDELL HENDERSON. A further aspect of the matter of importance in anæsthetics is that it has been found by the last-named experimenter that after the oxygen supply of blood, of lungs, and of tissues has been exhausted, and this occurs in two or three minutes of apnœa, the asphyxia of the tissues leads to the appearance in the blood of the products of incomplete tissue combustion. This is, in fact, a kind of acidosis. The products in moderate amount stimulate the respiratory centre acting with the carbon dioxide. The practical view of the matter may be summed up in Dr. HENDERSON'S advice to treat cases of respiratory collapse by oxygen and carbon dioxide introduced by a laryngeal tube rather than by artificial respiration, and using as a preliminary an injection of morphine which hinders hyperpnœa and so increases the blood's supply of carbon dioxide.

Dr. H. H. BROWN[26] discusses post-operative shock. He considers that general anæsthetics, if properly used, lessen rather than increase the shock of an operation, and he supports his view by reference to recent work upon the general nervous system.

The Status Lymphaticus.

Lymphatism formed the subject of an important discussion before the Royal Society of Medicine.[27] Mr. H. BELLAMY GARDNER reviewed the cases and literature published, and a number of physicians, surgeons, and anæsthetists spoke. Dr. DUDLEY BUXTON'S[28] clinical lecture upon the status lymphaticus has appeared in our columns. The view he advances is that, so far as our knowledge at present warrants us to make a definite statement, this condition bears much the same relationship to the use of anæsthetics as does any other general state which depresses the vitality of the tissues of the body, and especially of the central nervous system.

Blood Pressure in Anæsthesia.

Mr. W. GUY, Dr. ALEXANDER GOODALL, and Dr. H. S. REID[29] have investigated this subject. They think the length of time of inhalation makes no difference in the case of nitrous oxide. Ethyl chloride in large doses depresses the blood pressure and produces cardiac inhibition. G. A. BUCKMASTER and J. A. GARDNER[30] record a further research on the action of chloroform and dealing with the gases of the blood under chloroform.

Anæsthesia by Colonic Absorption of Ether.

Dr. W. S. SUTTON[31] advocates rectal anæsthesia for operations about the head, neck, chest, larynx, and mouth. He deprecates its use in abdominal surgery and in emergency operations, since careful preparation of the bowel is essential for safety. His method is to introduce ether vapour by an apparatus he has devised, which allows warmed air or oxygen to pass through ether and vaporise, so that it enters the colon. The narcosis is commenced by oral inhalation.

Dr. J. H. CUNNINGHAM[32] gives a valuable *résumé* of the subject and describes his method. LEQUEU, MOREL, and VERLIAC state that cardiac and respiratory complications are liable to occur with this method. Collapse, they consider, is due to sudden yielding of the ileo-cæcal valve. This permits of a rush of ether vapour into the small bowel, leading to absorption and consequent over-dosage. By employing oral inhalation before the rectal tube is inserted the valve becomes relaxed and this danger is obviated.

Various Papers.

Papers dealing with the general principles of anæsthesia may be noted. Dr. R. H. GREENE[33] published a paper on the Surgeon's Responsibility in Anæsthesia. Dr. J. W. BOVÉE has pointed out that the Trendelenburg position lessens and may abrogate renal secretion, and hence increases risk in renal and in arterial disease. Dr. CRILE[34] has undertaken an experimental and clinical research on nitrous oxide and ether anæsthesia; and Dr. F. W. BANCROFT[35] reviews the present knowledge of nitrous oxide anæsthesia. Dr. F. W. HEWITT, M.V.O., in a paper contributed to our columns[36] deals with the subject of the Æsthetics of Anæsthetics. He contends that general anæsthesia is better for the patient than local or any analgesia which allows the patient's mind to be harassed by the environment of the operation; and that by judicious methods the passage into and from insensibility can be robbed of horror. The paper is replete with wise advice, and its theme is one too little considered by many.

Several useful papers dealing with the emergencies of anæsthesia have appeared. One on Fæcal Vomiting under Anæsthesia[37] (Dr. DUDLEY BUXTON) suggests a means whereby "fæcal drowning" can be obviated in serious cases. Acidosis is considered in relation to anæsthesia by Mr. F. H. WALLACE, and Mr. E. GILLESPIE[38] reviews accepted views upon acidosis as a cause of death from operations under anæsthesia.

Dosimetry in Chloroform.

The report[39] of the special Chloroform Committee of the British Medical Association has been presented to the profession, and its leading features formed the basis of a discussion upon the subject of dosimetry which took place on the opening day of the annual general meeting of the British Medical Association. The practical side of the question was introduced by Dr. DUDLEY BUXTON, while Dr. A. D. WALLER, F.R.S., spoke from the side of physiology. The report is too voluminous for us to do more than mention. It presents a historical survey of the subject, and physiological and clinical observations which demonstrate the effects of definite doses of chloroform upon the respiration, circulation, and organism as a whole.

Spinal Analgesia.

As has been pointed out above, many observers have become impressed by the danger attendant upon the patient's preserving consciousness during an operation. A considerable number of papers have been published which describe the merits of a combined method of spinal and general anæsthesia. Various writers have confirmed the view commonly expressed in this country that JONNESCO'S method of high injection is less safe than the lower site, and that the addition of strychnine does not abrogate the danger. A discussion upon the subject was opened by Dr. J. BLUMFELD during the annual general meeting of the British Medical Association, and the views expressed by the anæsthetists who spoke were rather in depreciation of this method, except under very exceptional

[25] Journal of Physiology, May, 1910.
[26] Practitioner, August, 1910.
[27] Proceedings, Section of Anæsthetics, January and March, 1910.
[28] THE LANCET, August 6th, 1910.
[29] Edinburgh Medical Journal, March, 1910.
[30] Journal of Physiology, vol. xli., p. 246.
[31] Annals of Surgery, April, 1910.
[32] New York Medical Journal, April 30th, 1910.
[33] Ibid., June 4th, 1910.
[34] Ibid., vol. liv., p. 233.
[35] Ibid., p. 1589.
[36] THE LANCET, March 5th, 1910.
[37] Brit. Med. Jour., April 23rd, 1910.
[38] Practitioner, February, 1910.
[39] Brit. Med. Jour., July 9th, 1910.

circumstances. Two deaths have been published in detail—one by Major GABBETT, I.M.S.,[40] who injected novocaine and strychnine in the interspace between the twelfth dorsal and first lumbar vertebræ; and the second by Mr. VICTOR MILWARD,[41] who also pursued JONNESCO'S method. Mr. MILWARD regards the death as due to the drugs employed.

Mr. H. T. GRAY has published his third series of 100 cases of spinal analgesia in children,[42] and gives a very fair presentation of the subject from his point of view. The advantages and drawbacks are carefully tabulated and appraised. Mr. GRAY'S papers form a valuable addition to our knowledge of this much-debated subject. THE LANCET (July 30th, p. 325) notes a "personal" experience—viz., of Captain J. DORGAN, R.A M.C. It is somewhat more favourable than that of a fellow officer who published his experience some time back in the journal of his corps. Dr. SPILLER and Dr. LEOPOLD[43] publish a report upon the action of stovaine upon the central nervous system. Although the research cannot be taken to apply in its entirety to the human being, it appears to indicate that there is danger in repeated injections, and that the brunt of the injury falls upon the motor tracts.

Intravascular Anæsthetisation.

In the Cameron lecture[44] Professor AUGUST BIER discussed local anæsthesia with special reference to vein anæsthesia. He points out the value and limitations of SCHLEICH'S infiltration method as elaborated by BRAUN, and eulogises the use of BRAUN'S isotonic solutions of novocaine and suprarenal extracts. Failure in this method is caused usually by not waiting long enough, half an hour at least being required. Other plans are HACKENBRUCH'S perineural injection, KROGIUS'S method of conductive anæsthesia, and CORNING'S and OBERST'S systems. Endoneural injection requires as severe an operation to produce anæsthesia as that for which it is merely an adjuvant method. The principle upon which vein anæsthesia is based is that the nerve trunks are surrounded by dense connective tissues which are hardly permeable to infiltration. If the analgesic is introduced into the circulation it readily enters and anæsthetises these structures and complete analgesia results. BIER describes his technique; he uses a Janet's syringe and glass cannula, with isotonic solution of novocaine 0·5 per cent., and 100 c.c. is the utmost quantity to be injected. It is essential to obtain ischæmia, to infiltrate and isolate a vein competent to hold the cannula. BIER distinguishes direct anæsthesia, which occurs in the area between the constricting bands, and indirect, which develops later in the tissues below the peripheral bandage. This is a regular conductive anæsthesia. The analgesia is brief and the addition of suprarenin did not remedy this. BIER considers the dangers of poisoning can be avoided if due attention is paid to his somewhat complicated technique and the quantity of the drug injected is strictly limited. He restricts the method to cases which cannot be treated by simple local anæsthesia. He has tried it in 244 cases.

HITZROT has suggested a modification of the plan BIER enunciated at the meeting of the German Surgical Society in 1909.[45]

Dr. J. L. RANSOHOFF[46] exposes an artery under infiltration anæsthesia, and ESMARCH'S strap is fastened some distance above the point to be injected and from 4 to 8 c.c. of 0·5 per cent. cocaine in normal saline solution are introduced into the blood stream. Although we are told the method is of great value, it obviously is not free from danger, and depends upon somewhat limited experimental data. It will be remembered that GOYANE suggested a similar plan in 1909.

Intravascular Injection of Ether or Chloroform.

BURKHARDT[47] has experimented and finds intravenous injection of chloroform causes hæmoglobinuria, but with 5 per cent. of ether in saline solution this is absent. 7 per cent. of ether, however, caused this complication. Thirty human beings were subjected to this treatment and without fatality. Several had the preliminary injection of scopolamine and morphine. H. KÜTTNER[48] has pursued this method in 23 cases. He cautions against the danger of thrombosis. Dr. R. GIANI[49] reports from Dr. DURANI'S clinic two cases of intravenous injection of chloroform. The injection was stopped when unconsciousness appeared and resumed when the patient evinced signs of returning sensation. Slight albuminuria followed. GOYANE[50] regards intra-arterial as superior to intravenous injection owing to the absence of valves in the arteries.

Local Analgesia.

Papers of interest have appeared by H. K. OFFENHAUS,[51] describing his method of performing operations upon the mouth and bones of the face under local analgesia, and by H. FISCHER[52] dealing with alypin, a drug which he appears to regard as one of the best of analgesics. A useful paper which summarises our knowledge of alypin appears in the *Therapeutic Gazette* for January last from the pen of Dr. F. M. FERNÁNDEZ. J. ROTHMANN[53] gives a useful account of the use of local analgesics in the routine work of general practitioners. K. MAYER[54] has adopted with success the plan in midwifery of cocainising the nose of women during labour pains. He also injects beside the dura and into the periosteum between the coccyx and sacrum. While alleviating their pains, it has never in his experience done any harm to mother or child. He avoids injecting the dural sac. Dr. F. H. MCMECHAN[55] discusses the anæsthesia for prostatectomy, and regards local injection in the perineum and suprapubic region as safest. BEVAN, however, while using a local analgesia, prefers to render the patient unconscious by means of nitrous oxide and oxygen.

That local analgesia is not without its perils is once more forced upon us by the account given by Captain A. D. JAMIESON, I.M.S.[56] In the course of an operation for urethral stricture a 10 per cent. solution of cocaine was injected. As the first injection failed to produce anæsthesia a second was made. The patient became convulsed and died.

Dr. BREWSTER ROGERS and Dr. HERTZLER have employed quinine and urea hydrochloride as a local analgesic, and regard them as equal to cocaine and to possess the property of conferring analgesia which persists for several days.

PUBLIC HEALTH.

The death of KING EDWARD VII., with all its far-reaching consequences, was an event of special significance in so far as preventive medicine is concerned. Although there is every reason to believe that our reigning monarch will take an interest equal with his father in all that appertains to the health of the people, the progress of hygiene and the development of administration during our late KING'S reign would

[40] Ibid., March 19th, 1910.
[41] Ibid., March 26th, 1910. See also Therapeutic Gazette, September, p. 644.
[42] THE LANCET, June 11th, 1910, p. 1611.
[43] Journal of the American Medical Association, June 4th, 1910.
[44] Edinburgh Medical Journal, August, 1910.
[45] Therapeutic Gazette, January, 1910.
[46] Annals of Surgery, April, 1910.
[47] Archiv für Experimentelle Pathologie und Pharmakologie, Band lxi., p. 323.
[48] Zentralblatt für Chirurgie, Feb. 10th, 1910.
[49] Il Policlinico, vol. xvi., No. 51.
[50] See communication to Madrid Medical Academy, 1909, and Siglo Medico, Oct. 9th-16th, 1909.
[51] Deutsche Medizinische Wochenschrift, No. 33, 1910.
[52] Ibid., Nos. 25 and 38, 1910.
[53] Münchener Medizinische Wochenschrift, No. 28, 1910.
[54] Medizinische Klinik, May 20th, 1910.
[55] Boston Medical and Surgical Journal, March 3rd, 1910.
[56] Journal of the Royal Army Medical Corps, May, 1910.

furnish material upon which an instructive volume might be written. Not only did this period mark a very great advance in the sanitary condition of the British Isles, but it also corresponded with a steady progress in tropical medicine and the application of fresh knowledge to the needs and circumstances of our colonial possessions.

We are as yet uncertain as to the precise form which memorials to our late KING will take in one or another part of Great Britain, but there are already indications that the furtherance of the sanatorium movement in certain counties will be one of them. And the interest which our present ruler took, as PRINCE OF WALES, in the subject of tuberculosis is sufficient to guarantee that his influence will always be exercised in the direction of assisting well-considered measures for the amelioration of the public health and the furtherance of scientific research.

Rat Plague in Suffolk and Elsewhere.

From a purely epidemiological and historical standpoint the event of the year 1910 has been the occurrence of what appears to have been a somewhat extensive epizootic of rat plague in parts of East Suffolk, accompanied, fortunately, by only a very few human cases. Our knowledge of rat plague in this country is not a very extensive one, and it is confined largely to the apparently limited outbreaks which have occurred from time to time at certain of our ports, such as London, Cardiff, Glasgow, and elsewhere. But so far as can be judged, the epizootics have disappeared, or, at any rate, have given rise to no further cases of human plague, after a few cases have manifested themselves and been dealt with promptly. It is, of course, not altogether impossible that the rodent malady may still exist in some of these localities in a chronic form, but as to this there seems to be no evidence, and, indeed, such evidence as there is is against such a view. But the work of the Indian Plague Commission has shown that in certain villages this chronic plague amongst rats does obtain in the off seasons, and that similarly at these times there are indications of the acute phase of the epizootic.

But these valuable Indian researches relate largely to the black rat (M. rattus), and not so much to the brown rat (M. decumanus), with which we have almost exclusively to deal in this country at the present time, and the difference between the habits of these two species is an all-important point in considering the relation of rat plague to human plague here in Great Britain. The black rat is, for the most part, a house rat, and, in fact, the report of the Indian Plague Commission speaks of it as almost "a domesticated animal," living and breeding, as it does, in the houses where the people live. Its nests are found in little-disturbed accumulations of material, such as stacks of firewood, cotton waste, &c., and in recesses such as cupboards. Moreover, in India the grain-supply of the house is stored on the premises, and articles of food, such as flour and potatoes, are easily accessible to the rats. The degree of infestation of the Indian dwellings by rats may perhaps best be gauged by the fact that the villagers commonly complain of having their sleep disturbed by the rats running over them, while the villages themselves are honeycombed with rat burrows ramifying in all directions. As, too, is well known, there is a great indifference amongst the natives of India as to the presence of rats in their homes, and they are said sometimes actually to protect the rats from molestation.

On the other hand, the brown rat (M. decumanus), with which we are now chiefly concerned in England, and which, of course, is also quite common in Bombay, lives mainly outside houses in the sewers, stables, granaries, hedgerows, stacks, and barns; and it is to this great difference that in all probability we owe our relative immunity to human plague in this country, even in the presence of an extensive rat-plague prevalence. And if this be so, our greatest efforts should be directed to keeping the rats out of our houses, partly by rendering them rat-proof and partly by removing from their vicinity all collections of refuse, grain, and other food which afford haunts for the rodents. There has within the last two months been apparently taking place in the affected corner of Suffolk a vast *experimentum crucis* in the destruction of an enormous rat population, a not inconsiderable proportion of which may have been plague infected, and yet, presumably, no human cases have occurred, even although it is to be assumed that large numbers of plague-infected fleas had opportunity of gaining access to the rat-catchers who were destroying their natural hosts. The explanation of this immunity of the rat-catcher is probably to be found in this fact, that a replete rat-fed flea does not take readily to the human host, and perhaps this may be more particularly the case with the Ceratophyllus fasciatus than with the P. cheopis, the black-rat flea. And there is also the additional fact that infection but very rarely follows the bite of a single rat flea. But whatever the explanation, the immunity of the rat-catchers is a reassuring circumstance.

At this time of year, however, too much reliance must not be placed upon this circumstance. Plague is a seasonal disease, depending primarily upon flea-prevalence, and it is possible that, with the ascending flea-wave of next year, there may be other human cases, and it is, therefore, at that time that renewed observation and rat destruction may be obligatory upon the local authorities. In the meantime, attention should be paid to the poorer properties in the invaded districts, not because there is much evidence that actual insanitation, in the ordinary acceptance of that term, appears to have very material relation to the presence of plague, but because it is the dilapidated houses of the poorest and dirtiest people which are most likely to be invaded by rats, and, it may be added, by fleas and bugs.

The Indian experience all points in this direction—i.e., that the incidence of the disease is less upon the well-to-do than upon the poorer population. The report of the Indian Commission is to the effect that Europeans are practically exempt; and the explanation of this relative immunity of the better-off is that as the people rise in the social scale they occupy houses of better structure, and their method of living approaches nearer to the European type. "The compounds of the houses are kept clean, and the household rubbish which accumulates is relegated to a godown, and there is less shelter or attraction for rats." Moreover, the well-to-do Indians live more like the Europeans and cease to regard the rat as a domesticated animal. In other words, in India the question of habit or custom is a determining one as regards immunity from plague. But, for all this, we must in no sense relax our efforts. Notwithstanding the statement of the Indian Commissioners that Europeans are practically exempt in India, we know that Europeans in this country and in others have within recent years suffered sufficiently heavily from plague. Rat destruction must be continued, and more especially must the greatest vigilance with respect to the discovery of dead or dying rats be exercised. The danger signal for human beings is the dead plague rat, and we must remark that the brown rat is highly susceptible to plague, and that the researches of TIDSWELL in Sydney have shown that the rat flea of this country (Ceratophyllus fasciatus) will, when starved, bite man. Similarly GAUTIER and RAYBAND showed in 1903 that plague could be communicated from rat to rat by this same flea.

Although it is a perfectly sound policy to continue to persevere with the destruction of rats which has been going on over such large areas, the fact should not

be lost sight of that there is abundant evidence to show that, even after the expenditure of a very large sum of money and steady application on an extensive scale, but little, if any, permanent effect is produced upon the rat population, so great is the fecundity of this rodent and so rapidly does it fill up its ranks in face of attempts to exterminate it. This has been the teaching of experience in Sydney over several years, and it would appear to be the lesson to be learnt from the Indian work. The greatest advantage is probably to be secured by vigorous action in actually infected localities or in localities where an outbreak of the disease is to be suspected.

The line of attack in the case of plague is not altogether unlike that which takes place in the cases of malaria or yellow fever—that is to say, the destruction of the breeding places of the several hosts. In the two latter cases no serious direct attempt is made to destroy the actual mosquitoes; the object is to destroy their breeding places and to keep them out of the houses. In the same fashion with rats, attempts to exterminate the species by setting up ring fences and undertaking wholesale slaughter can only be very partially successful, and on that account they must be carried on in conjunction with the removal of the breeding and feeding places of the animals, and by rendering our houses proof against their entry.

There should be little difficulty in this country in dealing with human cases should they occur—that is to say, unless our sanitary administration is a delusion and a snare. We have possibly become a little over-alarmed owing to the disease presenting itself in its worse—i.e., the pneumonic—form, the infectivity and fatality rate of which are sufficient to frighten the bravest. But we have the authority of the Indian Plague Commission to the effect that only 2·5 per cent. of all cases of plague are of this type, and that in other forms the disease is "not particularly infectious or contagious, and man-to-man infection plays no important part in the spread of epidemics in India." Multiple cases in invaded houses are, the Commission states, rare. But however all this may be in India, the disease in different countries may not behave in quite similar fashion, and here in this country we must rely upon a properly administered system of the notification of suspected cases. If all medical practitioners are sufficiently on the *qui vive*, provided that isolation, nursing, and observation accommodation are available, together with supplies of plague prophylactic, there would not appear to be ground for any undue apprehension. But it is idle to pretend that the situation is not an anxious one.

The Limitation of the Effects of Syphilis.

It may, perhaps, be said that this is a subject which belongs more to the domain of therapeutics than to that of prophylaxis; but, as a matter of fact, the two are in this instance so blended—as, indeed, they are in many other cases—that treatment must be regarded as largely preventive in its scope. It is not inconceivable that in years to come the sanitary authorities may be found to be supplying gratis the new syphilitic drugs, much in the same fashion as they now supply diphtheria antitoxin.

It is a matter of peculiar interest that a subject which, from the exclusively preventive aspect *viâ* the Contagious Diseases Acts, has been so vigorously and successfully opposed, should be in a fair way to be solved under the guise of treatment, unless the evidence at our disposal is worth much less than it appears on the surface to be. Over and over again has preventive medicine endeavoured to bring venereal disease within its administrative purview, but on each occasion public opinion has been too powerful. And now, a quarter of a century or more later, there comes "606," and with it the hope that the sequelæ of syphilis, amongst those who care to take advantage of science, may cease from seriously troubling civilised peoples. What is the actual lethal measure of syphilis cannot be accurately determined, but, as Professor OSLER showed in a lecture which we published not long since in our columns, the disease reaps annually an ever-abundant harvest. What is the veritable value of "606" may require time tests for its proof; but repeated trial is justified.

Enteric Fever Carriers.

Progress in our knowledge relative to the comparatively new danger which has now been added to enteric fever has been made during 1910, and the publication by the Local Government Board of a report by Dr. J. C. G. LEDINGHAM has focussed in useful fashion the present condition of the subject and furnished a full bibliography of it. This, together with the presidential address delivered before the Epidemiological Section of the Royal Society of Medicine by Dr. THEODORE THOMSON, should be read by all those who are anxious to assess the real influence of carrier cases in maintaining enteric fever prevalence. It must be admitted that we are still ignorant of the magnitude of this danger. Although it seems probable that some 2 to 3 per cent. of persons who have suffered from recognised attacks of enteric fever become carriers, and that possibly the proportion of carrier cases in the population as a whole may be as high as from 3 to 4 per 1000, we must await further investigation, more particularly in connexion with towns in which there have within recent years been extensive outbreaks of the disease, before we can even approximately assess the magnitude of the carrier's operations. Certainly, one of the most disturbing features in connexion with the subject is that persons who are never suspected to have suffered from the disease may nevertheless be found to be carriers. These carriers appear to be more common in adult life than in youth, and in the female than in the male sex. This is an unfortunate dispensation of nature, in that females are more commonly concerned with the preparation of food-stuffs than males, and there is only a very partial compensation in the fact that males are, perhaps, more than females engaged in the milking industry.

But the most disappointing circumstance in connexion with the research so far is the fact that no treatment—whether of drugs, vaccines, or operation—appears to be of permanent value. And this renders the circumstance that the movements of these carrriers cannot be largely controlled doubly deplorable. We are, therefore, left to rely upon the persuasive powers of our public health officials, and upon the practice of rigid cleanliness amongst such of our carriers as are engaged in the preparation of food or the drawing of milk. There is at least some comfort in the fact that GACHTENS has found that, after smearing the hands and fingers with fæces containing enteric fever bacilli, it was practicable by washing with soap and water alone, and even without subsequent drying of the hands, to cause a marked fall in the number of B. coli and B. typhosus. But if the hands were dried thoroughly after removal of the soap in running water the two organisms were found to have entirely disappeared. This method of hand washing is regarded as a fairly complete protection for ordinary persons, but those whose occupation entails the handling of food-stuffs are advised, in addition, to disinfect their hands in alcohol, either in the form of eau-de-Cologne or spirit of wine, both of which have been found satisfactory.

The Curative and Prophylactic Employment of Diphtheria Antitoxin.

We have on many occasions referred in our columns to the statements made in the annual reports of certain medical officers of health to the effect that children suffering from diphtheria not infrequently arrive at isolation hospitals, even

with the disease quite advanced, without their having been afforded the advantages of diphtheria antitoxin. We cannot understand these serious omissions. It is the obvious duty of every medical man, when he has reason to believe that he has to do with diphtheria, to explain emphatically to the parents what the proper treatment is. But we gather from the reports to which we have referred that this is by no means always done. The question of cost is, we suspect, responsible for this neglect in a certain proportion of cases, and with the object of removing this drawback many local authorities have for some years arranged to supply antitoxin gratis for the use of persons not in a position to pay for it. But even where this has been the case the provision has not, we understand, always been taken advantage of. But we are glad to see that the Local Government Board has now issued an Order, under Section 133 of the Public Health Act, 1875, and under Section 77 of the Public Health (London) Act, 1891, providing for a temporary supply of diphtheria antitoxin and of medical assistance in connexion with such supply. We note with satisfaction that the Order authorises sanitary authorities, or requires them at the direction of the Local Government Board, to pay to the medical officer of health a reasonable compensation for all action by him in executing the Order.

The Value of Isolation Hospitals.

There is still going on in the public health world a sort of mental rumination upon this interesting subject; and there is, perhaps, gradually approaching what may be termed a provisional crystallisation of thought in the direction of utilising these institutions more for selected cases of disease, notably scarlet fever, than as a means for the accommodation of every case in every district. There are also being carried out some instructive observations and experiments in reference to the "cubicle" and "cordon" system of isolation, with or without certain inunction processes. The first system is, of course, on the lines that were adopted now a good many years ago at the Pasteur Institute in Paris; the second system is a species of extension or modification of the first, based upon the belief that infection takes place exclusively by contact. There is also another modification in process, and that is the open-air treatment of the acute exanthemata, which is apparently being carried out with good results at Nottingham.

But, all these modifications notwithstanding, there is still pressing need for more isolation hospitals. Very few, if any, medical officers of health would claim that anything approaching proper isolation can be carried out in the homes of the poor in cases where there are many children; and, again, no responsible official would advise that the children should be kept at home in premises where milk or other foods are dealt with, or where clothing or similar materials likely to convey infection are handled. Greater efficiency in our smaller isolation hospitals is certainly called for, and the difficulty of securing adequate observation wards in the small hospitals, which single districts alone can usually afford, points to the expediency of providing well-equipped joint hospitals at convenient centres. In THE LANCET of Feb. 19th we drew attention to a valuable paper by Dr. F. G. CROOKSHANK in which, *inter alia*, he expressed the opinion that isolation hospitals remained "about the cheapest thing in practical insurance offered to the small ratepayer. ..... For about 5*s*. to 6*s*. a year it insures him against all expense in the event of his household becoming stricken with infectious disease, and safeguards him against business or professional loss." It is to be regretted that the average district councillor does not accept this view in practice.

The Control of Tuberculosis.

Distinct advance has been made during the past year in obtaining useful information as regards those cases of pulmonary tuberculosis which are in most need of help; and the new regulations which provide for the notification of all pauper cases should enable local authorities to put to the best use any arrangements they have made or accommodation which they possess, either for education or for treatment. The regulations are apparently being applied with discretion, and we have heard of no hardship being occasioned by their application.

The number of sanatoriums is being gradually increased, some of the new ones—such as that in process in Shropshire, and that which is contemplated and provided for at Ipswich—being in memory of our late monarch. Other sanatoriums, such as those of Westmorland and Durham, have made notable additions, the former having opened a home for advanced cases and the latter a separate institution for women.

There has been a good deal of critical discussion during the past year concerning the reliability of, and the inferences to be drawn from, sanatorium statistics. The discussion has not yet ended, but the criticism of the year has not been without its influence. In the first place, it is clear that more care and, we may add, candour are necessary in the presentation of these figures. All cases admitted, of whatever description, should be included; and all those cases should be followed up and accounted for year by year, the figures for each year being kept quite distinct from those of other years. It is a pity that the statistics year by year should in some instances lay themselves open to hostile criticism, and such criticism is inevitable so long as optimism is unduly strained after. It is contended by some that it is impossible to demonstrate the value of sanatoriums by statistics, because there are no reliable data relative to the duration of life of consumptive patients in pre-sanatorium times. To a large extent this is a matter of opinion, and the question really is whether such statistics as there are are properly comparable with sanatorium statistics of to-day. There are some observers who hold that many of the patients who now find their way into sanatoriums would in pre-sanatorium days never have been found to be tuberculous at all, unless possibly on the post-mortem table, and probably there is some truth in this view.

But although there may be differences of opinion with regard to the value of the statistics, there would appear to be little room for doubt that there is an almost unanimous opinion in the medical profession to the effect that the proper treatment for pulmonary tuberculosis is fresh air, abundant food, and medical control; and, this point being conceded, the only outstanding question is whether such treatment is best secured outside or inside what we call a sanatorium. The answer clearly depends upon the circumstances in any given case, but it may reasonably be contended that, when more or less continuous medical observation is necessary, there are economical and other advantages in favour of sanatoriums. It is clear, also, that the dwellers in towns cannot obtain the necessary fresh air or frequently a sufficiency of wholesome food in their own homes. In other words, this question of the value of sanatorium treatment cannot be fairly weighed up if this almost unanimous opinion of medical men as to their value is allowed to have no weight.

The Use of Isolation Hospitals for the Treatment and Education of Tuberculous Patients.

We are glad to see from the annual reports of medical officers of health that our fever hospitals, and more particularly our small-pox hospitals, are being in increasing degree utilised in non-epidemic times for the treatment and education of those who are suffering in various degrees from pulmonary tuberculosis. At first sight some dangers and inconveniences might be contemplated in connexion with a

practice such as this, but the somewhat extensive experience now available justifies the inference that, with the employment of reasonable and obvious precautions, no drawbacks whatever, except perhaps the sudden removal of the consumptive patients to their homes on the occurrence of small-pox or of an extensive outbreak of one of the other exanthemata, need be contemplated. And as to this drawback, it has to be observed that the tuberculous patients discharged would, on again reaching their homes, possess the great advantage not only of considerably better general health, but also of a full knowledge of how best to regulate their lives in future. The balance is clearly altogether in favour of this growing practice, and more particularly is this so with reference to small-pox hospitals, which, at any rate in past years, have remained practically untenanted for long periods together. The removal of the tuberculous patients on the occurrence of small-pox should occasion them no serious inconvenience, and, indeed, if such patients had been carefully revaccinated at a recent date, there would seem no reason why, if a separate building could be retained for them, they should not remain in the hospital.

The Better Control of Our Milk-supplies.

No comprehensive steps have been taken during 1910 with reference to the milk-supply of the country as a whole; but, nevertheless, certain of our large towns are doing some good work under the Model Milk Clauses, which are exerting a salutary effect upon the condition of the cowsheds and the cleanliness of milk for very many miles around each of the towns which possess the clauses in question. We drew attention in THE LANCET of Dec. 3rd last to recent action taken by Leeds under these model clauses. A milkman outside of Leeds, although supplying milk to Leeds, had failed to notify to the medical officer of health of Leeds the fact that his herd contained a cow with a tuberculous udder. But the power which is conferred by the clauses of examining in Leeds the milk supplied from outside had revealed the existence of tubercle bacilli in this supply. The farm was visited, the tuberculous cow found, and the milkman convicted. But although good work is no doubt being done in London and many other large towns, control in small urban districts and in rural districts which are outside the influence of the model clauses is often practically non-existent. The standard set by many rural district councils leaves the sanitary condition of the cowsheds much where it was 20 years ago. It seems doubtful whether much real progress will be made in these districts until administrative power in this particular is placed in the hands of county councils.

The Housing of the Working Classes Act, 1909.

So far as this extremely important measure is concerned, the year 1910 has been one largely of digestion and assimilation by local authorities of the numerous regulations which have been issued under its provision by the Local Government Board. The more the Act is studied the more complete seem the powers which it contains; and with the cordial coöperation of the local authorities and a sufficient driving power at Whitehall, the degree of wholesomeness and comfort in which the working classes live should be greatly enhanced. The regulations issued by the Local Government Board aim at systematising and enforcing in detailed fashion the routine inspection of dwellings, in order to discover and remedy the defects which, no doubt, exist in every sanitary district, but which are not sought out. A sufficiently broad view is taken in the regulations as to the discovery of defects which "may tend to render the dwelling-house dangerous or injurious to the health of an inhabitant," and it is this "tendency" which should be easy to translate into action. Several of our large towns have long since taken what may be termed town-planning action; but with the help of the new Act there should soon arise among our large towns wholesome suburbs in which, not only physical health, but also a measure of æsthetic enjoyment will be possible.

The Appointment of County Medical Officers of Health.

Certainly one of the most important provisions of the Housing and Town Planning Act is that contained in Section 68 of Part III., whereby it becomes compulsory on the part of county councils to appoint a county medical officer of health under Section 17 of the Local Government Act, 1888, and we are glad to see that the counties which had not already made their appointments are gradually falling into line. But there is nevertheless, it seems to us, if the best administrative results are to be obtained, need for selecting officers who are, in the first place, public health specialists rather than school medical officers alone, without experience in sanitary administration, and who may have only quite recently obtained the necessary diploma. It is of great importance that those who are called upon to some extent to supervise the work of, and to give advice to, district medical officers of health should be persons who possess some additional claim to do so than the mere possession of a diploma in public health, which may have been possessed by some of the district medical officers for many years.

The Appointment and Duties of Medical Officers of Health.

What was practically the last administrative act on the part of the Central Health Department was the issue of a new general Order relative to the appointment and duties of sanitary officers outside the metropolis. We shall notice the Order more in detail shortly, but we may here mention that it modifies previous Orders in certain important particulars. Its general tendency is in the direction of ensuring permanency of office, for appointments can now be made without limit of time, and in place of automatic lapsing of appointments automatic re-election will occur. The whole-time appointment is encouraged by pointing out that the officers in question may conveniently hold the appointments of police surgeon, public vaccinator, district medical officer, and medical officer of the workhouse, as well as that of certifying factory surgeon. Moreover, a whole-time officer might supplement his income by the examination of water and by acting as consultant in cases of infectious disease. We are glad to see, too, that in the opinion of the Central Department the medical officer of health should be more generally recognised as the official head of the public health department, and that the sanitary inspectors should act under his supervision.

The Conservation of Child Life.

The valuable report made in the early part of the closing year by Dr. ARTHUR NEWSHOLME, principal medical officer of the Local Government Board, upon infant and child mortality, raised several extremely interesting issues which we noticed under the above title in THE LANCET of August 6th. The author of the report showed that infantile diarrhœa, which is such a potent factor in promotion of excessive infantile mortality, is brought about largely by strictly preventable conditions, and more particularly by those phases of defective sanitation which are connected with the conservancy system of excrement disposal, inefficient scavenging and unpaved yards. This appalling infantile mortality, which all of us deplore, can, he concludes, be most effectually diminished by efficient domestic and municipal sanitation and good housing, coupled with that very essential factor, intelligent and painstaking "mothering." Dr. NEWSHOLME appealed to certain counties wherein the infantile mortality-rate is still tremendous to awake to their responsibilities as, in the words of Sir JOHN SIMON, "the appointed guardians of masses of human beings whose lives are at stake in the business"; and he dwelt with emphasis

upon the necessity of removing the low stage of civilisation in which such a large section of the community in some of these counties live. Public health and preventive medicine are largely matters of social circumstances, and until some higher standard of excrement disposal is reached than obtains in some of our large northern towns, we agree with Dr. NEWSHOLME that, in a sense, the people must be regarded as living in a condition of "insanitary barbarism"—for such these conservancy methods must appear to those who have lived under the wholesomeness of a water-carriage system.

The Medical Inspection and Treatment of School Children.

We have dealt with this subject so often and so recently[1] in the pages of THE LANCET—both in the form of leading articles and of notices of many of the annual reports of school medical officers—that we shall not refer to it at any length at the present moment. The annual reports separately considered, and the recent report of Dr. GEORGE NEWMAN, the principal medical officer of the Board of Education, alike show the very encouraging progress which is being made both in inspection, in the sanitary condition of the schools and playgrounds, and in the treatment of the long roll of defects which is being unfolded. As regards this very difficult subject of treatment, it is clear that more and more advantage is being taken daily of existing agencies by the process now very generally adopted of following up the cases by the aid of all the agencies, medical and lay, which can be invoked towards this end. We learn from Dr. NEWMAN'S report that out of 314 educational areas in which school medical officers have been recognised the medical officer of health has been selected for the post in 230 cases, while in the remainder arrangements have in nearly all cases been made for proper coöperation between the officers in question. Another gratifying feature in relation to the future progress of both inspection and treatment is the cordial manner in which voluntary bodies are lending their aid. In this country we can do very little without the willing assistance of the public, and it speaks volumes for the tact displayed by the school medical officers and their assistants that the teachers are coöperating so willingly, and that the parents in increasing degree are entering into the spirit of this great social reform. The machinery in London for the medical inspection and treatment of school children does not yet work smoothly, and the metropolis lags behind.

The Neglect of Vaccination.

Difficult as it may be to believe in this, the land of JENNER, it seems probable that, given no great outbreak of small-pox, England will before many years are over consist of a practically unvaccinated community, a condition of things which cannot be contemplated without a feeling of the greatest anxiety. But even short of this prospective unprotected population we have now in reality an adult population which, in the absence of compulsory revaccination, is already very largely unprotected; while as regards the children no insignificant number of the nominally vaccinated are but very imperfectly protected against small-pox. One-mark vaccination is proceeding apace, and with it is decreasing the degree of our national security.

It is, we are aware, contended, and with a measure of truth, that our sanitary administration has now reached such a degree of efficiency that—with the notification of cases of small-pox and, in threatened periods, varicella too, and with our arrangements for vaccinating contacts, searching out unrecognised cases, and isolating such cases as occur—we have little to fear. But the recent experience of Bristol shows us the enormous difficulty of following up all the exposed persons, even with a well-equipped establishment. Thus we cannot but view with serious misgivings the behaviour of small-pox in the places where our sanitary organisation is little other than nominal, and where neither the medical officer of health nor sanitary inspector possesses much experience or special training in health matters. It is apparent from the numerous comments contained in the annual reports of medical officers of health that they are feeling considerable anxiety with regard to the future.

The Purification of River Water.

To those who procure their drinking water from deep wells and upland surfaces far removed from human habitations this subject has but little practical interest. But to the 6,000,000 people who dwell in and around the metropolis, and who drink the purified drainage of the Thames Valley, it is a matter of great comfort to find that the further researches of Dr. A. C. HOUSTON, the Director of Water Examinations at the Metropolitan Water Board, fully bear out his former conclusions as to the great value of water storage as a means of bringing about the destruction of pathogenic organisms prior to the river water being turned into the filters. This discovery concerns not only London but also certain other English towns, and it will be necessary to impress upon all river-drinking communities the necessity for the provision of adequate storage accommodation. Those of us who have followed the history of water-borne epidemics of enteric fever and cholera and the risks which attend filtration will still hesitate to advise the use of river water as potable, but it must be said that recent work with reference to the lethal point of pathogenic organisms, together with the experience of London during the last 30 years, are tending somewhat to modify current opinion on the subject of river water.

EXOTIC AND TROPICAL DISEASES.

The public interest in exotic and tropical diseases has shown no abatement during the past year, and it is an encouraging sign to find that a proposal has been made in the London press from an influential quarter that London's memorial to our late KING should take the form of a "King Edward VII. Tropical Research Fund," the interest from which should be devoted to carrying out and extending research work on tropical diseases. Among the public men who have expressed their approval of the proposal may be mentioned Lord NORTHCOTE, the Marquis of NORTHAMPTON, the Earl of ELGIN, the Earl of CREWE, Lord ROTHSCHILD, Lord KITCHENER, the Right Hon. JOSEPH CHAMBERLAIN, and Mr. RAMSAY MACDONALD, M.P.

The past year has been marked by a considerable extension and diffusion of exotic disease in various parts of the globe, and there are some indications that cholera and plague may in the coming year spread in certain portions of Europe and may even threaten our own land. Yellow fever, too, has displayed increased activity in those places where modern methods for controlling it have not been applied; and in these countries, if the next season be favourable, we may look for epidemics of some severity. As in former years, we give below a brief account of the occurrences throughout the world of these three principal exotic diseases, and so far as limits of space will allow, we add a few comments upon some of the other diseases which belong to the exotic or tropical class.

Cholera in Russia.

In 1910, for the fourth year in succession, cholera was epidemic in Russia, the outbreak proving the most serious that has occurred since 1892, when over 300,000 persons were attacked, and more than 150,000 of them died from the disease. Up to the end of November of the present year the number of cholera cases actually reported in the 11 months

[1] THE LANCET, Dec. 3rd, 1910.

amounted to nearly 216,000, and of these more than 100,000 proved fatal. By the beginning of December the epidemic in Russia had for the time being practically died out.

In 1910, as in the previous three years, St. Petersburg had its cholera epidemic. So far as can be ascertained, some 4500 persons were attacked, and of these about 1700 lost their lives. Cronstadt, Riga, and other ports in the Baltic were also invaded. Only a few imported cases were reported in Finland. Notwithstanding repeated importation of infection into Poland, there was no severe epidemic. It was, however, especially in Southern Russia, that the severity of the 1910 outbreak was experienced. Many of the grain ports along the shores of the Black Sea and the Sea of Azov were invaded, including Odessa, Theodosia, Kherson, Kieff, Kertch, Mariupol, Taganrog, Nicolaieff, Rostov-on-Don, Batoum, Poti, Novorossisk, and others. When the infection spread to the industrial districts in the South of Russia a panic followed, and thousands of the people fled from their infected towns and villages, carrying with them the germs of the disease and conveying them to other localities. The coal mines and the blast furnaces ceased to be worked, and many persons engaged in these and other industries were thrown out of work, adding greatly to the difficulties of the situation by the poverty and famine which resulted. The Russian Government, on the nomination of the Red Cross Society, despatched Professor G. REIN, Privy Councillor and President of the Medical Council, to the invaded provinces to direct measures for controlling the epidemic. With the advent of cooler weather the severity of the epidemic abated, and by December, as has been said, the disease had practically disappeared.

The Asiatic provinces of Russia were also affected by the cholera prevalence, which extended even as far as the Transbaikal Province, Eastern Siberia, and Vladivostock on the Sea of Japan. It is more than probable that the disease will reappear in Russia next summer. The sanitary condition of Russia is in many places deplorable, and affords favourable opportunities for the spread of cholera and other epidemic diseases.

Cholera in Europe, Outside Russia, and in North Africa.

Russia acted in 1910 as the chief diffusing centre of cholera for the rest of Europe. The infection was carried across the land frontier into Germany, groups of cases due to this importation of Russian infection being noted at Spandau and Ruhleben, near Berlin, at Marienburg and Kalthoff in West Prussia, and at Freiburg in Hanover, near the mouth of the Elbe, 50 miles below Hamburg. Cholera was also conveyed across the land frontier into Austro-Hungary, cases being reported in Austria at Vienna, Trieste, and Laibach; while in Hungary, Budapest and a number of the provinces were affected; altogether up to the middle of November over 400 cases had been notified. Groups of cases, too, were reported in Roumania, Servia, and Bulgaria. Cholera was also carried by ships to French, Italian, Swedish, Norwegian, Danish, and Dutch ports; and in the persons of Russian emigrants was taken across the Atlantic to American ports, both north and south. But in none of these instances, save one, did an epidemic result; this exception was Italy.

From a Russian port in the Black Sea cholera was carried by some gypsies on board a ship to the shores of the Adriatic, and not long after the landing of these passengers the disease became epidemic in the provinces of Bari and Foggia in the south-east of the Italian peninsula. Fugitives from these districts carried the infection to Naples and other places in the South of Italy, whence the disease spread to Sicily and Sardinia. The authorities seem to have been slow to admit the presence of the disease. In Naples, for example, for about a month cases of cholera were officially certified as gastro-enteritis. The Italian provinces invaded by cholera in 1910, besides Bari and Foggia, included Naples, Rome, Salerno, Avellino, Campobasso, Caserta, Caltanisetta, Lecce, Perugia, Sassari in Sardinia, and Palermo, Messina, Girgenti, and Trapani in Sicily, though in some of these provinces only a few cases occurred. Up to the end of November about 1600 cases and rather more than 800 deaths had been certified in Italy from cholera. This probably is an under-stating of the amount. The whole of the northern portion of the kingdom remained free, except for the occurrence of one or two ship-borne cases at the port of Genoa. The sanitary circumstances of some parts of Southern Italy are generally unsatisfactory, and cholera, if introduced, finds little difficulty in spreading. It is feared that a recrudescence of the disease may occur in the coming year as soon as the weather conditions become more favourable for its spread.

From Naples cholera was carried to Tripoli in Barbary, North Africa, where a considerable epidemic occurred during October and November. From Tripoli the disease was conveyed into Tunisia, cases occurring on the island of Jerba, off the coast. Towards the end of November the appearance of cholera in Madeira at Funchal, the capital of the island, was officially declared, some 650 cases having been notified in about three weeks. How cholera reached Madeira has not yet been ascertained, but it appears that at the end of October an illness was prevalent to which the Portuguese medical officer of health gave the name of "*gastro-enterite in facto contagioso*," and this was thought by some to be a form of enteric fever. By request a bacteriological expert was sent out by the Portuguese Government from Lisbon, with the result that cholera was diagnosed.

Cholera in Turkey and Persia.

From the Russian provinces south of the Caucasus cholera was carried across the frontier into Turkish territory, invading the vilayets of Van and Erzeroum during July, and appearing later in the vilayet of Mamouret-ul-Aziz. Coming westwards, cholera reached Trebizond in September, causing a considerable epidemic, some 650 persons being attacked up to the middle of December. The port of Zungulduk, on the Black Sea, was also invaded, and later the infection spread along the shores of the Bosphorus, different districts of Pera, Galata, and Stamboul becoming involved. Ultimately the country in and around Constantinople was infected, and during October cholera became epidemic among the garrison as well as among the civil population. Troops returning by sea from the autumn manœuvres were attacked upon the transports and the sufferers were landed at Touzla, in the Gulf of Ismidt, where up to Oct. 30th 250 cases had been treated in the lazaret. Other outbreaks were reported at Samsoun, Tizirk, Beirût, Bigha, Rhodes, Salonica, Adrianople, Eregli, Rodosto, Philippolis, and Charchamba.

In October cholera was prevalent in Basra and Bagdad, as well as in the districts of Mesopotamia. There was a cholera epidemic at Muscat, in the sultanate of Oman, during September. In August cholera appeared in Persia, having been conveyed across the Caspian Sea from Baku and other Russian ports. Epidemics were subsequently reported at Ardebil, Enzeli, Sorab, Kermenshah, Badjguiran, Resht, Turbat, Haidari, Hamadan, and other places. A few cases also came under observation in November at Mohammerah, a Persian port at the head of the Gulf.

There has been a smart epidemic of cholera in Funchal and other parts of Madeira, which has taxed the resources of the resident authorities and medical men.

Cholera in India and the Far East.

Cholera, as in most years, was prevalent during 1910 in a number of the provinces of India, more particularly in the Presidency of Bengal, the United Provinces of Agra and

Oudh, and in Eastern Bengal and Assam. A sharp local outbreak occurred in June in Kashmir, where the infection extended from the native population to the military, including among its victims at least three British officers belonging to the garrison. Only a few cases appeared in Ceylon at Colombo; in two instances the infection was ship-borne.

In the Straits Settlements a small epidemic was noted at Singapore, and some cases also were reported in Province Wellesley. At Bangkok, the capital of Siam, cholera was prevalent from May to August, carrying off more than 700 victims. In French Indo-China cholera appeared in Annam, Cambodge, and in Cochin-China; while in Tongking a somewhat severe outbreak caused not far short of 6000 cases to come under official observation. In the Dutch East Indies cholera was epidemic at Batavia in the island of Java, where about 1200 cases were notified; and also at Samarang, where some 3350 persons were attacked between February and August and more than 2800 died; in Sourabaya, also in Java, and its immediate neighbourhood some 1260 cases were notified between February and October. At Palembang, in the island of Sumatra, cholera was prevalent during the year; and in West Borneo cases were reported at Pamangkiet. During most of 1910 cholera was present in the Philippine Islands, assuming a more virulent character during the summer months both in Manila and in the provinces.

In the Chinese Empire cholera is known to have appeared in the city of Swatow and its vicinity, causing over 3000 deaths; at Amoy, Fatshan, Hankow, and Pakhoi other outbreaks occurred, and some cases were also notified at Hong-Kong. In Japan the disease was prevalent on the island of Awaji, and also at Kobe, Osaka, Kyoto, Moji, Nagasaki, Yokohama, Fukuoka, as well as in other places. There was also an outbreak at Keelung, Taihoku, in the island of Formosa. In Manchuria the occurrence of cholera was certified at Newchwang, Dalny, Inkou, and Mukden. It is reported that some cases of cholera were landed from a steamer at the port of Chinampo in Korea.

Plague in India.

It is disappointing to find that in 1910 there was an increase in the number of fatal cases of plague recorded in India, as compared with the two previous years. In round numbers the deaths from this disease in 1908 and 1909 were respectively 150,000 and 175,000; but for the 10½ months to mid-November in 1910 the number had risen to more than 400,000. The provinces which suffered most in the present year were those which had the same misfortune in the two previous years—viz., the Punjab with 150,000 deaths in 1910, and the United Provinces of Agra and Oudh with 120,000. The next provinces which suffered much in point of plague mortality were Bengal, 34,000 deaths; and the Presidency of Bombay, 27,000.

The Advisory Committee for Plague Investigation in India, of which Surgeon-General A. M. BRANFOOT, I.M.S., C.I.E., is chairman, published in November a further series of reports in a special number of the *Journal of Hygiene*. These reports, among other matters, dealt with "the experimental production of plague epidemics among animals." A short interim report is also given by the Advisory Committee, embodying the chief conclusions which it has provisionally reached as a result of the investigations conducted in India from 1904 to 1909, relating specially to the mode of spread of plague.

Plague in the Far East.

In the Straits Settlements in April and May a few plague cases were notified in Singapore. At Bangkok, the capital of Siam, some cases also continued to come under observation during the year, though in no great numbers; altogether about 120 deaths were recorded from this cause. There was also an outbreak at Phrapatom, some 30 miles from Bangkok. In French Indo-China plague was epidemic at Pnom-Penh and other places in Cambodge; at Saigon and Cholen in Cochin-China, and at Choquan in Tonkin. A somewhat severe outbreak occurred in Quang-Tchiou-Wan, where in the first half of 1910 some 1400 cases came under official notice.

In China plague was heard of during the year at Amoy, Canton, Hong-Kong, Hankow, Swatow, Kulangsu, Hoihow, Liutschu, Ching-Chew, and in the districts of Chang-poo and Chao Yang, in the latter of which more than 3000 fatal cases were recorded in the first four months of the year. In Pakhoi a severe epidemic occurred in the summer and caused a third of the population to flee in panic from the city. At Shanghai in December some cases were notified, and when attempts were made to enforce preventive measures riots resulted. A number of plague cases occurred in Manchuria during the autumn, the infection being attributed to the hunting and handling of a species of marmot (tarabagan) which abounds in that region and which is said to suffer from plague.

In Japan localised outbreaks were observed at Kobe and Osaka, and also in the island of Shikuko. An imported case on board a ship from Hong-Kong was discovered at Yokohama. In the island of Formosa during the first half of the year only 19 cases were notified, a very considerable diminution of the amount reported in previous years.

Plague in Oceania.

For the first time during the last ten years no human cases of plague were reported in New South Wales, though a few infected rats were discovered in Sydney during April. It is interesting to mention that it is proposed to establish in the University of Sydney a prize in pathology in memory of the late Dr. T. C. PARKINSON, who died last year from plague in England while engaged in research work on that disease at the Elstree laboratory of the Lister Institute. No plague in man or rat was detected in Queensland or in Western Australia, but a single fatal case of suspected plague was reported on board a sailing vessel which arrived at Port Adelaide in South Australia in March.

In New Zealand a single case was notified at Auckland. An outbreak of plague was reported in the north of the island of New Caledonia during September among the natives. Only scattered cases occurred in the Hawaiian Islands, some cases being landed in June at Honolulu from a Japanese vessel from Kobe, on which rat infection is said to have been present. A few other cases occurred on shore in the following month, but there was no epidemic. Small groups of cases were also observed at Hilo and Honokaa, where an epizootic in rats was reported. Plague-infected rodents were found at Aiea and Puhuona, where, however, no human cases occurred.

Plague in America.

Plague was widely diffused throughout South America during 1910. Reports from Argentina are somewhat scanty, but it is beyond doubt that cases of plague occurred at Rosario in February and in Tucuman in the spring months. In Brazil localised outbreaks were reported from Rio de Janeiro, Bahia, Para, and Pernambuco. A number of towns and districts in Chili suffered from invasion of plague during the year, including Iquique, Taltal, Antofagasta, Santiago, Pisagua, and Mejillones. In Peru the disease was widespread, affecting many towns and departments, among which may be mentioned Arequipa, Mollendo, Cajamara, Callao, Lima, Lambayeque, Pacasmayo, Libertad, Pisco, and Piura. A somewhat severe epidemic, attaining its height in October, was experienced by Guayaquil, the capital of Ecuador, in which State also outbreaks were noted at

Babahoyo, Duran, Rocafuerte, and Milagro. Plague appeared at Caracas in Venezuela in July, and cases also occurred at Puerto Cabello. A few attacks of plague were notified in July at Port of Spain, the chief city and port of the island of Trinidad.

Only two cases of human plague were reported in the United States during 1910, both of them from the State of California, one occurring in June at San Benito, and the other in September at Santa Clara. There was, in addition, a widespread incidence of plague among ground squirrels in California, infected animals being found in the counties of Almeda, Contra Costa, Merced, Monterry, San Benito, San Joaquin, San Louis Obispo, Santa Clara, Santa Cruz, and Stanislaus. A single plague-infected rat was found at Seattle in the State of Washington, the last reported human case there dating back to 1907.

Plague in Africa.

The disease was again epidemic in Egypt during 1910, and in rather greater amount than in the previous year; up to the middle of November close upon 1100 cases had come under observation. Scattered cases occurred in Alexandria, Port Said, Damietta, and Ismailia. Thirteen Egyptian provinces were affected, and of these the chief sufferers were Assiout, Keneh, Menoufieh, and Fayoum. Some ships from India and the Far East landed occasional cases of plague at the Suez quarantine station before entering the canal, but the town of Suez remained free from plague during the year.

In German East Africa plague was notified in September at Lindi, where also rats and mice were found infected. At Zanzibar in the same month a few cases were reported, but no infection of rats was discovered, though many animals were carefully examined. Plague became epidemic in Mauritius in September and continued to prevail to the end of the year. Previous to this a few cases had appeared in each month, but only in small groups. To Port Louis, the capital of the island, a considerable number of the attacks were referred. Rats, mice, and musk rats were also affected, both in Port Louis and in the provinces. In Tunis during June several cases of plague were reported, and in September in Morocco a group of attacks was notified among the French troops at Busneco, which lies between Rabat and Casablanca.

Plague in Europe and the Near East.

An outbreak of plague began in Odessa in June and continued until November, about 140 cases being notified in that period, 42 of them terminating fatally. No mention is made in local reports of a coincident epizootic among rats, but notwithstanding this very stringent measures were enforced for rat destruction. In the government of Astrakhan from January to March plague was present in the Kirghiz Steppes in four settlements, and also in the Marmsk and Kalmuk camps. Another outbreak was reported in November in the same locality. The disease was also noted in Turkistan in July and August in the district of Prjevals. An outbreak occurred, too, in the Oural province in Djambeitine during August.

In England two cases were notified in the Port of London, both belonging to steamers lying in dock, and which had previously arrived from Bombay. One of these cases fell ill the day before his ship left London for Bombay and prior to the nature of the illness being diagnosed. Before this ship reached Marseilles three other cases occurred on board, two dying on the way; the third case, along with three more which developed on the following day, while the ship was being disinfected, were landed at the lazaret on the island of Frioul. From Marseilles to Port Said the ship was free, apparently, from infection; but before she reached Aden three fresh cases had come to light and were taken ashore to the port hospital. Finally, a further case was reported between Aden and Bombay. All the cases belonged to the native crew, mostly engaged in the kitchen of the ship, and although there were 330 passengers on board all remained free from plague. Three plague-infected rats were found in a London dock during the autumn. Some suspicious cases associated with rat-infection occurred in Suffolk, an account of which is given in another part of the Annus Medicus.

Early in November some plague cases were discovered in Lisbon in the Alfama quarter, the two first victims being lads employed in boiler cleaning on ships arriving from foreign ports. It is alleged that the infection was acquired while working on board a vessel which had recently come from East Africa. Altogether nine cases were notified and five of them proved fatal. There is no mention of infection among the local rats. A single case landed from a vessel coming from India was reported at Malta in July.

Sporadic cases occurred during the year in Beirût and Adalia, and also at a village 20 miles from Rhodes. Plague was again epidemic early in the year at Jeddah, the chief port of the Hedjaz, over 100 cases being certified. Among the fatal cases we regret to find the name of Dr. CESARE ZONCHELLO, the acting medical officer at Jeddah under the International Sanitary Council. Plague infection among rats was also present in Jeddah during the first months of the year. Further south of Jeddah along the coast plague was epidemic at Loheia and Hodeidah during April and May. On the island of Perim three cases were landed from a Bombay steamer in the month of May. At Basra, during April, June, and August, plague cases were reported and there was evidence of coincident infection of rats. In the early part of the year plague cases were met with in Bagdad, the expiring remains, apparently, of the epidemic of 1909. Bushire, on the eastern shores of the Persian Gulf, was the scene of a sharp plague outbreak during which 60 cases were notified.

Yellow Fever in South and Central America.

The north of Brazil remains a hotbed of yellow fever, although in the south and central parts of that Republic the disease, as a result of modern measures, has practically disappeared. But in the north Para, Pernambuco, and Manaos still foster the disease. It was at Manaos that the Amazon Yellow Fever Expedition, sent out by the Liverpool School of Tropical Medicine, established its headquarters under Dr. H. WOLFERSTAN THOMAS, upon whose interim report we commented in THE LANCET of July 30th of this year. More than 120 deaths from yellow fever were reported in 1910 at Manaos, while in Para nearly 300 fatal cases were certified in the first nine months of the year. Smaller outbreaks occurred in Pernambuco and Bahia.

In Nicaragua, at Managua, and in Venezuela at La Guaira, Puerto Cabello, Valencia, and Caracas yellow fever was reported. There was a sharp epidemic in Ecuador at Guayaquil, where about 260 cases and 100 deaths were recorded up to November; minor outbreaks in the same State were reported at Babahoyo and Duran. In Costa Rica the disease appeared in a number of places, including Limon, San Jose, Siquires, and Milagro. The occurrence of yellow fever in Santo Domingo, at Puerto Plata, Santiago, and La Vegu was certified in September; and it is noteworthy that most of those who fell victims to the disease were newcomers to the island. In April a few cases were notified to the authorities in Trinidad at Port of Spain.

Owing to the strict measures which are carried out in the Panama Canal zone, where formerly yellow fever was rife, and notwithstanding two separate shipborne importations of infected persons, no subsequent cases were observed. In Mexico during the autumn months several cases of yellow fever were reported at Campeche.

Dr. HARALD SEIDELIN, formerly Professor of Pathology

and Bacteriology at the Medical School, Merida, Yucatan, Mexico, continues to maintain his belief that he has discovered the micro-organism of yellow fever in certain protozoon-like bodies which he found in the blood of many of his patients stricken with the disease, but so far as we are aware his discovery has not been confirmed by any other observer.

Yellow Fever in West Africa.

In May, 1910, cases of yellow fever were notified at Koora, near Dakar, in the French colony of Senegal. In the same month some alarm in this country was caused by the announcement that the disease had appeared at Sekondi, and later at Axim in the Gold Coast Colony, also at Freetown, in Sierre Leone, some 19 fatal cases being reported. When it was known that yellow fever had broken out in West Africa Sir RUBERT BOYCE, F.R.S., at once offered his services to the Colonial Office, who accepted them, and with some six other medical men he left England in June to investigate and advise upon the outbreak. Fortunately, the epidemic did not assume very alarming proportions, and by the end of September cases had ceased to occur.

As a result of his own observations and of his study of the previous sickness and mortality statistics of a number of places in West Africa Sir RUBERT BOYCE came to the conclusion that yellow fever was endemic in that region, and that for a long series of years cases of the disease have been occurring, but which have been recorded under some other designation. He embodied his views in a paper which he read in November at the meeting of the Society of Tropical Medicine in London. There have, he thinks, been no fresh importations of infection from time to time, but that the reservoir of the disease has been present in the native population, who suffer mostly in childhood from a mild form of the disease. It is only when newcomers are attacked in a virulent form that the classical symptoms of yellow fever described in books are noted and the disease is diagnosed. The same views were advanced in reference to Martinique by the three military surgeons who investigated the matter there—viz., Dr. P. L. SIMOND, Dr. L. AUBERT, and Dr. F. NOC—whose report was published in the *Annales de l'Institut Pasteur*, and on which we commented in THE LANCET of March 26th.

Sir RUBERT BOYCE'S conclusions are, shortly, that yellow fever is endemic and common in West Africa, and that it has occurred in all its various forms, from the "embarras gastrique" to black vomit. He holds there is but one remedy, and that is destruction of the stegomyia which abounds in all the colonies in question.

Yellow Fever on Board Ships.

During the past year yellow fever has appeared on board a number of ships which have left infected ports. The following are a few examples which show that there is a possibility of the disease being conveyed from North Brazil to European ports.

1. The ss. *Rugia*, from Manaos and Para, arrived at Lisbon on April 3rd, and the master reported to the authorities that eight cases of yellow fever had occurred on board the vessel since leaving Manaos, four of them proving fatal. The four surviving patients were landed at the port lazaretto where they recovered. There was no subsequent extension of the infection. 2. The ss. *Augustine*, also from Manaos and Para, reached Liverpool in October, and the captain notified the port officers that six cases of yellow fever had been diagnosed on the voyage, and that two of them had died and been buried at sea; two had recovered before the ship reached England, and the remaining two were landed at the Liverpool port isolation hospital, where they recovered. 3. The ss. *Lanfranc*, which sailed, like the previous two ships, from Manaos and Para, arrived at Liverpool in August, and the master reported the death of one of the crew from suspected yellow fever on the voyage not long after leaving the coast of Brazil. The corpse had been buried at sea. 4. The ss. *Lanfranc* in a subsequent homeward voyage from Manaos and Para reached Liverpool in October, and reported that a member of the crew had died, with symptoms highly suggestive of yellow fever, on the voyage, and that his body had been committed to the deep; there were no subsequent cases.

Small-pox Abroad.

In Europe the chief country which suffered in 1910 from epidemic small-pox was Russia, more especially St. Petersburg, where more than 2000 cases occurred; Odessa, with over 550 cases; Riga, with close on 450 cases; and Warsaw, with more than 1100 cases. In Moscow 256 deaths from small-pox were certified up to November. Germany suffered from repeated importations of the infection and, notwithstanding her excellent vaccination arrangements, about 220 cases came under observation, many of the sufferers being foreigners, especially Russians and Italians. The information from Italy is not up to date, but during the first four months of the year nearly 1600 cases were notified. Spain also suffered from small-pox in 1910, epidemics occurring in several of her cities, including Barcelona and Madrid. In Portugal there was an outbreak at Lisbon, where not far short of 1000 cases were reported. The accounts from France are meagre, but it is known that in Paris over 200 attacks were certified. Smaller occurrences of small-pox were observed in Austria, Holland, Belgium, Greece, Malta, and Turkey.

Small-pox was present in Egypt most of the year, some 2700 cases being officially reported. Outbreaks, too, were notified in Algeria, Tripoli, Abyssinia, and at Zanzibar. The disease was epidemic in a number of localities in Persia, including Teheran. As usual, some Indian cities and provinces suffered from small-pox in 1910. In Bombay City somewhere about 1150 cases came under notice. The yearly epidemics in Bombay are associated with the return of the Indian pilgrims from the Hedjaz where the infection is contracted. Calcutta also suffered, but to a far smaller extent; there was also an outbreak at the port of Rangoon. In Ceylon, Siam, the Straits Settlements, French Indo China, the Dutch East Indies, the Philippines, China, Japan, and Korea small-pox manifested itself in varying amount during 1910.

In the Western Hemisphere the disease was epidemic in certain towns and districts in South America, more particularly in Brazil, Argentina, Uruguay, Chili, and Mexico. In the United States small-pox was epidemic, over 24,000 cases being notified, in a number of the States, including North Carolina, Kansas, Texas, Michigan, Oklahoma, and Utah, but the type was comparatively mild. In Canada small-pox appeared during the year in British Columbia, Manitoba, Ontario, and Nova Scotia.

Malta Fever.

A new commission has been appointed by the British Government to investigate the manner in which goats become infected by Malta fever. The evidence incriminating goat's milk as the means by which this disease is spread is accumulating. Epidemics have been reported in the past year in places where goats afford the main supply of milk. Outbreaks occurred in Algeria, Italy, Spain, in South Germany, and in parts of France; in the latter country the disease was observed in the departments of Var, Bouches du Rhône, Hérault, and Gard. The French Government has been urged to take measures for controlling the sale of Maltese goats, and the Academy of Medicine, at the instigation of Professor F. WIDAL, recently passed a resolution pressing local sanitary authorities to make the notification of Malta fever compulsory. It is said that at the present time 12 per cent. of the goats at Port Said, when tested by the agglutination

method, gave positive results with the M. melitensis. The BEY of Tunis, as a result of the researches of Dr. C. NICOLLE, has issued a decree forbidding the importation of Maltese goats.

Another of the continued fevers of Malta has now been investigated—namely, that known formerly as the "three days' fever," and now called phlebotomus fever. From researches made by Lieutenant-Colonel C. BIRT, R.A.M.C., it appears that the infection is transmitted to man by a species of sand fly, Phlebotomus papatasii, but the specific organism has not yet been discovered. It is believed to be ultra-microscopic, and therefore unrecognisable by our present methods.

Malaria.

Professor RONALD ROSS has published a "colossal" work on the Prevention of Malaria, with the help of a number of collaborators of repute. This work constitutes, perhaps, one of the most comprehensive treatises on the subject that have as yet been written. A new periodical devoted to malaria and called *Paludism* has been established in India, with Major S. P. JAMES as its editor. A commission has inquired into, and reported upon, the Mian Mir (Punjab) anti-malaria experiment, but we gather that there are some who do not yet regard this vexed question as being settled by the report.

Pellagra.

An influential committee was formed in London with a view to the investigation of the etiology of pellagra, and under their direction Dr. L. W. SAMBON proceeded to certain affected districts in Italy to study the disease in the spring and summer months of the year. This expert has since reported that the maize theory is untenable, and that in his opinion the disease is transmitted by a species of sandfly, the distribution of which coincides with the areas in which pellagra is endemic. The investigation is as yet incomplete, but hopes are expressed that funds will be forthcoming to enable Dr. SAMBON to be again despatched to Italy and other countries where the disease is prevalent so that his inquiries may be completed. In the United States of America a similar investigation is being undertaken, and already in Egypt an inquiry has been begun by the staff of the Egyptian Health Department at the instance of Dr. W. P. S. GRAHAM, the Director-General.

Leprosy.

Considerable advance has been made during the year in our knowledge of this disease, and success, we understand, has at last attended the efforts of certain scientists to cultivate the bacillus of leprosy outside the human body. Two experts—Dr. C. DUVAL in America and Dr. F. TWORT of the Brown Institute in this country—have, each independently of the other, discovered almost simultaneously a method of cultivating the B. lepræ on an artificial medium. This discovery may have far-reaching results in the direction of finding a curative treatment of a more reliable kind than any that have yet been put forward for leprosy.

Sleeping Sickness.

The advances in our knowledge of sleeping sickness were summed up in a paper read before the Society of Tropical Medicine in London recently by Dr. A. G. BAGSHAWE, the director of the Sleeping Sickness Bureau. There appear now to be grounds for believing that in Rhodesia the T. gambiense may be transmitted by some other species of tsetse fly than the G. palpalis, and a new human trypanosome has been discovered in the blood of a patient who contracted the disease in North-Eastern Rhodesia. The existence of a regular periodical increase of the parasites in a case of sleeping sickness has been discovered by Major R. ROSS and Dr. DAVID THOMSON.

FORENSIC MEDICINE.

The year 1910 has not been distinguished by any legislative enactment of marked importance to the medical profession; but the Housing and Town Planning Act, 1909, which received the Royal Assent early in December of that year, may be said to have come into force during the one now about to close. That Act had, as a feature of medical interest, the compulsory appointment of county medical officers of health by all county councils, under conditions already dealt with in these columns in the department of public health. The legal decisions of the past year, also, cannot be said to have affected the medical profession, or to have been of interest to its members in many or in conspicuous instances. The Workmen's Compensation Act has not provided any very considerable novelty in the way of extension of the meaning of the word "accident," such as those which have before attracted our attention. An interesting dispute, however, took place in a claim under this Act in one county court with regard to the medical examination of the workman at the request of the employer. It was contended that the medical man selected to make the examination, on account of methods adopted by him in past instances for the detection of malingering, and alleged to be unfair to the workman, must make his examination in the office, or at any rate in the presence of the claimant's solicitor. The impossibility of rendering such an examination effective under the conditions thus sought to be imposed was demonstrated by the medical practitioner against whom personally the protest was raised, and it was decided that the objection put forward was unfounded.

One of the most important criminal trials of recent years involving medical evidence was that of HARVEY HAWLEY CRIPPEN for the murder of his wife, known as BELLE ELMORE. The identifying of the human remains found under a floor of the house where the prisoner and the deceased had lived; the approximate fixing of the date of the crime; the connecting of the presence of the remains with the act of the prisoner by the discovery of certain clothing; and the establishing of the cause of death as being due to the use of a drug not commonly employed, but purchased by the prisoner in a large quantity, were all achieved solely by the skill and science of the experts employed by the Crown to elucidate a mystery which had attracted the public attention to an uncommon degree. The hanging of a very brutal and cold-blooded murderer, who during his life had practised extensively as a quack in medicine and dentistry, was due to incontrovertible medical testimony, which reinforced and supported the voluntary inquiries made by the deceased woman's friends and the efforts of the police in bringing an atrocious criminal to justice.

APPEALS AND ACTIONS IN THE HIGH COURTS.

The Liability of a Sanitary Authority and of Sellers of Unsound Meat (Hobbs v. The Winchester Corporation, 1910, 2 K.B. 471).—The Court of Appeal reversed a decision of Mr. Justice CHANNELL and established a principle of considerable importance to medical officers of health and sanitary authorities. A butcher at Winchester furnished meat to the barracks under conditions not here material, but which were alleged to have been infringed. To some of the meat supplied under the contract referred to the attention of the medical officer of health was drawn, who seized it and obtained a magistrate's order for its destruction, after which a prosecution was instituted against the butcher, which failed. The butcher then took proceedings under Section 308 of the Public Health Act, 1875, to have the damage which he had sustained through the dismissed prosecution assessed by an arbitrator. Section 308 provides for such compensation "where any person sustains any damage by reason of the

exercise of any of the powers of this Act in relation to any matter as to which he is not himself in default." The arbitrator found as facts that the butcher did not know when the meat was delivered that any part of it was unfit for food, that his servants did not know it, and that neither he nor they could have discovered its condition by any examination which he or they could reasonably have been expected to make, and that he was therefore not himself in default. He awarded as damages upon this part of the claim made before him £118, costs incurred in defending the case before the magistrates, and £300 for general damage to the claimant's business. A question as to how far the seizure of the meat or the prosecution constituted the "exercise of powers" contemplated by the section was argued before Mr. Justice CHANNELL, who in the end upheld the arbitrator's decision and confirmed his award of damages against the corporation, the prosecutors. The Court of Appeal reversed the decision of Mr. Justice CHANNELL on this point, holding that a butcher in the circumstances described sold unsound meat at his peril, and that therefore the sale of such meat was "a matter as to which he was himself in default" within section 308, whether he knew, or had reason to know, it was unsound or not. The *mens rea* was not necessary to constitute an offence.

The Variation of Charitable Bequests.—In the Court of Appeal an important decision was given in connexion with the carrying out the will of Mr. BENJAMIN WEIR. The deceased left two houses and a large sum of money upon trust for the establishment of a dispensary, cottage hospital, convalescent home, or other medical charity for the benefit of the inhabitants of Streatham and its neighbourhood. The trustees obtained an order from the Charity Commissioners sanctioning a scheme whereby a large portion of the money was to be applied to enlarging and maintaining the Bolingbroke Hospital, Battersea. The corporation of Wandsworth objected to this on the ground that it did not carry out the clearly expressed wish of the testator to benefit Streatham by a hospital within its boundaries to be named the Weir Hospital. In the Chancery Division Mr. Justice EVE refused to interfere with the order of the Charity Commissioners, but the Court of Appeal reversed this decision, holding that the trustees were bound by the terms of the will and had no right to say that the hospital proposed would be of no use, and that there was no evidence that it could not be established as directed by the testator upon such a scale that the whole of the money could properly be spent upon it. Their first duty was to carry out the wishes of the testator, provided that they were not contrary to public policy or impossible of fulfilment. If they had gone wrong in a matter of detail only the Court would not have interfered, but it was a question of principle, and it was the duty of the Court to intervene because the rules of law governing such matters had not been complied with.

Workmen's Compensation Act, 1906 (*Nisbet* v. *Rayne and Burn, 1910, 2 K.B. 689*): *Murder an Accident.*—It was held by the Court of Appeal in the case of a cashier of a colliery company, travelling, as it was his duty to do, periodically with a bag of money for the payment of the workmen employed by the company, that his murder, for the sake of robbery, was an accident within the meaning of the Act. It was an accident from the standpoint of the widow who claimed compensation, and it arose out of an employment which involved more than ordinary risk. The accident in such a case was an untoward and unforeseen event producing personal harm, and it was held not to be necessary in interpreting the word to exclude such occurrences as are not accidental in the popular sense, and to include those only in which there is a negation of wilfulness or intention.

The Form of a Medical Referee's Certificate under the Workmen's Compensation Act, 1906, after Appeal from a Certifying Surgeon.—On appeal in the case of Jones *v.* the Ebbw Vale Steel, Iron, and Coal Company, Limited, the Court of Appeal pointed out that on appeal against the certificate of a certifying surgeon of the disablement of a workman the medical referee must follow the prescribed form—that is to say, he must dismiss or allow the appeal, thus giving a decision only as to whether the certifying surgeon was right or wrong at the time when he dealt with the case. The medical referee in these circumstances is not concerned with the more recent aspects of the disability dealt with. The court recommended reconsideration of a regulation the objections to which are evident.

"*Dr.*" *Bodie.*—The Court of Appeal dismissed the appeal of the person known as "Dr." Bodie, made on the ground that the judge had misdirected the jury, that the verdict was against the weight of evidence, and that the damages were excessive. The Master of the Rolls observed "that he had never read a summing-up more clear, more directly addressed to the real points, and more free from objection on every possible ground that than of Mr. Justice DARLING. ..... The plaintiff's allegation was proved up to the hilt."

A Case under the Medicines Stamp Act (*Kirkby* v. *Taylor, 1910, 1 K.B. 529*).—The Medicines Stamp Act, 1812, contains an exemption with regard to the affixing of a stamp, involving the payment of a duty, upon medical preparations defined in the Act, in the case of such preparations when sold by a surgeon, apothecary, or druggist, "who hath served a regular apprenticeship." A druggist who had sold a bottle of "blood purifier" unstamped was summoned before magistrates, who held that he was not liable, because he had served the apprenticeship specified in the Act, the alleged apprenticeship having admittedly been served under an oral agreement only, and not under a written one. The Divisional Court held that the apprenticeship must be under a contract in writing, and remitted the case to the magistrates to convict.

Unqualified Practice of Dentistry: a Conviction Set Aside.—In the King's Bench Division, Dublin, the conviction was set aside of an unqualified person practising dentistry, who had been found by a magistrate to have taken and used the title or description "dentist," implying that he was specially qualified to practise dentistry and was registered. The charge also stated that he did take and use the title, addition, or description, "Mr. BYRNE, the expert adapter of teeth; extractions by my own special system, painless and bloodless." The court set aside the conviction on the ground that the defendant had so worded his advertisements that they did not go far enough to come within the Dentists Acts, or, in the words of one of the judges deciding the case, that he had only held out to the public that he was acting from the experience of his own skill, and not indicating any special qualification.

The Case of an Infant Mentally Defective.—In the Chancery Division Mr. Justice SWINFEN EADY was occupied for six days in hearing the claim of a young man, named DOUGLAS GORDON MACRAE, suing, through his committee, his stepmother, Mrs. HARNESS. This lady had been left a widow by the death of her husband, Mr. MACRAE, when her stepson, the plaintiff, was 15 years of age, and was showing symptoms of mental incapacity. She had an ample income from her husband's estate, and was allowed by trustees the sum of £3000 a year for the education and maintenance of the boy and his young sister. At first the former was placed in a house at Eastbourne, under the care of a medical man, Mr. H. N. HARNESS, expenditure being made upon him at the rate of £1200 a year. Afterwards Mrs. MACRAE married Mr. HARNESS, and the boy was placed in a home, where

six guineas a week were paid for his board, lodging, medical attendance, and for a private attendant to sleep in his room. A dispute took place as to extra fees for nurses during a period when these were required, and after this the lad was placed in the house of a medical man, an arrangement being made for an inclusive charge of 6 guineas per week and not more than £1 for amusements. A subsequent change brought the patient to the house of another medical man, where terms upon a like scale, with accommodation and treatment deemed to be unsuitable by the Master in Lunacy, led to the intervention of the Commissioners in Lunacy and to a claim against Mrs. HARNESS for an account of the sums paid to her for the maintenance and education of her stepson and her stepdaughter. D. G. MACRAE, now of age, is maintained under a scheme sanctioned by the Master in Lunacy at a cost of £1700 a year. Mr. Justice SWINFEN EADY granted a declaration that he had not been maintained in a reasonable and proper manner, having regard to his position and means, and that the defendant was liable to account for the money (£18,847) paid to her by the trustees of her late husband's will up to the time when the plaintiff came of age, proper deduction being made for money expended on the maintenance and education of him and his sister.

Action in respect of a Death ascribed to Ferro-silicon.—The widow of the owner of a canal boat was awarded damages in the High Court in respect of the death of her husband, a man named BAMFIELD, who had died, and whose death had been ascribed at the inquest held upon his body to ptomaine poisoning. Evidence was given at the trial that the cargo delivered to the deceased to carry on board his barge by the Goole and Sheffield Transport Company was described to him as scrap or general cargo, but that, in fact, it consisted of ferro-silicon in casks, and that the fumes escaping caused the death of the deceased. It was found that the cargo was dangerous, that BAMFIELD did not know its dangerous character, and that the plaintiff had proved her case and was entitled to £150 in respect of illness suffered by her and £175 for the loss of her husband.

THE COUNTY COURTS.

The Sale of Poisons under the Pharmacy Act, 1868–1908.—The Pharmaceutical Society sued WILLIAM NASH in the Kingston county court for a penalty under Section 15 of the Pharmacy Act, 1868, for selling poisons, he not being a registered pharmaceutical chemist or chemist and druggist. JAMES NASH, father of the defendant, held a licence under Section 2 of the Pharmacy Act, 1908, for the sale of poisonous compounds used in agriculture or horticulture, and WILLIAM NASH, who acted as assistant to his father in his shop, claimed to be entitled under this licence to sell for him the weed-killer which constituted the subject of the proceedings. His honour Judge HARINGTON reviewed the authorities in a considered judgment, and held that the sale of poisons under Section 2 of the Act of 1908 must be by the person holding the licence only, and gave judgment for the society for the amount claimed.

Damages against Hygienic Institutes.—Damages, amounting to £100 in each case, were recovered on the same day by two different plaintiffs, against the "London Hygienic Institute, Limited," and another "Hygienic Institute" having its address in Glasgow. In both instances large numbers of teeth had been extracted by unqualified operators at the "Institutes," with the result that the patients endured considerable suffering and injury to health. In the London case the plaintiff, a woman, had been confined to her bed for three weeks with a medical man in attendance. In the case at Glasgow the injuries inflicted included a broken jaw.

Damages against a Prescribing Druggist.—In an action brought in the Newport county court £10 damages were awarded against a druggist who treated the plaintiff for some time for an injured finger, with the result that it became septic, and the plaintiff in consequence lost his employment.

CASES UNDER THE WORKMEN'S COMPENSATION ACT, 1906.

The Medical Examination of a Workman on Behalf of the Employer.—An important point was raised in the Westminster county court, under the Workmen's Compensation Act, 1906. A workman had refused to submit himself to a medical examination when requested to do so by his employers, in a case in which the medical examiner appointed was Dr. R. J. COLLIE, and in which the workman's solicitors made it a condition of the examination that if it were made by the gentleman named it should take place in their office and in the presence of a member of their firm. It was alleged that Dr. COLLIE'S methods were unfair to the workman on the one hand, and on the other it was contended they were nothing of the kind, but were directed to ascertaining the truth, and that the examination could not be made properly so as to ascertain the truth with regard to the workman's capacity or incapacity for work in the presence of a third person, and in circumstances which might put him on his guard in his behaviour and in his answers to necessary questions. The county court judge held that there was no justification for seeking to impose the conditions mentioned, and that the workman had refused to comply with the Act and to submit himself to examination as required by it.

The Establishment of the Connexion between Alleged Accident and Death.—A seaman employed on board a steamship had to have an eye removed owing to conditions due to dust being blown into it. It was alleged that in consequence of the shock of the operation he fell into a despondent and debilitated condition and consequently died. The evidence of three medical witnesses was to the effect that death was due to exhaustion and shock in the patient following on primary cancer and cirrhosis of the liver, and attributed it to the operation, in that it brought about despondency followed by dyspepsia. Three other medical witnesses took the view that death was not due to the accident through the operation, but to the cancer which was pre-existent. The county court judge held that the chain was not complete and that it was not established on behalf of the claimant that the death of the workman had been caused by the accident.

THE OLD BAILEY.

Rex v. Crippen.—HAWLEY HARVEY CRIPPEN was tried and convicted, Oct. 18th to 22nd, at the Old Bailey for the murder of his wife, CORA CRIPPEN, the evidence identifying the remains of the deceased and connecting the murderer with his crime being mainly that of medical witnesses. Portions of the remains of a human being—headless, limbless, boneless, and without any parts calculated to prove the sex—were found under the floor of the cellar of a house whence the accused had escaped after inquiries had been set on foot with regard to the disappearance of his wife early in February of this year. The principal features of the medical evidence were as follows.

Mr. A. J. PEPPER and Dr. THOMAS MARSHALL visited 39, Hilldrop-crescent on July 14th and found animal remains in a hole in the cellar, with appearances of lime. Dr. W. H. WILLCOX on analysis found calcium hydrate and calcium carbonate in the earthy material round the remains corresponding to about 30 per cent. of quicklime. With the remains were a pair of female combinations and undervest, a man's handkerchief, and pyjama jacket, proved to be identical with a pyjama jacket admitted to be the prisoner's; also three Hinde's curlers containing hair. The hair was proved to be human, with roots at one end, and it showed signs of bleaching. Some loose hair showed signs of bleaching also, and it was proved that Mrs. CRIPPEN dyed

her hair. The remains included the heart, lungs, liver, kidneys, stomach, intestines, and portions of skin and muscles of a human adult, showing remarkable freedom from ordinary signs of bacterial putrefaction, especially as to the heart and kidneys. A relatively considerable amount of adipocere was present in the portions of skin and organs.

After examination and consideration of the conditions in which the remains were found Mr. PEPPER, Dr. MARSHALL, and Dr. WILLCOX were of the opinion that they had been buried from four to eight months, and that they were remains of an adult of young or middle age buried soon after death. A piece of skin, the establishing of the position of which was of extreme importance, was in the opinion of the medical witnesses of the Crown, with whom the medical witnesses for the defence, Dr. H. M. TURNBULL and Dr. R. C. B. WALL, ultimately agreed, from the lower part of the anterior abdominal wall. On this piece of skin, stretching from a line of hairs corresponding with pubic hairs, was a mark extending upwards four inches, smooth, showing some pigmentation and transverse striation, and with a slightly raised line along the middle of it. This mark was emphatically declared by Mr. PEPPER to be that of an old, stretched scar, and with this opinion, forming their own view independently, Dr. MARSHALL, Dr. B. H. SPILSBURY, and Dr. WILLCOX agreed. At the upper end of this mark it was joined by another curved mark, the two combining to form a mark roughly in the shape of a horseshoe. This curved mark the witnesses of the Crown attributed to a folding of the piece of skin, coming to their conclusion owing to the marks of sebaceous glands occurring in it and to characteristics of a scar observed in the first mark mentioned being absent. The witnesses for the defence attributed both marks—i.e., the whole of the "horseshoe"—to the folding of the skin and denied the presence of a scar. Considerable discussion took place as to the nature of this mark, the question whether there was or was not a scar being of vital importance in the identification of the remains, and a microscopical examination was held by the medical witnesses for the prosecution and defence. The evidence of a female friend of the deceased proved that she bore the scar of an operation in the position assigned to the mark identified as a scar by the medical witnesses for the Crown.

The manner in which the removal of the viscera of the chest and abdomen had been performed, as well as the other mutilation of the remains, indicated, in the opinion of the medical witnesses for the Crown, some anatomical knowledge, and it was proved that the accused claimed an American diploma from a homœopathic institution and had lived by the unqualified practice of medicine for many years in London. His doing this had a bearing also upon the question of the cause of death. The stomach, kidneys, intestines, and liver had been submitted to Dr. WILLCOX, who found in each of these organs an alkaloid which produced complete paralysis of the pupil of the eye of a cat lasting several days. He, Dr. WILLCOX, submitted all the organs to the Stas-Otto process, and from each obtained a mydriatic alkaloid. In each case a definite purple-violet colour was given by VITALI'S test, showing, in his opinion, that a vegetable mydriatic alkaloid was present—viz., atropine, hyoscyamine, or hyoscine. Having found a vegetable mydriatic alkaloid, he proceeded to determine which was present, and by special purification of the alkaloid obtained he found that it was not crystalline, but gummy, in character. Also he found that on treating a solution of the purified alkaloid with bromine in hydrobromic acid brown spheres were obtained. Hyoscyamine and atropine give crystals with this latter test and hyoscine spheres. From these characters Dr. WILLCOX concluded that the alkaloid present was hyoscine. Dr. A. P. LUFF confirmed independently the accuracy and suitability of the tests applied by Dr. WILLCOX, and supported his opinion that the mydriatic alkaloid found was a vegetable mydriatic alkaloid and was hyoscine. From the quantities found in the several organs submitted to him Dr. WILLCOX concluded that over half a grain of the salt must have been present in the whole body. The lungs, which were more putrefied than the other organs, showed only the merest trace of mydriatic alkaloid, and the distribution of it pointed to administration through the mouth, at the same time excluding the explanation that it was the result of putrefaction owing to the fact that the best-preserved organs yielded the greatest percentage of alkaloid.

CRIPPEN was proved by a druggist's assistant and by his own admission to have purchased 5 grains of hyoscine hydrobromide for the alleged purpose of compounding homœopathic medicines. He stated that he used two-thirds of the amount purchased for this purpose, but could not mention any patient for whom he had prescribed it, or say where the residue was. Evidence was given that it was a drug generally given hypodermically in doses of 1-100th to 1-200th grain, and never by the mouth in doses of half a grain; also, that it was not mentioned in the British or American homœopathic pharmacopœias, its uses being fully gone into on behalf of the prosecution and of the defence.

The conviction and execution of the prisoner are matters of recent occurrence and common knowledge.

AT THE ASSIZES.

Personation of a Medical Man.—At Durham assizes a sentence of six months' imprisonment in the second division was passed on ADAM MELROSE PORTEOUS, an unqualified person who, having at one time been a medical student, and having practised as a veterinary surgeon, for which he was qualified, had obtained the post of locum-tenent during the absence of the medical superintendent of the Durham County Asylum. This position he occupied without being detected at the time, and when he was arrested he had just returned from serving as a ship's surgeon. He used forged testimonials and passed himself off under the name and initials of Mr. W. J. PORTEOUS, a registered medical practitioner. He had at one time endeavoured to obtain the insertion of his own name in the medical directory, but had failed.

Improper Signing of a Death Certificate.—At Leeds assizes an unqualified person, employed by a medical practititioner as dispenser, bookkeeper, and surgery attendant, was charged with forging his employer's name on a certificate of the cause of death. It was admitted by the prisoner that he had done this frequently. In the case in question the medical employer had not seen the deceased, and he admitted that he did not know how many certificates might have been signed with his name by the accused person. He denied, however, having authorised him to sign any. A fine of 40*s.* was imposed.

IN THE CORONER'S COURTS.

An Unqualified Woman acting as a Midwife without Reward.—An unqualified woman received severe censure from the district coroner at Manchester owing to the death of a woman whom she had attended in childbirth from syncope consequent on hæmorrhage. No medical man had been sent for. The coroner told the midwife that she had had a narrow escape from being sent to trial for manslaughter. She was not subject to the Midwives Act as she was not proved to have made any charge for her services.

Case under the Midwives Act.—A medical man pointed out to the jury at an inquest held upon a woman who had died in childbirth, at which she had been attended by a

person acting as a midwife but not registered, the reason why he did not attend the case in response to a summons to do so. The guardians would have paid him a fee if the case had been one under the Midwives Act, but as the person attending was not a midwife qualified under the Act to practise he would have had to attend without any hope of payment. The case, therefore, was one for the intervention of the relieving officer and the medical officer of the union.

Technical Grounds for Refusing Payment.—In another instance recorded by a correspondent, and relevant to the last paragraph, a medical man sent in his claim to a board of guardians for attending two cases to which he had been summoned on the recommendation of a registered midwife. He received the following replies: As to (1), that he was out of date, although no limitation of date was named in a circular on the subject which he had received; as to (2), that the claim was not for attendance on a viable child. He was also informed that the guardians would see what they could do if he would satisfy them that he had taken reasonable steps to secure his fees from the persons attended.

IN THE POLICE COURTS.

Cases of Quackery: a Bogus Death Certificate.—A man named BANKS was fined £25 at the Clerkenwell police court with the alternative of three months' imprisonment, who was proved to be unqualified, to have attended a woman, stated to have suffered from bronchitis, until she died, and to have signed a certificate of the cause of death, thus necessitating subsequent rectification of the register by statutory declaration. The accused was believed by the husband of the deceased to be a medical man, and was known as Dr. BANKS, in which capacity he prescribed for a gentleman sent to call upon him by the Medical Defence Union who suffered from no disease, but who, he said, was affected by various complaints, including consumption.

An Unqualified Foreigner Falsely Pretending to be a Registered Medical Practitioner.—At the North London police-court it was proved that a man named WERNER had pretended that he was a medical practitioner, in which capacity he had prescribed for, and taken a fee of 5*s.* from, a representative of the Medical Defence Union, which was responsible for the prosecution. He had also attended a man who had taken poison and died, had attended at the inquest which followed, and had given evidence stating himself to be a registered medical practitioner. In advertisements in a newspaper he was described as a "French specialist."

Unregistered Woman Practising as a Midwife.—At Leeds three cases, heard in the police court on two consecutive days, called attention to the illegal practice as a midwife of a woman who, in defence to one summons, contended that she did not act as a midwife for payment, but only made a charge for nursing. She was not believed and was fined £5. In another case it was found that the same woman's daughter had been confined at her mother's house, but had registered the birth at a false address. For this she sought to excuse herself by alleging that she did it in order to avoid having her child vaccinated, the suggestion of the prosecution being that the real reason was to prevent attention being called to her mother's illegal practice as a midwife.

An Indecent Rogue.—A man, described as a clerk, was convicted of obtaining money from young women by falsely pretending that he was a medical man who was connected with two London hospitals and that he could obtain for his victims treatment in certain institutions, for admission to which preliminary fees were required. In order to convince the young women that they needed treatment he made pretended medical examinations, necessitating the removal of portions of their clothing, a procedure which, as the magistrate pointed out, might have been made the ground of a charge of indecent assault.

ANATOMY.

The Effect of Specialisation on Anatomy.

When we come to review the progress in anatomy from year to year we are more and more impressed by the fact that the modern specialisation in the practice of medicine is being attended by a rapid progress in our knowledge of the anatomy of the human body. The specialist studies the anatomy and physiology as well as the diseases of the part to which he has devoted himself, hence new facts regarding the structure of the eye and orbit, the ear, the nose, the pharynx and larynx we owe largely to the specialist. Radiologists are now the anatomists of the living; year by year they are vitalising the still-life studies of the dissecting-room. The rhinoscope, laryngoscope, bronchoscope, œsophagoscope, gastroscope, cystoscope, and proctoscope give the specialists an opportunity of examining in life parts which the anatomist can only see when they are changed by death. Old descriptions have to be altered to meet the new appearances. With specialisation in the practice of medicine there has been a compensatory generalisation in the study of fundamental subjects. The lines which divide the anatomist, physiologist, and pathologist are disappearing. We see anatomists crossing the border line and studying the function and pathology of the part at the same time as they work out its structure. Many of the best contributions to modern anatomy have been made by physiologists. Our present knowledge of the anatomy of the peripheral nervous system we owe to GASKELL, SHERRINGTON, HEAD, and LANGLEY. The best available description of the anatomy of the pituitary body is from the pen and microscope of a physiologist—Dr. P. T. HERRING. The modern movement which has revolutionised our conception of the anatomy of the heart was initiated five years ago by a pathologist—Professor ASCHOFF of Freiburg. Indeed, modern research on the anatomy of the heart is largely in the hands of pathologists, such as Professor MÖNCKEBERG, Dr. WALTER KOCH, and Dr. IVY MACKENZIE. A line cannot now be drawn between the experimental pharmacologist, experimental pathologist, and experimental physiologist—all are, at the same time, experimental anatomists.

Contributions by Zoologists.

The professional zoologist and comparative anatomist add their quota to our knowledge of the human body. In our pages during the year has appeared a notice of the discovery of a peculiar structure in the human brain by Professor A. DENDY and Mr. G. E. NICHOLS of King's College, London. They named it the "mesocœlic recess." It is situated on the roof of the aqueduct of Sylvius, just behind the posterior commissure. They have traced this structure from the lowest to the highest members of the vetebrate kingdom. Sir VICTOR HORSLEY had observed it in the brain of the monkey. Its nature is obscure, but it may prove to be of the nature of an orienting organ. The prolonged researches into the origin and nature of the trophoblast and fœtal membranes, by Mr. RICHARD ASSHETON, lecturer on zoology at Guy's Hospital, are opening up a sure access to a more complete understanding of these structures in man. It seems a "far cry" from the skeleton of man to the skeleton of sponges, yet no one who has read the studies made by Mr. W. N. F. WOODLAND, assistant professor of zoology at University College, London, on the formation of calcareous

spicules in sponges, can fail to see that he has thrown a flood of light on the behaviour of the osteoblast of the human body.

Here, too, is the place to note another anatomical event of the year—the discussion by anatomists and zoologists of the Gaskellian theory of the origin of vertebrates. Many medical men will refuse to believe that there is any connexion whatever between Dr. GASKELL'S zoological speculations and their future practice, but it is highly probable that there is. Dr. GASKELL has devoted 15 years to an inquiry into the origin of vertebrate animals, and he concludes that their ancestry must be sought for in the primitive crustacean stock, and not in Amphioxus and Tunicates. If this is so, then it is certain that an experimental study on such primitive forms of crustacea as now exist would solve many of the obscure problems of human physiology, especially those which relate to the organs of internal secretion. Dr. GASKELL has succeeded in throwing light on so many parts of the human and vertebrate body that were formerly obscure that there must be a large element of truth in his speculations, yet as regards other parts of the vertebrate body his hypothesis appears to break down. A zoological jury, empanelled by the Linnean Society during the present year, returned a verdict of "not proven," a verdict with which Dr. GASKELL and his followers do not agree.

Nervous System.

Coming now to deal with the more strictly anatomical contributions of the year, the first place must be given to Professor G. ELLIOT SMITH'S Arris and Gale lectures on "Some Problems Relating to the Evolution of the Brain," which were published in our pages in January last. It must be owned that, in spite of a clear easy style and an ample supply of simple, accurate, and original illustrations, these lectures are not easily read. They are packed with new fact and close reasoning, but those who master them will have their reward. For the first time we are presented with an evolutionary history of the various parts of the brain, a history on which comparative anatomists and physiologists must base their future work. Side by side with these lectures of Professor ELLIOT SMITH at the Royal College of Surgeons of England must be placed the Goulstonian lectures at the Royal College of Physicians of London by Dr. J. S. BOLTON. Dr. BOLTON'S lectures contain the results of many years of investigation of the structure of the cerebral cortex in health and in disease. He has given us the material on which a pathology of mental conditions may be firmly based, and on which we may be able to correlate mental ability and nerve structure.

Lectures by Dr. F. W. MOTT have served to direct attention to much that is obscure in our knowledge of the structures and spaces concerned with the cerebro-spinal fluid —a system which increases in importance with the wider application of spinal analgesia and the diagnosis and treatment of meningeal conditions. Dr. J. S. BARR has shown that the human cerebro-spinal fluid system can be irrigated or washed out in life by introducing the irrigating fluid into the lateral ventricle and draining it away at a lumbar puncture. Dr. JOHN CAMERON continues his researches on the multicellular formation of nerves; with Dr. W. MILLIGAN he has published an account of the development of the auditory nerve, the nerve fibrillæ of which they regard as a deposit by neuroblasts which occur along the track of the developing auditory fibres. Dr. WILFRED HARRIS has worked out the sensory distribution of the divisions of the fifth cranial nerve as seen after injections of alcohol for the relief of neuralgia. No better example of the manner in which the clinician can assist the anatomist and physiologist could be cited than Mr. SYDNEY SCOTT'S Arris and Gale lecture on the internal ear. He was able to show how each of the semicircular canals could be functionally stimulated, and to explain the various forms of nystagmus which may occur in cases of disease of the labyrinth.

Anatomy of the Head and Neck.

Mr. F. G. PARSONS has drawn attention to the highly artificial nature of the dissected layers described under the name of the cervical fascia; the fascia is really the packing of connective tissue in which the structures of the neck are set, the only real demarcated interfascial space being the post-pharyngeal. Professor PETER THOMPSON dealt with the development of the thyroid body in his Arris and Gale lectures, and pointed out that the median outgrowth formed, not only the isthmus, but a considerable part of the lateral lobes. Mr. F. D. THOMPSON has investigated the origin and structure of the parathyroid bodies. He agrees with Dr. DAVID FORSYTH that these bodies may come to contain colloid vesicles and resemble the thyroid in structure, but regards them as different in origin and in nature. Mr. J. E. FRAZER of King's College, London, has made important communications on the development of the human larynx, pharynx, and mouth. The lung bud he found to arise between the fifth (last pair) visceral (branchial) arches; the Eustachian tube and middle ear he found were composite in their origin, not, as usually supposed, merely a widening of the upper part of the first visceral cleft. The lower end of the pituitary outgrowth he observed to become drawn into the posterior border of the nasal septum during development, an observation which explains the occurrence of pituitary remnants there.

Professor E. FAWCETT of the University of Bristol continues to revolutionise our conception of the development of the bones of the human face and skull; nor must we forget to mention the inquiries of Professor FITZGERALD into the dimensions and correlations of the pituitary fossa in the base of the skull. It is remarkable how little we know of the anatomy and nature of the tonsil of the naso-pharynx, seeing how often—perhaps more frequently than any other part of the human body—it is the subject of operation. Professor J. SYMINGTON of Belfast has made a most welcome contribution to our knowledge of its anatomy; he describes its situation as extending in the roof of the naso-pharynx from the septum of the nose to the mid-point of the basilar process of the occipital bone. Mr. ARTHUR H. CHEATLE has drawn attention to the "fœtal" cells which occur constantly in the outer wall of the mastoidal antrum, and to the fact that this wall at birth may be composed of dense or of diploëtic bone. In 20 per cent. of adults the diploëtic form persists, and the dense form in little over 1 per cent.

The Thorax, Heart, and Lungs.

One of the most striking observations of the year is that by Dr. F. WOOD-JONES, assistant lecturer on anatomy at St. Thomas's Hospital, regarding the nature of the subclavian groove on the first rib. From time immemorial it has been taught that this groove is caused by the subclavian artery; Dr. WOOD-JONES has shown conclusively that it is caused by the pressure of the lowest cord of the brachial plexus. The observation has a direct clinical bearing. He noted, when the second dorsal nerve made a large contribution to the lowest cord of the plexus, that the groove was not only well marked, but that the rib itself was bent downwards at the point at which the lowest cord crossed it—evidence of pressure by the cord on the rib. When a cervical rib is present it either stops short at the cord or carries the cord, and is marked by a groove. It is well known that the pressure between the lowest cord and a cervical rib may lead to a partial paralysis of the arm; it is possible this may also occur in cases where no cervical rib is present, but where the brachial plexus is low in its origin. The same observer has drawn attention to the relationship of the thoracic duct to

the apices of the lungs and to the bodies of the vertebræ, and the possibility of tuberculous infection from the intestines reaching the lungs and vertebræ by the duct.

Further observations have been made on the diaphragm; the "massive collapse" of the basal part of the lung, cases of which have been recorded by Dr. W. PASTEUR, show how directly the diaphragm acts on the basal lobes, for in all of these cases the diaphragm was paralysed or limited in its movements. Radiology of the thorax presents the anatomy of the chest in a new aspect. Mr. A. C. JORDAN has described and illustrated the appearance and position of the arch of the aorta in normal and pathological conditions. Observations by Mr. R. J. GODLEE, Dr. STCLAIR THOMSON, Mr. FAULDER, and Professor C. VON EICKEN have thrown a new light on the position, movements, and behaviour of the trachea, bronchi, and œsophagus in the living.

As regards the anatomy of the heart, we see our knowledge extending in several directions. One of these concerns the distribution of what may be named the specialised musculature of the heart—musculature which is more directly concerned with the initiation and conduction of the heart-beat than with the act of contraction. The discovery by Dr. A. KEITH and Dr. MARTIN FLACK some years ago of a specialised node of muscular tissue (sino-auricular node) at the junction of the superior vena cava and the right auricle, has been the starting point for much further research. By means of the electro-cardiograph Dr. THOMAS LEWIS has traced the initial sign of the heart-beat to the region of the sino-auricular node. A paper by Dr. KEITH and Dr. IVY MACKENZIE has summarised in our pages the more recent researches on the anatomy of the specialised musculature of the heart. One of the most puzzling facts is the absence of the auriculo-ventricular bundle in the bird's heart; Dr. IVY MACKENZIE found that the bird's heart is also characterised by being supplied with peculiar neuro-muscular end-organs.

Another line of research concerns the nature and anatomy of the infundibulum of the right ventricle. Evidence has been accumulating for some time that this part of the mammalian heart represents a separate chamber of the lower vertebrate heart — the bulbus cordis. Professor PETER THOMPSON in his Arris and Gale lectures demonstrated that in the development of the human heart the infundibulum is at first a separate chamber comparable to the bulbus cordis, and that it becomes incorporated in the right ventricle as the infundibulum of that chamber. Further research will likely show that the function of the infundibulum is also different from that of the rest of the right ventricle.

A third line of research which is adding to our knowledge of the anatomy of the heart concerns its shape, its size, and its movements in various positions and physiological conditions of the body as observed during transillumination of the thorax. It is clear that the arbitrary topographical markings given by text-books as guides to the clinician need a complete revision in this matter.

The Alimentary Canal.

The researches which have been carried out by Dr. A. F. HERTZ, Dr. A. E. BARCLAY, Mr. A. C. JORDAN, and others, by studying the form, position, and movements of the alimentary canal in the living after administration of a bismuth-laden meal, materially improve our knowledge of applied anatomy. The form, the size, and the position of hollow viscera cannot be made to conform to any conventional description; they have a separate form for every phase of functional activity. We see that at certain points the canal is kept functionally closed. The circular musculature at the beginning and end of the œsophagus forms a functional sphincter. Professor KILLIAN described the upper œsophageal sphincter two years ago, and recognised that it was the cause of the pharyngeal diverticula which may occur just above it; Dr. A. KEITH, unaware of Professor KILLIAN'S discovery, has described the upper œsophageal sphincter and also given its relationship to pharyngeal diverticula. Dr. HERTZ denies the presence of a mid-gastric sphincter in the human stomach, and in this he is supported by Dr. BARCLAY. The position assigned to the mid-gastric sphincter corresponds to the point at which the pyloric movements commence. The pyloric sphincter is continuously in action.

Several further instances of hypertrophy of the pyloric sphincter in young children have been published by Mr. F. BARKER and Dr. L. MACKEY in our pages. The latter has pointed out how difficult it is to estimate the degree of hypertrophy by any system of measurements, and that cases of hypertrophy of this sphincter occur in children without giving rise to symptoms. In connexion with this matter attention may be directed to a new line of investigation opened up by Professor D. WATERSTON of King's College, London. As is well known, the tissues of the body survive for some time after the death of the individual. JOHN HUNTER showed that the arteries of the umbilical cord lived for three and a half days after separation from the child. Professor WATERSTON has observed that formalin has a selective action on the musculature of the alimentary canal, provided that the injection of a solution is made before death of the muscular tissue has occurred. The sphincteric muscular fibres are specially affected, so are the fibres of the pyloric part of the stomach, especially at the site where peristaltic waves are observed to commence in life. In a manner the action of formalin on non-striated musculature recalls the action of adrenalin.

Dr. P. T. CRYMBLE of Queen's University, Belfast, has published a most useful communication on the band of muscle which suspends the termination of the duodenum (the muscle of Treitz) and the relation of this band to the duodeno-jejunal fossæ. The series of cases published in our pages by Dr. N. I. SPRIGGS illustrate well the various forms of congenital occlusion of the intestine, especially those which occur at the entrance of the common bile-duct and near the terminal part of the ileum, the usual site of a Meckel's diverticulum. Dr. A. KEITH dealt with congenital occlusions and diverticula of the alimentary canal in demonstrations at the Museum of the Royal College of Surgeons of England. Several cases of acquired diverticula of the intestine have been described by Mr. GORDON TAYLOR and Dr. C. E. LAKIN and Mr. R. P. ROWLANDS, and the relationship between such diverticula and inflammatory conditions have been elucidated.

The Pelvis and Uro-Genital Organs.

As regards progress of our knowledge of this part of the body the work of Dr. R. H. PARAMORE stands pre-eminent. Here, again, we see the advantage of clinical aims being carried out by combining with them the methods of the anatomist and physiologist. In his Hunterian lectures he traced the evolution of the muscular floor of the pelvis throughout the whole kingdom of vertebrate animals, and showed that from its inception in fishes to its highest evolution in man the musculature of the pelvic floor is part of the musculature of the body wall, and directly concerned with the support of viscera and the regulation of intra-abdominal pressure. In further publications he has applied his observations and deductions to the human body and gynæcological practice, his main thesis being that in mechanical displacements of the pelvic viscera of the female the first endeavour of the clinician must be to try to restore the muscular pelvic diaphragm to a normal condition. Like every reformer, Dr. PARAMORE may find that the merit of his work gains but a tardy recognition; like all good work which is widely based on accurate observation, its acceptance cannot be long

delayed. A note by Dr. LÉON MACAULIFFE which appeared in our columns bears directly on the relationship between the viscera of the abdomen and pelvis and the musculature of the abdominal wall and perineal floor. Dr. MACAULIFFE calls attention to the observations of SIGAUD of Lyons, showing that the tonicity of the abdominal muscles is regulated by the condition of the abdominal viscera. Clinical observations are made daily which show the close relationship which exists between the viscera and the muscular parietes which support them through a reflex nerve mechanism.

Other observations of anatomical interest are those of Dr. B. P. WATSON (two cases of bicornuate uterus), of Dr. A. H. N. LEWERS (a cyst of Gartner's duct), and of Dr. V. BONNEY and Dr. B. GLENDINNING (adenomatosis of the vagina). Dr. F. WOOD-JONES has published further embryological evidence in support of Dr. BERRY HART'S explanation of the formation of the prepuce. Dr. BERRY HART regards the prepuce not as a fold of skin which has grown over the glans and thus covered it, but as the primitive outer sheath of the glans which has been separated by an ingrowth of epithelium, commencing its invasion in the region of the meatus. Dr. W. WRIGHT and Mr. T. H. C. BENIANS have reinvestigated the anatomy of the trigone of the bladder, and explained its relationship to the ureters and to the internal sphincter of the bladder.

Professor J. KAY JAMIESON and Mr. J. F. DOBSON of the University of Leeds have continued their researches on the distribution of lymphatics, their latest paper being a description of the lymphatics of the testicles. These end in from four to eight collecting vessels, which enter the chain of lymphatic glands placed in the retroperitoneal lumbar region. Attention may also be drawn to two cases of torsion of the testicle reported by Mr. A. G. BATE, for there can be no doubt that the possibility of torsion depends on an imperfect atrophy of the primitive mesentery of the testicle.

Reasons of space preclude a full reference to observations on the applied anatomy of the limbs. As in other parts of the body, the application of X rays is steadily altering our conception of the relationship and action of parts. Mention must be made of Mr. K. H. DIGBY'S paper on the attachments, movements, and function of the semilunar cartilages of the knee, and of Professor DIXON'S study of the internal structure of the upper extremity of the femur.

It is wonderful that a comparatively limited structure like the human body should have afforded so many generations of anatomists full scope for their inquiries, and yet more wonderful that in spite of an increasing annual output of observations the finality of anatomical knowledge, so often announced by famous anatomists of past times, seems as far off as ever.

THE NAVAL, MILITARY, AND INDIAN MEDICAL SERVICES.

THE ROYAL NAVY MEDICAL SERVICE.

Admiral Durnford's Committee of Inquiry.

The report of the committee, presided over by Sir JOHN DURNFORD, that was appointed to consider various questions connected with the medical service of the Royal Navy, has been presented to the Admiralty, but is still under consideration; what its recommendations may be, and whether they have been accepted or not, are matters as to which no information has been given to the public. This committee was appointed in March, 1909—that is, nearly two years ago. It held some 60 sittings, its discussions extended over nine months, and it submitted a unanimous report. So long a delay in promulgating regulations that will deal with the questions at issue is much to be regretted.

New Regulations for Admission.

New regulations for admission into the Royal Navy Medical Service were promulgated early in the year, and detailed at length in our issue of May 14th (p. 1358). These approximate in some ways to the rules in force for entrance into the Royal Army Medical Corps; nominations (except from colonial universities) are no longer allowed; successful candidates are not at once given commissions as surgeons, but are appointed acting surgeons during the time of their course of instruction; on passing the examination at the end of the course they receive commissions as surgeons; these, however, will date back from the date of the entrance examination. Once in every eight years every medical officer is required to undergo a post graduate course of instruction at a metropolitan hospital, during which time he will receive full pay, and will reside at the Royal Naval College, Greenwich. These altered conditions are to be welcomed, as tending to professional efficiency; but the regulation as to living at the Greenwich College will not be popular with married officers.

Powers of Command.

An important change in the interior economy of the service was hinted at in an Admiralty circular issued in April. This stated that it was contemplated "that the command of all officers of branches, other than the military branch, over their subordinates in their own departments shall be as definite as that of officers of the military branch." This direct disciplinary control of the sick-berth staff is one of the matters that have been most urgently insisted on by the heads of the Medical Service as necessary for the proper working of their hospital establishments.

Medical Consultative Board.

The Medical Consultative Board that has been established, analogous to the Advisory Board of the Army Medical Service, is presided over by the Medical Director-General, and has three civilian members, Sir W. WATSON CHEYNE, Sir DYCE DUCKWORTH, and Professor W. J. R. SIMPSON, together with Inspector-General H. TODD as naval member. There is also an Examining Board, including civilian teachers of eminence, analogous to the Board of the Army Medical Service.

Personal.

The Director-General, Inspector-General JAMES PORTER, has been promoted to a Knight Commandership of the Bath, to the general satisfaction of the service. Two veteran officers have joined the majority: Inspector-General THOMAS BOLSTER and Inspector-General ROBERT GRANT, C.B. The former had seen no war service; the latter was ashore in the Kaffir War of 1877, also in the Zulu War (1879) and in the Eastern Sudan operations in 1884.

THE ARMY MEDICAL SERVICE.

We have again to chronicle an uneventful year in the military forces as far as active service is concerned. The officers of the Royal Army Medical Corps have been steadily carrying on researches in various fields of work which will prove to be of permanent value.

Scientific Work of the Army Medical Service.

The Sleeping Sickness Commission, presided over by Colonel Sir DAVID BRUCE, returned from Uganda in April. The Commission had during the earlier researches come to the conclusion that the carrier fly, Glossina palpalis, lost its infective power 48 hours after having fed on the blood of an infected person. At the end of 1908 KLEINE, in German East Africa, showed that G. palpalis could convey Trypanosoma brucei even 50 days after it had fed on an infected animal. A large number of experiments have been conducted by the Commission, and it has been found that infectivity with T. gambiense remains up to 75 days, the trypanosomes undergoing development within the body of glossina. After prolonged investigation it appeared that the proportion of infected flies that retain infectivity for

so long a period is very small, about 2·5 per cent. For every case of infection propagated in this manner probably a thousand are caused by direct transference. Moreover, on the uninhabited shores of the Victoria Nyanza, after all the native population had been removed, experiments showed that G. palpalis could retain its infectivity for at least two years. Until lately it had been supposed that human beings were the only "reservoir" for the virus of T. gambiense, but the Commission's latest researches have shown that cattle also harbour the virus, and that so the infectivity of the tsetse-fly may be kept up for a very long period; although there is no proof so far that in nature this actually takes place. The same Commission has found that Malta fever exists in endemic form in Uganda, along the eastern shores of Lake Albert Edward, under the name of *muhinyo*. M. melitensis was detected in the spleen of patients suffering from the disease, also in the spleen of goats, whose milk had been drunk by the sufferers.

It has been decided to appoint another Malta Fever Commission to investigate the mode in which goats become infected with M. melitensis; this is now apparently the only matter that requires to be settled. During 1909 one case of Malta fever occurred amongst the military, and nine amongst the naval, population. The civil inhabitants still suffer to a considerable extent, and it is not practicable to prohibit their use of goat's milk.

Lieutenant-Colonel C. BIRT has studied the epidemiology of the "simple continued fever," or "three-day fever" of Malta and Crete, and has proved by actual experiment that it is a specific affection conveyed by Phlebotomus papatasii (a sandfly), similar to, but milder than, the Pappataciefieber described by DOERR in Herzegovina (1909). Lieutenant-Colonel C. H. MELVILLE has made a valuable contribution to applied physiology in a study of the food requirements for sustenance and for active work, based on actual observations conducted with great care.

Military Medical Organisation.

The advances in organisation that were chronicled in our review of last year's work have been continued during 1910. In the extensive field manœuvres that have been carried out on Salisbury Plain and elsewhere the medical service has taken its full share, and with a nearer approach to reality than ever before. We are sure that whatever expense is incurred in these operations, to take part in which a considerable number of officers and men are removed from their ordinary and routine duties, the result is well worth it. The actual practice in working the field ambulances has been of the greatest value, not only to the medical, but also to the regimental and transport *personnel* concerned.

The scheme for organising voluntary aid for the sick and wounded in the event of war occurring in this country has developed considerably. The British Red Cross Society is the central body, and under its auspices branches have been formed in many counties. Sir F. TREVES has given much help in explaining the aims and methods of the society throughout the kingdom. We doubt if, even now, the profession, or the public generally, are alive to the vital importance of this matter. The medical practitioner, both in town and country, is commonly a very hard-working man, with little leisure, or perhaps inclination, for taking up quasi-military work seriously. Yet busy men in other callings do so, and we believe that if the real objects and vital necessity of this organisation were properly put before them (as Sir F. TREVES has been doing in many places) there would be a large addition to the medical *personnel*. It appears that there has been some difficulty in filling up the strength of the voluntary aid detachments, and it is claimed that "much more liberal facilities" should be granted—that is, a much lower standard of efficiency accepted—for the nursing staff than has hitherto been the case in the ambulance department of the Order of St. John. Any such relaxation in the standard of training and examination must be very carefully considered if the organisation is to be of practical use in time of need.

Progress is being made in the development of the Sanitary Corps of the Territorial Force, in which many medical officers of health throughout the country are taking an active part. A well-attended conference of medical officers of the West Riding area was held at Leeds in March, presided over by the general commanding the division; views were exchanged and demonstrations given of sanitary appliances for field use.

Personnel.

Consequent on the retirement of Sir ALFRED KEOGH, Surgeon-General W. L. GUBBINS, C.B., M.V.O., was appointed Director-General of the Army Medical Service on March 6th. This officer has had a distinguished war record in the Afghan and South African campaigns, and had previously had considerable administrative experience, having been Assistant Director and Deputy Director-General at the War Office and Principal Medical Officer in India. Considerable comment was made at the time in service circles and in the press on the fact that the provisions of the still recent Royal Warrant regulating promotion were disregarded by the retention of a Surgeon-General on the active list beyond the age of 60. No one has attempted to dispute the ability and fitness for his position of the present Director-General, but the fact that the highest military authorities have broken their own regulations, or, rather, infringed the articles of a Royal Warrant (which carries, or ought to carry, much higher authority than any departmental code of regulations), is one that is, on grounds of principle, to be regretted. It is setting a bad example. Without doubt a considerable feeling of uneasiness was created amongst the senior officers of the Medical Service. We do not think this was unreasonable. Colonel W. BABTIE, V.C., C.M.G., became Deputy Director-General, with temporary rank of surgeon-general, and Colonel M. W. O'KEEFFE was appointed Inspector of Medical Services. At the Royal Army Medical College Major C. G. SPENCER, F.R.C.S., has vacated the post of professor of surgery and has been succeeded by Major E. M. PILCHER, F.R.C.S.

Obituary.

We have to record the deaths of Surgeon-Major T. E. HALE, V.C., C.B., who won his Cross in the Crimea and afterwards served through the Indian Mutiny; Surgeon-General G. L. HINDE, C.B.; Lieutenant-Colonel J. P. H. BOILEAU, at one time assistant professor of pathology at Netley, and a writer on professional and service subjects; Surgeon-General J. G. FAUGHT; Lieutenant-Colonel H. R. GREENE PASHA, the first Director of Egyptian Sanitary Administration after the British occupation in 1882; Dr. JOHN ANDERSON, C.I.E., formerly surgeon to the Viceroy of India, and for many years in consulting practice in Harley-street, a man of many friends and much beloved; Colonel F. H. WELCH, formerly assistant professor of pathology at Netley, a writer on pathological and clinical subjects, and a frequent contributor to our columns; Surgeon-General J. SINCLAIR, a principal medical officer in the Abyssinian expedition of 1867; and Lieutenant-Colonel C. M. DOUGLAS, V.C., retired A.M.S., who obtained his Cross in 1867 for rescuing comrades under circumstances of great danger at the Andaman Islands. He retired in 1882.

No reference to the loss sustained by death in the military ranks of the profession during the past year can be made without a tribute to the memory of FLORENCE NIGHTINGALE, the founder of modern nursing, and more especially of nursing for the sick and wounded in war.

THE INDIAN MEDICAL SERVICE.

It must be admitted that the feelings of unrest referred to in our annual review for last year have in no degree diminished amongst officers of the Indian Medical Service during the year just past. It may be remembered that the Secretary of State had decided that the increase in *personnel*, acknowledged on all sides to be necessary, should be met, not by an increase on the civil side of the existing service, but by gradually extending the employment of civil medical practitioners recruited in India. Surgeon-General LUKIS, who succeeded Sir GERALD BOMFORD as Director-General on Jan. 1st, made an important speech at Simla in July, in which he emphatically declared that the fears which had been expressed that the palmy days of the Indian Medical Service had passed away were entirely groundless, and stated his firm conviction that the service would flourish more vigorously than ever. He alluded to, and deprecated, the growing tendency to estrangement between the civil and military branches, and urged the officers in civil employ not to forget that they were military officers and that the main object for which they were put in charge of civil hospitals was that they might become more efficient surgeons, and therefore be of more use to their country in time of war. The DIRECTOR-GENERAL no doubt intended the term "surgeons" to include all branches of the profession; as in modern warfare, it is now generally acknowledged that the treatment of disease, and still more its prevention, are of enormously greater importance than any surgical procedures. It might be thought that the medical and surgical care of the 300 million native inhabitants of India would be a sufficient charge for a portion, at all events, of the Indian Medical Service without any ulterior regard for military practice (except in the event of national emergency), and undoubtedly this has been the view which has been generally held in past years. Our contemporary, the *Indian Medical Gazette*, alluding to the tendency which exists to depreciate the civil side of the service, recalls the splendid services the civil surgeons have rendered to surgery, instancing especially operations for calculus and cataract. It is difficult to imagine that these and the many other advances in all branches of medicine and surgery that we owe to our colleagues in India, would have taken place if their views had been limited by the needs of war service. The civil surgeons of India have indeed been the backbone of the Indian Medical Service; and by their energy and skill, and the influence they exerted on native princes and nobles, so that necessary funds should be forthcoming for hospitals, &c., have accomplished a magnificent work for humanity, far exceeding in its scope anything that could have arisen from the military side of the profession.

Scientific Work of the Indian Medical Service.

The chief scientific work of the past year has been the outcome of the Malaria Conference of 1909. A central scientific committee has been established at Simla, which will map out general lines of investigation, and also undertake research, both at the central institute and in the field. Secondly, each province has an organisation for the detailed investigation of malaria. Thirdly, all the provincial "malariologists" will meet the central committee at Simla every autumn. The establishment of this organisation marks a most important step in the public health service of India. Antimalarial operations have been carried out in many places. In Bombay, according to MCKENDRICK, Nyssorhynchus stephensi is the only important carrier-mosquito.

A further report on plague has been submitted by the advisory committee. The dependence of human plague on rat plague is again emphasised; its spread among rats is due to fleas; during a plague epidemic the disease in man is contracted from rats, also through the agency of fleas, in most cases. It was found that there is a definite seasonal variation in the prevalence of fleas closely associated with plague prevalence. The valuable Scientific Memoirs by Indian medical officers published by the Government of India have been noticed from time to time in these columns. During the past year these have included observations by Major G. LAMB and Captain A. G. MCKENDRICK on Atrophic Rabies in Animals; a research on Piroplasma Canis by Captain S. R. CHRISTOPHERS; an inquiry into Anti-rabic Immunisation by Captain W. F. HARVEY and Captain MCKENDRICK; and an elaborate investigation by Captain D. MCCAY on Bengal Dietaries. All of these are works of considerable importance and permanent value.

Study Leave.

New regulations have been issued allowing study leave to officers of the Indian Medical Service at the rate of one month for each year of service, up to 12 months in all; it may be taken at any time, but not more than twice in an officer's service. This is a most judicious concession.

Personal.

Sir GERALD BOMFORD retired from the post of Director-General on Jan. 1st, 1910, and was succeeded by Lieutenant-Colonel C. P. LUKIS, whose promotion to Surgeon-General was gazetted on March 22nd. Colonel W. G. KING, C.I.E., so well known for his distinguished services as Sanitary Commissioner in Madras, and especially in connexion with vaccination, retired in May. We regret to record the death of two valuable medical officers from cholera—Major J. C. WEIR, R.A.M.C., at Darjiling; and Captain E. D. SIMSON, at Nowshera. They were both very highly esteemed and universally regretted.

The Civil Medical Profession in India.

Questions have been asked in Parliament as to the intentions of the Government with regard to Lord MORLEY'S despatch of last year; no further pronouncement has been made. It is evident that the native members of the profession are expecting that changes will take place. A question was asked by the Hon. Mr. GOKHALE at the Viceroy's Council in March as to what steps were in contemplation to give effect to Lord MORLEY'S recommendations. The only answer given was to the effect that the Government is considering the possibility of throwing open certain of the teaching appointments at the medical colleges to "non-official medical men." It is asked also what steps can be taken to extend the employment of civil medical practitioners recruited in India. At a subsequent meeting of the Council assurances were given of the Government of India's "full and sympathetic consideration" of the proposals; as it was about to address the Secretary of State on the subject, it was unable to give any further information for the present.

It cannot be too clearly understood that there is already an ample field in India for the energies of native medical men, who are thoroughly educated and equipped for the practice of their profession, and who possess the mental and moral qualities necessary to attain success in a scientific professional career. But a high standard is necessary for the attainment of success, and up to the present the number who have reached this standard has not been large, either in the Indian Medical Service or in the so-called "independent medical profession." As time goes on there is no doubt that the number who reach this high standard will increase; no doubt the number of high and responsible appointments available will also increase. The Government of India evidently does not consider that any sudden change can be made, nor even any rapid advance, at the present time; in

this we believe it is well advised. We fear, however, that the promulgation of the proposed changes is exercising an unfavourable effect on the status and popularity of the Indian Medical Service. For some years past it has not attracted so many competitors for the appointments offered as was formerly the case; and there is certainly a feeling abroad that its attractions are materially lessened.

PHARMACY.

Scientific Progress.

The later developments of pharmacy have been determined by commercial rather than scientific influences, and owing to causes of a material character the majority of the members of the medical calling are not able to devote any considerable amount of time to pharmaceutical research. There still remain, however, a number of earnest workers in the scientific field upon whom depends the advancement of pharmacy proper.

During the past year much useful work has been accomplished in connexion with the revision of the British Pharmacopœia, and in the spring a second report was issued by the Committee of Reference in Pharmacy to the Pharmacopœia Committee of the General Medical Council. This dealt with the monographs for extractum glycyrrhizæ liquidum to liquor magnesii carbonatis, and gave a general description of a process of repercolation. The committee has been steadily at work throughout the year, and it is expected that the final report will be ready by May, 1911.

In this connexion two members of the committee, who have opportunities of producing and examining essential oils, recorded their views at an evening meeting of the Pharmaceutical Society, and made a number of suggestions which may be taken as the basis for the monographs of the next edition of the Pharmacopœia. While it is now possible to assay many of the essential oils for what are admittedly their most important constituents, the authors confessed that the time had not yet arrived to replace the natural oils by these constituents. Just as in the Pharmacopœia we now have nux vomica and strychnine, cinchona and quinine, opium and morphine, so we have peppermint oil and menthol, and it would be well to retain such oils as dill and caraway, and not to replace them by, or even to include, carvone.

Another evening meeting of the Pharmaceutical Society was devoted to the consideration of oils, fats, and waxes, when two members of the Committee of Reference suggested a basis for the official monographs on these substances. Much trouble has been caused in the past owing to the insufficiency of the official tests as a means of insuring that degree of purity necessary in articles required for medicinal use, and the authors expressed the opinion that the tests in the official monographs should, therefore, be as comprehensive as possible. They suggested the desirability of introducing figures for the saponification value, the iodine value, the percentage of free acid, the percentage of unsaponifiable matter, and the refractive index. Material has thus been furnished which should prove of great value in the production of the next Pharmacopœia.

In addition to the communications from members of the Committee of Reference, papers of practical utility have been contributed at meetings of the Pharmaceutical Society by independent workers. Among these was a paper by Professor H. G. GREENISH, in which a method was described for detecting powders manufactured from "worm-eaten" drugs, for which purpose no suitable tests have been available hitherto.

Early in the year the Pharmaceutical Society appointed a committee for the revision of the British Pharmaceutical Codex, and satisfactory progress is being made with the work.

Brief abstracts of some of the papers contributed at this year's meeting of the British Pharmaceutical Conference have already appeared in THE LANCET, and the papers and discussions on the question of the standardisation of disinfectants were printed at some length. Since its foundation 47 years ago the conference has contributed in no small measure to the advancement of pharmaceutical science, and the character of the communications presented at this year's meeting bears witness to the fact that the attention of pharmacists is not wholly absorbed by matters of a trading character. The President, Mr. F. RANSOM, put forward the suggestion that a joint committee, composed of medical practitioners and pharmacists, should be formed for the purpose of organising research work, and expressed the opinion that more valuable results might be obtained if several classes of investigators were to work together. An example of the usefulness of a pharmacologist and a pharmacist working in collaboration was furnished in a paper in which it was shown by Mr. J. H. FRANKLIN, a pharmacist, that in the manufacture of liquid extract of ergot it is better to use a percentage of alcohol in the menstruum rather than water only; and Dr. G. S. HAYNES demonstrated that the result of preparing an extract with a semi-alcoholic menstruum is to increase the physiological activity, as compared with watery extract.

At the Tenth International Congress of Pharmacy, held in Brussels towards the end of the summer, some important recommendations were made relating to the question of international standards, and it was decided to request the Belgian Government to convene an international congress for the unification of methods for estimating potent drugs, and to recommend that for the estimation of alkaloids preference should be given to gravimetric methods. It was also unanimously decided to recommend pharmacopœial authorities to adopt, as far as possible, normal reagents or some multiple of the normal.

Pharmaceutical Education.

One of the main provisions of the Poisons and Pharmacy Act, which came into force on April 1st last year, was that which gave the Pharmaceutical Society power to make by-laws requiring candidates for the qualifying examination to produce evidence of having undergone a prescribed course of study; during the year the members of the Board of Examiners in London and Edinburgh were invited to assist the society's council in devising an appropriate educational scheme, and the matter is now under consideration. At present it is no part of the duty of the council to inquire how or where candidates obtained their knowledge, but it is quite evident from the high percentage of rejected candidates (about 60 per cent.) at the examinations that a large proportion of them are inadequately trained. A suggestion which seems to meet with general approval is that the student should be required to pass his preliminary examination before his period of apprenticeship begins; that during the three years of pupilage he should attend classes in chemistry, physics, and botany; and that at the end of that period he should be eligible to enter for an intermediate examination. Having passed such an examination, he should attend a course of lectures and laboratory instruction at a recognised institution before entering for the final examination. It is probable that the adoption of some such scheme as the above would have the effect desired without unnecessarily increasing the student's expenditure.

Administration of the Pharmacy Acts.

During the year a large number of cases of alleged infringements of the Pharmacy Acts have been investigated and legal proceedings instituted against offenders. Many such cases have arisen as a result of the creation of a new class of poison sellers, for the Act of 1908 empowered local

authorities to grant licences to nurserymen, seedsmen, and others to sell horticultural and agricultural preparations containing arsenic and nicotine. Some of these licensees do not seem to appreciate the fact that it is extremely important in the public interest that the regulations under which poisons are sold should be minutely observed, and, in consequence of neglect to observe the proper precautions, a number of them have been proceeded against and fined. In several cases penalties have been recovered in county courts from assistants to licensed poison-sellers for selling poisons, and in one such case the defendant appealed against the decision of the judge at Kingston-on-Thames county court. The appeal was heard on Dec. 14th when it was contended on behalf of the appellant that the licence of an employer covered persons employed by him at the premises in respect of which he was granted the licence. Mr. Justice PHILLIMORE and Mr. Justice HORRIDGE, sitting as a Divisional Court, dismissed the appeal, holding that just as registered pharmacists cannot shield their unqualified assistants, so licensed persons cannot shield unqualified or unlicensed persons.

Striking evidence of the utility of the regulation requiring particulars of transactions in certain toxic substances to be entered in a poison book was furnished in the summer at the trial of CRIPPEN who poisoned his victim with hyoscine hydrobromide, a substance which is in Part I. of the Poison Schedule. It was stated in the annual report of the Registrar of the Pharmaceutical Society that in 15 cases of alleged infringement of the Pharmacy Acts which had been reported it was found upon analysis that the poison asked for had been omitted from the articles purchased and proceedings could not therefore be taken under the Pharmacy Acts. Such a practice is obviously fraught with considerable danger, and the Society has endeavoured, during the present year, to put a stop to it by instituting proceedings against several of the vendors under the Merchandise Marks Act.

In connexion with the interpretation of the Pharmacy Act of 1868 a matter which has long been in doubt was definitely settled by the decision of a Divisional Court in April. The question for the court was whether pharmacists trading under names other than their own were required to have their own names printed on the labels on packages in which poisons are sold. The magistrate at Old-street police court held that the "trade name" is not sufficient to comply with Section XVII., which requires that all poisons sold by retail shall be labelled with the name of the "seller," but a Divisional Court reversed the magistrate's decision, holding that it was in compliance with the provisions of that section if the name under which a registered person trades appears on the poison label.

The Dispensing of Medicines.

A committee consisting of ten medical men (selected by the British Medical Association) and ten pharmacists (selected by the British Pharmaceutical Conference) was appointed in the summer to consider whether it is possible to make recommendations with regard to the question of dispensing by medical practitioners, and the result of their deliberations is awaited with interest by chemists and druggists. A related topic, or rather a topic which it has become customary to associate with the question of dispensing by medical practitioners—namely, that of counter prescribing by pharmacists—was dealt with in a Blue-book published in December. The statements therein made have not been publicly discussed by pharmaceutical associations, but the council of the Pharmaceutical Society has appointed a subcommittee to consider them. No legislative effect has as yet been given to the resolution of the Executive Committee of the General Medical Council, informing the Lord President of the Council that the committee approved of the suggestion that the regulations as to the methods of storing and dispensing poisons applicable to pharmacists should be extended to medical men.

Organisation and Other Matters.

Something like a hundred local pharmaceutical associations are in existence, and the council of the Pharmaceutical Society has shown its appreciation of the value of organisation by appointing a special committee whose object it is to foster the movement and guide it into useful channels. Mr. W. S. GLYN-JONES, the candidate chosen by the Pharmacists Parliamentary Fund, has obtained a seat in the House of Commons as the representative of Stepney. Mr. GLYN-JONES was for many years in business as a chemist and druggist, but is now in practice as a barrister, and is Parliamentary secretary of the Pharmaceutical Society. The direct representation of pharmacy in Parliament should, in such capable hands, be of much benefit to the craft.

In the early summer pharmacy sustained a heavy loss by the death of Mr. MICHAEL CARTEIGHE, who was for 14 years President of the Pharmaceutical Society, and a useful member of the Council up to the time of his death. It was his constant endeavour to raise the standard of pharmaceutical education and to establish pharmacy on a professional basis. Although he was only partially successful, the fact that pharmacy to-day is in no worse position than it is, is mainly due to his efforts on behalf of a calling to which he devoted the greater part of his life.

CHEMISTRY.

A Triumph of Synthesis.

Chemistry this year may lay claim to a great synthetic triumph for medicine. It has produced "606," EHRLICH'S new specific for the treatment of syphilis. Arsenic in the correct position in the benzene nucleus appears to be the key to the situation. The position of the amido radicle is, however, of the utmost importance, for it was only after the discovery that in atoxyl the amido-group was not bound up with the arsenic that "606" was discovered. In "606" arsenic is trivalent, not pentavalent, which may have much to do with the efficacy of the remedy. Whether, as Dr. JAMES MCINTOSH and Mr. PAUL FILDES put it in a paper published in our columns of Dec. 10th, the amido radicle acts as the anchoring agent or as an auxiliary to the toxic influence of arsenic is not quite clear, but it seems that the transposition of the amido radicle into the third position of the benzene nucleus has brought about a marked diminution in the organotropic properties of the medicament without reducing in any way its parasitotropic qualities. The power of the chemist thus to alter the architecture of the molecule at will is like the moving of a single piece on the chess-board, which changes the position from one of apparent indifference to one of intense power. Chemists may well be proud of this synthetic achievement.

Radium, a Metal.

The production of radium in the metallic state may not possess any medical significance, but it is at all events important that the rare element has been recognised to belong to the metallic family of which barium, strontium, and calcium are members. Metallic radium was obtained by Madame CURIE and M. A. DEBIERNE, and the result was reported to the Academy of Sciences in Paris on Sept. 5th, just a little over a hundred years after Sir HUMPHRY DAVY succeeded in isolating the metals potassium and sodium.

Degradation and Transmutation.

Chemists do not appear to have got much farther with the theory of the degradation of the atom. The change of radium into, amongst other things, helium has been demonstrated, but it seems hard to get tangible proof that gold,

say, can be converted into copper. Madame CURIE, however, hopes to be able to show that one of the degradation products of polonium is lead. Of course, the demonstration of decay has only been made so far with the unstable element, but it is conceivable that with the immense factor of time in operation the noble metals gradually fall away from their high station. Thus the world's supply of a metal known now as copper might, for aught we know, have been gold ages and ages ago.

The Pathology of the Soil.

A remarkable light has been thrown upon the conditions which govern the fertility of the soil, and the continued investigations in this direction are yielding results of the utmost importance. The interesting observation has been made that the fertility of the soil can be increased very greatly by certain antiseptic treatment or by heating it to a definite temperature. It was found, for example, that when certain soils were heated to a temperature of 100° C. for two hours they yielded twice as great a crop as the same soil untreated when the two were afterwards cultivated in pots under similar conditions. In the same way an increased yield of 30 per cent. was shown when soil was first exposed to the vapour of such volatile antiseptics as carbon disulphide, chloroform, or toluene for 48 hours, provided that the soil was afterwards completely freed from the antiseptic before the experiment as to its fertility was commenced. The explanation was found to be that the protozoa and amœbæ of the soil which subsist on ammonia-producing bacteria are reduced or destroyed by heat or antiseptic treatment, and so the little engineers favourable to the fertile qualities of the soil are left unconsumed and unhindered to break down the complex nitrogen compounds into simple substances, of which ammonia is a type. By sparing the lives, in short, of the fertilising bacteria, by destroying their enemies the protozoa and amœbæ, the work of enriching the soil is encouraged. It is probable that the rays of the sun may also contribute towards checkmating the destruction of the beneficent bacteria by reducing the activities of the maleficent protozoa.

Bacterial Corrosion.

The active bacterium implies chemical action, and this is exemplified in a peculiar way in the corrosion of underground steel structures. The matter is of some importance in connexion with the stability of bridges and of the foundations of certain buildings. It appears that the corrosion of underground iron and steel may be due directly to the attack of a specific microbe, or indirectly to the action of bacteria creating acid conditions in the soil. It is suggested that underground steel structures should be protected against the acidogenic microbe by the free sprinkling of lime in the soil.

Sterilising by Light.

More than one article has appeared in our columns during the year referring to the development of ultra-violet rays as a practical means of destroying pathogenic organisms. The invention of the quartz or silica tube has made the production of ultra-violet light a practical quantity in the mercury vacuum lamp. The advantage of sterilising water intended for drinking purposes by using ultra-violet rays is obvious, since no chemical or physical alteration is effected. The method has been adopted for the domestic sterilisation of water on some practical scale. It remains to be seen how far the ultra-violet rays may be employed for the successful sterilisation of other substances.

Alcohol from Sawdust.

The production of ethyl alcohol from sawdust is a commercial consummation of well-known chemical principles. By converting the cellulose existing in all woody fibre into a fermentable sugar alcohol is readily obtained. As sawdust is produced in all parts of the world in enormous quantities in the cutting up of timber the industry promises to become an important one. The yield is about 30 gallons of alcohol, per ton of sawdust.

The Veterans of Chemical Science.

A remarkable gathering took place at the Savoy Hotel on Nov. 11th, 1910, on the occasion of a banquet given to the past presidents of the Chemical Society, who have been Fellows of that society for more than half a century. Those who bear the qualification were: Professor WILLIAM ODLING, F.R.S., the Right Hon. Sir HENRY E. ROSCOE, F.R.S., Sir WILLIAM CROOKES, O M., F.R.S., Dr. HUGO MÜLLER, F.R.S., and Dr. A. G. VERNON HARCOURT, F.R.S. Professor HAROLD B. DIXON, F.R.S., the present President of the Chemical Society, presided, and in giving the toast of "The Past Presidents who have been Fellows for Half a Century," paid a tribute to the immense services to science which each past president had rendered. The replies of the past presidents were most impressive, each recalling the special incidents of his career which have made them distinguished men in chemical history. With two sentences from Sir WILLIAM CROOKES'S reply we may aptly conclude as bearing upon the trend of recent chemical study. "Among the early speculations I heard propounded by FARADAY," said Sir WILLIAM CROOKES, "were those on the nature of electricity and the ultimate constitution of matter. In the highly rarefied regions of present-day speculation our progress is so rapid as to take away one's breath! It seems no law is more certain than the Law of Change. A bit of radium that would go into a thimble has almost suddenly shaken our belief in the conservation of substance, the stability of the chemical elements, the undulatory theory of light, and the nature of electricity; has revived the dream of the alchemists and the preservation of perpetual youth, and has cast doubts on the very existence of matter itself. For physicists are beginning to say that in all probability there is no such thing as matter; that when we have caught and tamed the elusive atom and have split it into 700 little bits, these residual particles will turn out to be nothing more than superposed layers of positive and negative electricity."

CONTRIBUTIONS FROM "THE LANCET" LABORATORY.

Two important inquiries, involving considerable experimental work, have occupied the attention of the laboratory during the year, but the results are not yet ready for publication. It is hoped, however, that the reports will appear in our columns early in the new year. One investigation relates to the quantity and character of the soot-fall in various parts of the metropolis under varying conditions of weather and at different seasons of the year; and the second investigation has produced some novel and interesting observations on the chemistry of the cup of tea in relation to its physiological effects.

Last year, it will be remembered, we published the report of THE LANCET Commission on the Standardisation of Disinfectants. Further work is still being done as time permits, and in THE LANCET of May 7th some improvements as to chemical analysis of disinfectants were recorded. More recently the substitution of iodine for bromine in the estimation of the replacement value of phenols has been worked out in the laboratory, the advantage of using iodine instead of bromine being that the point of saturation can more readily be seen when using the former element than when using the latter. During the year several well-known manufacturers have asked us to examine their disinfectant products in the light of THE LANCET test. Subsequently

we decided to open a column for reporting the results, the first example of which appeared in THE LANCET of June 11th. We note with satisfaction that certain well-known bacteriological authorities are adopting THE LANCET test.

In April last the Local Government Board issued a report upon the manufacture of rag-flock. It was satisfactory for us to find that Dr. REGINALD FARRAR'S observations, supported by reports from Mr. CECIL WARBURTON, Professor G. H. F. NUTTALL, Dr. G. S. GRAHAM-SMITH, and Dr. F. C. GARRETT, amply justified the terrible conclusions arrived at by THE LANCET Commissioners in 1907, 1908, and 1909. The purifying effect of washing was demonstrated in a series of analyses made of washed and unwashed flock in THE LANCET Laboratory in January, 1909.

A note from the laboratory on black bread appeared in THE LANCET of Jan. 15th, in which it was pointed out that there was very little difference between the nutritive value of the wheat and the rye loaf. The observation had its origin in the curious fallacy which at the time was going the rounds of certain political squabblers to the effect that the term "black bread" implied a kind of famine food, whereas, as it was shown, in several civilised countries rye bread is just as much the staple and normal article of diet as is the white loaf in this country.

Attention was called in THE LANCET of Feb. 5th to a rapid method of making hams, bacon, and certain fishes appear to be smoked by applying to them a fluid called "Smoke Essence." A specimen of the essence was examined in the laboratory and it was found to consist chiefly of creasote, aniline dye, and a salt of iron. The generally ubiquitous boric acid appeared to be absent. The contention that such a mixture is harmless may be right, but that does not justify leading the customer to suppose that a bloater, a tongue, a rasher of bacon or ham, treated by this simple process, had been adequately cured by the operation well known as "smoking." There can be no question at all that the colour is added to complete the disguise, and the ingenuity of the inventor of the "essence" is unquestionable, having regard to the use of a salt of iron, which is calculated to give a side of bacon an appearance of natural rustiness.

Two special laboratory inquiries during the year related to the production of light alcoholic beers. The results appeared in THE LANCET of March 26th and May 21st respectively. It is interesting to record that in both cases well-known brewing firms were concerned in placing upon the market malt liquors which are practically "temperance" in character.

Several "new inventions" involving analytical work in the laboratory were reported upon during the year.

The question of bleached flour, which has for some time engaged the attention of our laboratory, has come before the notice of the Local Government Board, and we were glad to learn that Mr. BURNS has directed an investigation into the matter by one of the inspectors of the Foods Department of the Local Government Board. In THE LANCET of May 28th we published a note on a simple test for bleached flour which is within the reach of the man in the street to apply.

We have again submitted to analysis and examination a number of quack remedies, and the results have been communicated to our correspondents.

During the year the work of special inquiries in THE LANCET Laboratory involved the making of 68 analytical determinations, whilst the figures of analysis appearing in our Analytical Records column amounted to 137. A very considerable number of analyses has in addition been made in regard to the unfinished investigations already referred to.

GENERAL MEDICAL COUNCIL.

The work of the General Council of Medical Education and Registration has been regularly chronicled in our columns throughout the year. At both the spring and autumn meetings a great deal of useful business was transacted.

The *personnel* of the Council has been altered in several respects. Mr. ARTHUR TREHERN NORTON is now the representative of the Apothecaries' Society of London, Sir WILLIAM WHITLA represents the Queen's University of Belfast, Sir ISAMBARD OWEN is the representative of the University of Bristol, and Dr. ARTHUR NEWSHOLME, Principal Medical Officer of the Local Government Board, has been nominated as a Crown member.

The summer meeting of the Council lasted from Tuesday, May 24th, to Saturday, May 28th inclusive. The PRESIDENT in his address was able to report that the Legislature of Prince Edward Island had passed an Act enforcing a five years' course of study at an approved university or school of medicine on candidates for qualifying examinations conducted by its Medical Council. The Executive Committee of the Council accordingly agreed to recognise the diplomas as registrable in the Colonial List. This is a step towards that reciprocity between Canada and England which all must desire, and which will be obtained presumably, if the representative authorities in the several provinces of Canada can come to a decision leading to federal action in regard to medical registration within the Dominion.

An interesting feature of those sittings which dealt with penal business was the presence of the British Medical Association as plaintiffs; the Association was represented by Mr. J. SMITH WHITAKER, the medical secretary, and Mr. HEMPSON, the solicitor.

There was a valuable debate upon medical education, and a report of the Examination Committee recommending that the licensing authorities should give instruction to students in ophthalmology, otology, and diseases of the throat, and that every candidate should be examined practically in these subjects, was referred to the Education Committee for consideration. At the winter session the Education Committee reported in recommendation of the practice of giving specialised instruction in otology and diseases of the throat. But the Committee did not think, in the present crowded state of the curriculum, that special courses and examinations should be made obligatory. They took the view that the subject should be included under the general headings of medicine and surgery.

The winter session commenced on Tuesday, Nov. 22nd, and terminated on Saturday, Nov. 26th. At this session the report of the Pharmacopœia Committee was adopted and showed that the annual sale of the Pharmacopœia continued steady as well as large, so that the volume will have to be reprinted.

The report of the Anæsthetics Committee, which was received by the Council at this meeting, was an important one. The Privy Council had transmitted to the General Medical Council for consideration a Memorandum and draft Bill, submitted to the HOME SECRETARY by Dr. FREDERIC HEWITT. The Memorandum discussed at length various points arising out of the administration of anæsthetics and suggested the rough draft of the Anæsthetics Bill, which was forwarded by the Privy Council and which will be found in THE LANCET of Dec. 3rd, 1910 (p. 1624). The Anæsthetics Committee recommended upon this Bill that the General Medical Council should communicate to the LORD PRESIDENT of the Privy Council certain observations on the draft Bill with most of which the whole medical profession will be in accord. The Committee found that the Bill gave practical effect to previous conclusions of the Council on the subject, and stated that they hoped it would speedily receive the

sanction of Parliament, while the Council would be prepared to suggest the terms of the necessary schedule specifying the drugs or substances described as anæsthetics, "including therein in the first instance nitrous oxide gas." The recommendations pointed out that the Bill did not provide for the prohibition of the application or administration by unqualified persons of dangerous anæsthetic drugs to unbroken surfaces; while the following recommendation led to some debate:—"That it is desirable that a provision should be introduced making it clear that a person registered under the Dentists' Act, 1878, is not prohibited from administering for a legally qualified medical practitioner one or more of the scheduled anæsthetics in connexion with an operation, act, or procedure other than dental conducted by such medical practitioner." This recommendation of the Anæsthetics Committee appears to us a little dangerous, and we fail to see for whose benefit it was made. The fact that the subject of anæsthetics is now regularly taught to all medical students ought to ensure a supply of medical men able to give gas for operations other than dental, while the patients to whom the dentist would be empowered by the recommendation in question to give gas would very often be in a different physical condition from that of the subject requiring dental forms of operation. We hope that the General Medical Council, whose opinion the Privy Council is certain to take, will reconsider this recommendation, though the matter is possibly not so important as some seem to believe, inasmuch as the dentist will not often be asked to discharge his suggested function.

An interesting debate at this session began in a proposal by Dr. H. A. LATIMER that the subject of professional ethics should be made an integral part of the medical curriculum. The motion was withdrawn, but we consider that Dr. LATIMER did good service in bringing the subject forward, for the discussion showed that the General Medical Council, the disciplinary body of the profession, were alive to the fact that positions might arise in professional life of considerable difficulty to the young medical man.

The last debate of the session was initiated by a report presented by Dr. J. Y. MACKAY from the Education Committee, which dealt with the medical curriculum and the preliminary education. The report was due to the resolution passed by the Council on Nov. 26th, 1909, referring to the Education Committee further consideration of the place in the student's career which the preliminary sciences should occupy. The committee was at the same time requested to frame and submit to the Council a pattern scheme of medical education whereby the required minimum of the several subjects to be included in the curriculum could be adequately studied and the requisite examinations thereon passed within the period prescribed by the curriculum. The report of the Education Committee accordingly furnished the Council with statistics as to the number of candidates who had sat at the first professional examination of the Conjoint Board of England on the strength of the school curriculum alone. It pointed out that the Conjoint Board, while recognising instruction in the preliminary sciences in institutions other than universities and medical schools—which they had done for 16 or 17 years—had only received for the first professional examination a very small proportion of students instructed in this manner, and this proportion came from the best schools of the country. The Education Committee considered that it was practically impossible to expect that the ordinary schools could at present take up the work of preparing schoolboys for the preliminary scientific examination of the medical curriculum. The report did not discuss the question whether the General Medical Council ought to recognise the schools which the Conjoint Board had already recognised, while in regard to the second matter referred to them they came to the conclusion that they could not determine upon a pattern scheme. Dr. MACKAY moved the adoption by the Council of the recommendation of the Committee, which was in the following terms: "That on and after the close of the year 1913 the following examinations be removed from the list of the preliminary examinations recognised by the Council as qualifying for entrance on the curriculum in medicine: The Junior Local Examination of the University of Oxford; the Junior Local Examination of the University of Cambridge; the College of Preceptors Preliminary Examination for Medical Students; the Educational Institute of Scotland Preliminary Examination; the Royal College of Physicians and Surgeons of Ireland Preliminary Examination; the Intermediate Education Board of Ireland Middle Grade Examination." At this point Sir HENRY MORRIS delivered an interesting speech, at the close of which he said that he was prepared to move the following: "That as the Education Committee in their report of Nov. 22nd, 1910, express views in favour of retaining the preliminary sciences (chemistry, physics, and biology) as subjects of the medical curriculum, it be referred to the Committee to consider and report to the Council as to the best way of amending the regulations of the General Medical Council in regard to the registration of medical students, with the objects (1) of making those regulations consistent with the report and with the powers of the Council; (2) of making clear the distinction between regulations which must be observed and recommendations made for the students' guidance; and (3) of the advisability of altering or deleting Regulation 12 on page 14 of the regulations printed under date June 1st, 1910." It was agreed to defer this motion until the summer session of 1911, while the recommendation of the Education Committee was adopted with the addition that communication would be made with the Commissioners of Intermediate Education in Ireland as to the possibility of establishing a satisfactory preliminary examination in education under the control of the Commissioners, which would be suitable to students intending to study medicine; an addition which was agreed to at once, as there is nothing in Ireland comparable to the leaving certificate in English schools. The recommendation of the Education Committee, which has now been adopted by the Council, will be welcomed by the schools as an educational advantage.

THE BRITISH MEDICAL ASSOCIATION.

The annual meeting of the British Medical Association took place this year in London under the presidency of Mr. BUTLIN, and was in every way a successful meeting. A large number of members attended the general gatherings, and the scientific work in the sections was made the subject of some interesting debates. The number of sections—namely, 21—was the largest as yet attempted, but the arrangements for the conduct of business were good and the necessary organisation worked well. All the sections could be accommodated in quarters which were in easy communication with each other, a matter of no small importance, as those who attend congresses know. The Representative meetings, which began on Friday, July 22nd, a week previous to the official date of the commencement of the annual meeting, were carried on in the chamber of the Court of Common Council in the Guildhall. At the opening meeting Mr. EDMUND OWEN, as Chairman of the Council of the Association, was able to announce the acceptance by His Majesty the KING of the post of Patron. Among the subjects debated by the Representatives at the meeting were Athleticism in Schools, the Organisation of a National Public Health Service, and the question of Poor-law Reform. The work of the sections and the official business of the Congress were conducted

in the buildings of the University of London, the Imperial Institute, the Imperial College of Science, and at the old College of Science, South Kensington—a group of buildings in close connexion with each other and allowing for easy arrangement of joint meetings when necessary, while medical men whose special interest lay, as often will happen, in several sections were able with a minimum of trouble to be present at each section as they wished. At the Annual Exhibition of drugs, surgical and electrical appliances, and special foods, which was held in the Imperial Institute Buildings, a great variety of exhibits were inspected by the visitors, while a new plan for pathological and other specimens was organised by the division of the medical museum into a number of sections, each under the care of an expert honorary curator. This was recognised as a valuable innovation.

Among very interesting debates in the different sections upon subjects of general and almost popular interest may be mentioned—the Operative Treatment of Simple Fractures, opened by Mr. ARBUTHNOT LANE; the Dosimetric Administration of Chloroform, opened by Dr. DUDLEY BUXTON; the Causes and Treatment of Dysmenorrhœa, opened by Dr. G. E. HERMANN; the Treatment of Chronic Constipation, opened by Dr. J. F. GOODHART; the Surgical Treatment of Exophthalmic Goitre, by Professor THEODORE KOCHER; State Sickness Insurance, opened by Mr. SMITH WHITAKER and Mr. C. S. LOCH; and the Need for Diplomas in Psychological Medicine, by Dr. D. G. THOMSON.

THE BENEVOLENT AGENCIES OF THE PROFESSION.

We review here, though very briefly, the work carried out by the benevolent agencies of the profession and remind our readers of their duty, which in the stress of professional work they sometimes forget, to see that the institutions which have been founded solely in their interests are adequately supported.

A large number of medical men who could easily afford to give an annual subscription of 1 guinea to one or more of the general benevolent societies do not contribute at all, as a glance at the reports of these societies will show, whilst the number of practitioners who could contribute a smaller subscription without feeling the loss, but who do not do so, is very much larger. We once again urge our readers to bear the claims of these benevolent agencies in mind, and to show their appreciation of the good work carried out in a practical manner. But whilst the general societies carry on a work the importance of which is increasing every year, it is the local institutions which we especially wish to see better supported, in view of the fact that relief can usually be obtained from them so much more expeditiously than in the case of large general societies, the grants made being frequently more or less substantial according to the needs of the cases.

So far as we can learn, there is not a single medical benevolent association in either Scotland or Wales, and the same must be said of many counties in England. Whilst acknowledging that there are generous contributors to the general medical charities living in these places, we feel that this deficiency in the scheme for the relief of necessitous members of our profession and their families ought not to be allowed to continue, and we look forward to the time when enthusiastic volunteers in these districts will take steps to inaugurate associations, and thus emulate the example of those who many years ago worked indefatigably to establish much-needed benevolent societies. The two latest accessions, the East and North Ridings of Yorkshire Medical Benevolent Society, founded in 1908, and the Sussex Medical Benevolent Society, founded in 1905, are both making satisfactory progress.

What is urgently required in the case of all benevolent agencies is zealous personal canvassing, together with explanation of the work that is being carried out. As a rule, printed letters of appeal prove of little use, hence the appointment of suitable local secretaries is to be strongly advocated.

The British Medical Benevolent Fund.

The report of this society is exceedingly favourable. The income in the grant department exceeded that of the previous year by £543, and in the annuity department by £83. Grants were made to 200 applicants, as compared with 185 the preceding year, the total amount expended in this way being £2078, as against £1727 in 1908. The sum received in legacies was £13,419. There are 127 annuitants, the large majority of whom receive £20 a year, the total amount expended in pensions being about £2520 annually. The Guild recently founded in connexion with the Fund, which is practically the ladies' branch of the society, is doing good work in the way of distributing clothes, visiting the beneficiaries of the Fund, and rendering other services of a personal character.

The Royal Medical Benevolent Fund Society of Ireland.

The treasurer's report shows that grants were awarded to 86 applicants, amounting in the aggregate to £1438, as compared with £1166 awarded to 83 applicants during the preceding year. In only one year since the foundation of the society have the grants awarded exceeded those of the year under review. Of those helped during the year, eight were between 70 and 80 years of age, and four were older still. The President of the Royal College of Physicians of Ireland, in moving the adoption of the report at the annual meeting, emphasised the fact that the religious beliefs of applicants had never been mentioned or considered in any way by members of the committee when recommending a grant. Simply the facts of the case were dealt with and if found deserving an award was granted.

The Royal Medical Foundation of Epsom College.

The annual report of the council states that there was a small surplus on the year's revenue. The fact is emphasised that in spite of past contributions to the endowment fund, including the sum of £51,076 recently received under the will of the late Dr. HENRY FEARNSIDE, a sum of nearly £5000 must be obtained by annual contributions if the council is to continue to maintain the full number of 50 pensionerships and 50 foundation scholarships. The pensions, which are all of £30 a year, are given by the governors to aged medical men or their widows. The foundation scholars, who are also elected by the governors, are necessitous sons of medical men, and receive an education of the highest class at Epsom College, together with clothing and board. The buildings have been extended and various improvements have been completed during the past few years at a cost of close upon £20,000, a considerable part of the money required being temporarily advanced by the bankers. Besides the pensionerships and foundation scholarships which are maintained out of the general funds, special endowments provide 28 other annuities of £30 a year, 14 supplementary pensions of £20 (to increase annuities to £50), and 11 presentations to the school of St. Anne's Society for daughters of medical men.

THE LANCET *Relief Fund.*

This Fund is sustained by an annual grant of at least £300 by the proprietors of THE LANCET, and is administered free of cost. The almoners are the President of the Royal College of Physicians of London, the President of the Royal College of Surgeons of England, the President of the General Medical Council, and the Editor of THE LANCET. The object of the Fund is to provide immediate pecuniary assistance in cases of emergency to registered medical practitioners, or in the event of their recent death to their widows

and orphans, but such help can only be rendered when permanent benefit is likely to result therefrom.

The twenty-first annual report of the almoners states that since the inauguration of the Fund in 1889 the sum of £6354 has been expended. During the year 1909 14 applicants were relieved by way of gifts or loans ranging from £10 to £25, involving an expenditure of £235. As usual, expressions of gratitude for the prompt assistance rendered were received by the almoners, such assistance having been given in some instances within a few hours of the receipt of the application; thus more than one home was kept together and the bread-winner enabled to continue to practise by the timely help of the Fund.

The Society for Relief of Widows and Orphans of Medical Men.

The report states that 16 new members were elected last year, 9 died, and 5 resigned. The total membership of the society is 291, which is but a very small proportion of the medical men who are eligible for membership. Considering that the invested funds amount to over £100,000, that the advantages offered are far greater than any that an insurance company could give, and that the subscription is only £2 2*s.* a year, it is difficult to understand why comparatively so small a number of medical men living within a radius of 20 miles from Charing Cross join this society. It may be added that one of three widows who died during the year under review had received a total sum in grants of £2900, in spite of the fact that her husband had paid in subscriptions only £6 6*s.* Further, one of the widows at present on the books has already received, since her election in 1854, over £2250.

Complete List of Benevolent Agencies.

For the information of our readers we give the name and address of the secretary or other executive officer of all the benevolent agencies of which we are cognisant, together with the amount of the subscription that entitles to membership:—The British Medical Benevolent Fund: Mr. W. E. SARGANT, St. Bartholomew's Hospital, E.C.; annual subscription 10*s.*, life donation £5. The Birmingham Medical Benevolent Society: Dr. J. E. H. SAWYER, 93, Cornwall-street, Birmingham; annual subscription 1 guinea. The Devon and Exeter Benevolent Medical Society: Mr. E. DOWN, Wingfield House, Stoke, Devonport; annual subscription 1 guinea, life donation 20 guineas. The East and North Ridings of Yorkshire Medical Benevolent Society: Dr. EDWARD TURTON, 1, Albion-street, Hull, and Mr. H. C. SHANN, Micklegate House, York; annual subscription 1 guinea. The Essex and Herts Benevolent Medical Society: Mr. VERNON AUSTIN, Hertford; annual subscription 1 guinea. The Kent Benevolent Medical Society: Mr. H. G. SADLER, J.P., 2, De Castro-terrace, Wincheap, Canterbury; Dr. C. E. HOAR, Montcalm, Maidstone; and Mr. H. C. BURTON, Lee Park Lodge, Blackheath, S.E.; annual subscription 1 guinea. THE LANCET Relief Fund, Mr. CHARLES GOOD, 1, Bedford-street, Strand, W.C. The Lincolnshire Medical Benevolent Society: Dr. W. A. CARLINE, Lincoln; annual subscription 1 guinea. The Norfolk and Norwich Benevolent Medical Society: Mr. C. J. MURIEL, 42, St. Giles-street, Norwich; admission fee 1 guinea, annual subscription 1 guinea, life donation 15 guineas. The Royal Medical Benevolent Fund Society of Ireland: Dr. CHARLES M. BENSON, 65, Lower Baggot-street, Dublin; annual subscription 1 guinea, life donation £10. The Royal Medical Foundation of Epsom College: Mr. J. BERNARD LAMB, 37, Soho-square, W.; annual subscription 1 guinea, life donation 10 guineas. The Society for Relief of Widows and Orphans of Medical Men: Mr. E. J. BLACKETT, 11, Chandos-street, Cavendish-square, W.; annual subscription 2 guineas, life membership 25 annual payments. The Surrey Medical Benevolent Society: Mr. W. A. BERRIDGE, 158, Station-road, Redhill, Surrey; entrance fine £5, annual subscription £2 (not payable for longer than 30 years), life donation £30, *plus* the entrance fine of £5. The Sussex Medical Benevolent Society: Dr. L. A. PARRY, 83, Church-road, Hove, Sussex; annual subscription 1 guinea. West Riding of Yorkshire Medical Charitable Society: Mr. G. H. ROWE, Lyddon Hall, Leeds; and Mr. M. A. TEALE, 4, Park-square, Leeds; annual subscription 1 guinea.

The officials of the above-mentioned societies will be happy to forward to applicants full particulars of the work that is being carried out.

HONOURS TO MEDICAL MEN.

The compilation of the list of those members of the medical profession, who have been selected during the year for honours, is a pleasant task; this year, however, the feeling of sadness arises from the fact that the hand which gave the earlier honours can do so no more. His Majesty the late KING EDWARD VII. was always a friend of the medical profession, and whenever merit was brought to his notice he never failed to signify the royal approval.

The Birthday Honours.

In the list of honours which was issued on the day set apart for the celebration of His late MAJESTY'S birthday medical men were well represented, and the list gave particular pleasure to our profession because on this occasion another medical name was added to the roll of the peerage, Sir WALTER FOSTER being created Lord ILKESTON. Dr. FRANCIS HENRY CHAMPNEYS was made a baronet, and knighthoods were conferred upon Dr. ARTHUR HENRY DOWNES, Mr. JOHN FAGAN, Dr. GEORGE HASTINGS, Dr. HENRY SIMPSON LUNN, Dr. DAVID CALDWELL MCVAIL, Dr. ROBERT MICHAEL SIMON, Surgeon Lieutenant-Colonel WARREN ROWLAND CROOKE-LAWLESS, C.I.E. (Coldstream Guards), and Inspector-General of Hospitals and Fleets JAMES PORTER, C.B. Lord ILKESTON is well known in the world of general and medical politics. He was for nearly a quarter of a century professor of medicine in Queen's College, Birmingham; was for many years a Direct Representative of the profession on the General Medical Council, and has been a powerful voice in the administration of the British Medical Association. In Parliament he was a practical success from the beginning of his career, and a member of a Liberal Government. At the general election in the early part of the year he resigned his safe seat for the Ilkeston division of Derbyshire. Sir FRANCIS HENRY CHAMPNEYS is the chairman of the Central Midwives Board, on which body he has sat continuously since its creation. His distinguished work in obstetric medicine is well known. Sir ARTHUR HENRY DOWNES, the Senior Medical Inspector for Poor-law Purposes to the Local Government Board, whose honour was won by strenuous and devoted work, was the only medical man on the recent Royal Commission on the Poor-law. He showed in a practical way, by an independent memorandum, that he appreciated the tremendous importance of the issues involved alike from the public, the departmental, and the professional view. Sir JOHN FAGAN is consulting surgeon to the Belfast Royal Hospital and to the Belfast Hospital for Sick Children, and was for many years inspector of reformatory and industrial schools for Ireland. Sir GEORGE HASTINGS is a well-known West-end practitioner; Sir HENRY SIMPSON LUNN is one of the great pioneers of continental travel; Sir DAVID CALDWELL MCVAIL is Crown member for Scotland of the General Medical Council and an authority on medical politics and education; and Sir ROBERT MICHAEL SIMON

is physician to the Birmingham General Hospital. Lieutenant-Colonel Sir WARREN R. CROOKE-LAWLESS is surgeon to H.E. the Viceroy of India, and Sir JAMES PORTER, K.C.B., is the Director-General of the Medical Department of the Royal Navy. Surgeon-General ARTHUR THOMAS SLOGGETT, A.M.S., C.M.G., Principal Medical Officer in India, and Surgeon-General OWEN EDWARD PENNEFATHER LLOYD, R.A.M.C., V.C., Principal Medical Officer in South Africa, were made Companions of the Order of the Bath; and Surgeon-General CHARLES PARDEY LUKIS, honorary surgeon to the Viceroy of India, Director-General of the Indian Medical Service, and an additional member of the Council of the Governor-General of India for making laws and regulations, received a Companionship of the Order of the Star of India. Dr. AUBREY DALLAS PERCIVAL HODGES, Principal Medical Officer in the Uganda Protectorate, received a Companionship of the Order of St. Michael and St. George in recognition of his services in the suppression of sleeping sickness. Colonel RODERICK MACRAE, I.M.S., lately Inspector-General of Civil Hospitals in Bengal, received a Companionship of the Order of the Indian Empire; and Captain ROBERT MCCARRISON, I.M.S., Agency Surgeon at Gilgit, and Dr. THEODORE LEIGHTON PENNELL, medical missionary at Bannu, North-West Frontier Province, received the Gold Medal of the Kaisar-i-Hind.

The Royal Victorian Order.

During the year Sir ALFRED PEARCE GOULD and Sir J. KINGSTON FOWLER were invested with the insignia of a Knight Commander of the Royal Victorian Order, and Fleet-Surgeon GEORGE TREVOR COLLINGWOOD, R.N., of the Royal Naval College, Osborne, was appointed a Member of the Fourth Class. Professor ROBERT KUTNER, Director of the Empress Frederick's Institute for Medical Education in Berlin, was appointed an Honorary Commander of the Order.

The Edward Medal.

The Edward Medal (Second Class) was presented to Mr. E. A. DANDO, Dr. CHARLES HARRIS, and Mr. W. TURNER. This honour was instituted by His late MAJESTY in order to distinguish the many heroic acts performed by civilians who endanger their own lives in endeavouring to save the lives of others.

Foreign Honours.

The KING of ITALY conferred the Order of Commander of the Crown of Italy upon Major G. S. CRAWFORD, R.A.M.C., and Knight of the same Order upon Captain H. S. ANDERSON, Captain H. C. WINKWORTH, and Captain P. A. JONES, of the Royal Army Medical Corps, and Surgeon-Captain R. RANDON, Royal Malta Artillery, in recognition of their services with the field ambulances which proceeded from Malta to the earthquake disasters in Sicily and Calabria in the early part of last year. Surgeon JAMES C. BRINGAN, R.N., also received the decoration of a Knight of the Order of the Crown of Italy in recognition of valuable services rendered by him on the occasion of the Messina earthquake. Dr. JOHN WARNOCK, Director of the Government Hospital for the Insane at Abbassia, received the Insignia of the Third Class of the Imperial Ottoman Order of the Osmanieh from the KHEDIVE of EGYPT, and Captain H. ENSOR, D.S.O., R.A.M.C., received the Insignia of the Fourth Class. Dr. EDWIN ROBERT WHEELER, medical officer to the British Consulate-General at Yokohama, received the Order of the Sacred Treasure of the Third Class, which was conferred upon him by His Majesty the EMPEROR of JAPAN; and Dr. HUGH CAMPBELL HIGHET, medical officer of health at Bangkok, received the Order of the White Elephant of the Third Class from His Majesty the KING of SIAM. Mr. B. C. BROOMHALL and Dr. E. H. EDWARDS have each received the Insignia of the Third Class of the First Division of the Imperial Chinese Order of the Double Dragon conferred upon them by the EMPEROR of CHINA.

HOSPITAL FUNDS.

Metropolitan Hospital Sunday Fund.

Under the presidency of Sir JOHN STUART KNILL, Bart., the late Lord Mayor, the year's collection reached a total of £71,550 8*s.* 8*d.*, the collections in the various places of worship amounting to £40,778, or £1635 more than in 1909. The Metropolitan Cathedral of St. Paul headed the list with £4483. The following are the largest collections from contributing churches and other places of worship:—Christ Church, Lancaster Gate, Rev. Prebendary GURDON, £951; St. Michael, Chester-square, Rev. J. GOUGH MCCORMICK, £721; St. Mary Abbots, Kensington, Rev. Prebendary PENNEFATHER, £493; St. Peter, Eaton-square, Rev. Prebendary STORRS, £486; Holy Trinity, Chelsea, Rev. H. R. GAMBLE, £465; St. George, Hanover-square, Rev. Prebendary ANDERSON, £345; St. Jude, South Kensington, Rev. Prebendary EARDLEY WILMOT, £331; St. Paul, Onslow-square, Rev. Prebendary WEBB-PEPLOE, £308; St. Paul, Knightsbridge, Rev. F. L. BOYD, £296; St. Mark, North Audley-street, Rev. H. P. CRONSHAW, £289; St. Peter, Cranley-gardens, Rev. W. S. SWAYNE, £282; St. John, Paddington, Rev. E. P. ANDERSON, £270; St. Nicholas, Chislehurst, Rev. J. LE STRANGE DAWSON, £266; Wimbledon Churches, Rev. J. ALLEN BELL, £205; St. Columba, Pont-street, Rev. A. FLEMING, D.D., £282; Theistic Church, Swallow-street, Rev. CHAS. VOYSEY, £204; West London Synagogue, Rev. M. JOSEPH, £331; Great Synagogue, the CHIEF RABBI, £239; Essex Church, Kensington, Rev. F. K. FREESTON, £274; Westminster Chapel, Rev. G. CAMPBELL MORGAN, £300; Brixton Independent Church, Rev. B. J. SNELL, £117; St. Paul's Presbyterian Church, Westbourne-grove, Rev. J. W. WALKER, £93; St. Andrew's Presbyterian Church, Frognal, Rev. R. MACLEOD, £130; Greek Church, Bayswater, the ARCHIMANDRITE, £91; Brompton Oratory, Rev. H. D. S. BOWDEN, £87; Church of the Immaculate Conception, Farm-street, Rev. C. NICHOLSON, £55; Victoria Park Christian Evidence Association, Mr. T. COLE, £60; Dutch Church, Austin Friars, Rev. S. B. DE LA FAILLE, £50; German Church, Camberwell, Rev. Professor HACKMANN, £52; Central Hill Baptist Church, Norwood, Rev. S. A. TIPPLE, £95; Wanstead Society of Friends, Mr. THEO. GODLEE, £27; Bromley, Kent, Wesleyan Church, Rev. W. WOOD, £35; and Gordon-square Catholic Apostolic Church, Mr. H. S. HUME, £30. From the estate of the late Mr. GEORGE HERRING the Fund received £26,903, and Mr. WILLIAM HERRING gave a donation of £1000. The expenses of management amounted to £3420; £4629 have been carried forward to next year, and the following sums have been awarded, viz.: £58,189 to 153 hospitals, £1047 to 12 institutions, £2270 to 59 dispensaries, and £1575 to 30 nursing associations. For surgical appliances the sum of £4640 has been appropriated, and by reason of the increasing demand for these appliances the proportion of the funds devoted to this purpose—viz., 5 per cent.—has been advanced to 7½ per cent.

King Edward's Hospital Fund.

In many ways the hospital world has sustained a severe blow by the death of KING EDWARD VII., but the Fund which bears his honoured name has continued to make excellent progress, the amount received by the Fund up to Dec. 10th, after payment of expenses, being £146,584 10*s.* The Committee of Distribution have been able to allocate £150,000 to London hospitals and £5000 to consumption sanatoriums, making a total of £155,000, as compared with £150,000 last year. It is estimated that the League of Mercy will be able to contribute about £20,000. His

Majesty KING GEORGE, like all the members of our Royal Family, has always taken the keenest interest in any work that has for its object the welfare of the sick poor, and his deep interest in the Fund which was founded by the late KING is increasingly shown, not only by the letter which was read at the annual meeting of the Fund held at St. James's Palace on Nov. 14th, in which he expressed his appreciation of the services of the Council of the Fund, over which he has presided for nine years, but also by the augmentation of his annual subscription from £500 to £1000. An additional mark of the Royal interest in the welfare of the Fund is the annual subscription of £100 given by the PRINCE OF WALES. The receipts for the year include an annual subscription of £5000 from Mr. WALTER MORRISON and an anonymous donation of £10,000. The report of the Distribution Committee shows that 106 hospitals have applied for grants as against 104 last year, while the number of convalescent homes applying for grants was 45 and the number of consumptive sanatoriums eight, as compared with 37 and 4 respectively last year. The inability of the nose, throat, and ear hospitals of London to combine in accordance with the recommendation of the Fund has resulted in a sum of money being set aside for these hospitals until such amalgamation takes place. The total sum held in reserve for this purpose now amounts to £7500, in addition to the capital grant promised by the Fund, which, under certain conditions, will amount to at least £10,000. An interesting feature of the report is the statement that a scheme has been prepared by the Convalescent Homes Committee for rendering a certain number of beds in consumption sanatoriums in the country available for patients direct from London hospitals, more especially from consumption hospitals which have no country branches of their own. The Distribution Committee has always viewed with special satisfaction the facilities possessed by consumption hospitals which have country branches for the transfer of suitable cases to surroundings more favourable to recovery; and it welcomes any practicable method by which more of such accommodation can be rendered available without charging the funds of a hospital with the necessity of providing for a large capital expenditure. Another matter of interest is the reference to coöperative purchase by groups of independent hospitals, a matter which has not been lost sight of by the Fund. Reference is also made in the report to the grant to St. George's Hospital which is withheld until the financial accounts between the hospital and its medical school are shown to be clear of any payment from the general funds on account of medical education. At the same time it is pointed out that the inquiries made by the committee as to the legitimacy of certain payments by the hospital out of general funds to the medical school confirm the statement in the annual report of the hospital that the payments in question were made on account of definite work done, chiefly pathological and bacteriological examinations, in connexion with the actual treatment of patients.

A committee consisting of Lord MERSEY as chairman, Lord NORTHCOTE, and the Bishop of STEPNEY has been appointed to consider the hospital out-patient question and will commence work early next year. The following are the terms of reference: "To consider and report generally as to the circumstances and conditions under which patients are admitted to the casualty and out-patient departments of the London voluntary hospitals, and especially as to what precautions are taken to prevent the admission of persons who are unsuitable, and as to whether adequate provision is made for the admission of such persons as are suitable; and to make such recommendations as may seem to them desirable." During the year the KING selected the Duke of TECK, Lord IVEAGH, and the Speaker of the House of Commons to be governors of the Fund until the time arrives when a new Royal President can be appointed.

Hospital Saturday Fund.

The annual income of the Hospital Saturday Fund, which was founded in 1873 for the purpose of obtaining help for the metropolitan hospitals and kindred institutions from those who were not reached through the operations of the Metropolitan Hospital Sunday Fund, now exceeds £30,000, which is obtained from some 8000 places of business. The annual report shows that help is obtained from practically every trade, friendly society, and club, the employés of the London County Council, the borough councils, the railway companies, the Metropolitan Water Board, the General Post Office, the Royal Arsenal, Woolwich; the Royal Small Arms Factory, Enfield Lock; the Royal Victoria Yard, Deptford; the Dock Companies, and so forth, and the members of the Metropolitan and City police. Since its foundation the Fund has collected and distributed among the medical charities of London £517,106. In recent years there have been about 200 participating institutions. The Fund, recognising the great importance of early treatment in cases of tuberculosis and other chest diseases, has endowed beds at the Benenden Sanatorium, Kent; at the Mount Vernon Hospital, Hampstead, and its sanatorium at Northwood; at the Fairlight Home, Hastings; and at the Eversfield Hospital, St. Leonards. Thirty-seven beds are at present endowed, the patients paying, as a rule, 7*s.* 6*d.* per week for the first six weeks, after which time the prices are arranged in accordance with the means of the patients and other circumstances. The sum thus received enables the Fund to assist many applicants who could not otherwise be relieved. During the present year the various departments of the Fund have made steady progress, and it is hoped that when the books are made up in January they will show a record collection for 1910. Up to Dec. 17th the total receipts of the Fund amounted to £23,536, as against £20,765 in the corresponding period of 1909.

THE ORGANISATION OF THE MEDICAL PROFESSION: LESSONS FROM ABROAD.

At the commencement of the year we reviewed the situation of the medical profession in regard to the organisations by which medical men might hope to defend their economical interests while upholding the dignity of the profession. The fact that insurance against sickness is compulsory in Germany and Austria has established the contract system by force of law throughout these two empires. This system is extending to other countries, and something similar may ultimately be adopted in Great Britain. Therefore the action taken by the medical profession abroad is of great and practical interest to us in this country, and we described the strength of the continental medical unions, alluding at the same time to some of their more notable struggles or strikes. Since the publication of these details perhaps the most cheering item of news was that relating to the admirable conduct of the members of the Medical Union of the Seine who were in practice in and about Paris during the great floods. The union at once passed a resolution placing all its funds at the disposal of medical men injured by the floods. Circulars offering financial help were sent out to 4000 medical practitioners, and the union foresaw the early depletion of its coffers. The very reverse happened. Of all the 4000, not one asked for anything for himself; but, on the other hand, many practitioners, several of them not belonging to the union at all, sent donations to the Medical Union funds, so as to assist in the work of relief. And though no medical man asked for help for himself, several practitioners

wrote describing the very distressful condition of some of their comrades, and suggested that they should be assisted. Not only were the furniture and belongings of many practitioners destroyed by the floods, but many of their patients were also financially damaged, if not ruined, so that the fees owing were not at all likely to be paid.

TOWN PLANNING AND RE-HOUSING: THE LESSON OF LIVERPOOL.

The ideas underlying the systematic planning of towns have been concretely realised at Liverpool, and we made a special investigation of the position there. Considering that at Liverpool the average death-rate for the ten years concluded in 1870 was 32·5 per 1000, and that this has now been reduced to less than 20 per 1000, there can be no doubt but that great sanitary improvements have been accomplished. Indeed, among these ameliorations may be mentioned not only the destruction of insanitary areas in central and congested districts, but the fact that the authorities did not wait for the Town Planning Act to take measures to prevent the creation of overcrowded districts in the as yet uninhabited surroundings of Liverpool. New thoroughfares, preserving fine old trees and varying in width from 80 to 114 feet, were described by our Sanitary Commissioner as having for their object not merely the securing of ample air and garden space for future dwellers, but as also aiming at lessening the vehicular traffic in the central parts of the city. For the present, in most instances 35 feet will suffice for carriage traffic and tram lines, so that the rest will be devoted to trees, side walks, and flower beds. Such will be the pleasant and wholesome character of the main thoroughfares of Greater Liverpool. This phase of the town planning, however, concerns the near future and does not explain the actual reduction in the death-rate, and the fact that the Liverpool slums are no longer the classic haunts of typhus fever, drunkenness, immorality, and crime also plays its part in a beneficent revolution. The descent in 1845 of some 80,000 Irish flying from the potato famine made the slums of Liverpool exceptionally bad that in one or two districts the death-rate was equal to 60 per 1000 per annum. To meet these evils an Act for the promotion of health in Liverpool was passed in 1846. Nothing else, however, was done; but in 1854 there was another Act preventing the construction of houses of a low type, though, unfortunately, very many such houses were already in existence. The next ten years marked no advance, but a local Act gave the corporation powers to acquire insanitary property in 1864, and much of the re-housing of Liverpool was carried out under this Act. The Act specified what sort of houses might be condemned, the details being presented to the grand jury at quarter sessions. After hearing the owner, the jury might sanction the pulling down of the houses, and the corporation could buy the land if, as was usually the case, the owner was willing to sell. Thus the city came to own much of the land on which the slums stood, and care has, of course, been taken that no more slums were built. But it was slow work. Of 22,000 houses that should have been condemned in 1864 only 7000 were actually demolished by 1883. One difficulty lay in the fact that only the bad houses and not the surrounding area could be demolished, and it was only later, under the Housing of the Working Classes Act of 1890, that whole areas could be dealt with. By the year 1902 a house-to-house inspection revealed the existence of still 9943 houses which were fit only for demolition. The Local Government Board, however, would not sanction further loans for this purpose until better re-housing provisions were made. Indeed, it is only recently that the policy of re-housing has become an integral part of the policy for dealing with insanitary areas, so that it took 20 years for re-housing reforms to get fairly under way. Now the corporation owns and lets more than 2000 tenements, which have over 5000 rooms and are occupied by some 8000 persons. The rents vary from 1*s*. 9*d*. per week for one-room tenements to 4*s*. 9*d*. to 5*s*. 6*d*. for three-room tenements. But there are thousands of families in Liverpool who have to subsist on 10*s*. a week; and among the poorer sections of the community for whom these housing schemes are intended 15*s*. to £1 a week is the exception rather than the rule. The rents for the corporation tenements are below the market value of such dwellings, therefore no tenant is admitted unless he can show that he inhabited formerly a house that had been demolished by the sanitary authority. The remarkable feature of the work accomplished more recently in Liverpool is the fact that the re-housing schemes have led to an awakening of self-respect and endeavour among the most forlorn section of the population which has not only reduced the death-rate of the city, but has also had a favourable influence on the statistical returns for crime, drunkenness, and assault.

THE EDINBURGH CONFERENCE ON TUBERCULOSIS.

The National Association for the Prevention of Tuberculosis made a new departure this year, for instead of holding its annual meeting in London it organised a Conference in Edinburgh. For some days before and after this Conference numerous meetings were held and lectures delivered all for the purpose of spreading instruction on whatever might help to prevent tuberculous diseases. In connexion with the Conference there was also a small exhibition, and numerous popular lectures were delivered, and by these means a good deal of valuable knowledge was disseminated among the population of Edinburgh. We reported the congress at considerable length. Some of the papers were excellent, and we published several of them in full and gave summaries of many others, but a good many of the communications had little reference to the subjects opened for discussion. There was a good discussion on the question of the treatment of tuberculosis among the working classes, and the possibility of State intervention was brought forward. The inadequacy of the measures taken in this country was indicated by the statement that there were only some 4000 beds in hospitals and asylums, and 3350 in Poor-law institutions available for the treatment of tuberculosis; about 7350 beds for perhaps 22,000 patients in the course of a year. But it is estimated that there are 60,000 new cases every year and some 350,000 cases remaining over from previous years. Consequently there is an estimated need of 30,000 beds more, and about £3,500,000 for preventive and curative treatment, and £3,000,000 for advanced cases, making a total annual tuberculosis budget of £6,500,000. No private charity can possibly cope with such a demand. A motion brought forward by Dr. J. C. MCVAIL was unanimously adopted calling the special attention of the Chancellor of the Exchequer, the Government, and Parliament to the importance of giving the prevention and treatment of tuberculosis a prominent place in the proposed scheme of invaliding and insurance.

SANITATION AND THE FEDERATION OF THE "SIX TOWNS."

After much dispute and delay the "Six Towns," once known as the "Five Towns," have been united in law as well as in fact. Formerly Burslem, Fenton, Hanley, Longton, Stoke, and Tunstall were separate places with very individual characteristics. But, enriched by the development of the Potteries, they have spread till they commingle, and obviously a single administration for what has become an

unbroken agglomeration of dwellings will be more effective and economical. It is not always easy to do the logical thing, and the people of the Potteries found this out when they set about to abolish six town councils, six town clerks, six medical officers of health, six borough surveyors, and many other functionaries who had served, some of them long and faithfully, their different municipal administrations. In spite of these and other difficulties, however, the new borough of Stoke-on-Trent came into existence on March 31st. There is only one borough council, but it has 104 members, representing a quarter of a million people. Such complex questions were bound to arise out of this sudden conversion of six towns into one that our Special Sanitary Commissioner went down to investigate the position as it affected public health, for there were six different systems of drainage and of sewage disposal. We were able to publish figures which showed that the incidence of typhoid fever and summer infantile diarrhœa coincided with the survival of privy cesspools and other insanitary closets. Thus, at Longton, in four years, there were 99 deaths from enteric fever. About a third of the houses had water-closets, yet only 7 of these deaths occurred in these houses, while the other 92 deaths took place in houses with insanitary domestic drainage, including 33 cesspools. At Hanley, fortunately, the cesspool system is, practically speaking, abolished. There are only 70 cesspools, while there are 6760 water-closets with proper flushing cisterns and 4000 cottage basin hand-flushed closets which are usually sanitary in construction but depend on the trouble taken to keep them in decent order. Wherever the system of drainage has been improved the infantile mortality has decreased, though it is still very high. This has been sometimes attributed to lead poisoning, but, at Longton, for instance, only 25 per cent. of the mothers in question went to work at the potteries where lead is employed. Also the greatest mortality occurs during the hot weather, and this is when insanitary conditions make themselves felt, while lead is as fatal in winter as in summer. The difficulty is to induce the adult workers to take the necessary precautions when handling the lead used to glaze china ware, and to teach mothers how to nurse and feed their children and keep them clean. One of the first results of amalgamating the six towns should be to systematise the distribution of water and to reduce its cost. This will greatly facilitate the abolishing of cesspools or privies and the substitution of cistern-flushed water-closets. Then the small, inefficient public abattoir which the town of Hanley built some time ago should be replaced by a large modern abattoir containing all the latest improvements, where not only would all the slaughtering be done under wholesome conditions, but the by-products treated in such a manner as to prevent any nuisance, while adding considerably to the profits of the undertaking.

OBITUARY.

From the beginning of this year up to and including our issue of Dec. 24th we have had the mournful duty of inserting in our columns special obituaries of well-known and highly appreciated medical men. With deep regret we also had to record the death of KING EDWARD VII. To the profession of medicine he was a staunch and helpful friend. In a brief biographical sketch we enumerated many occasions on which he publicly showed his appreciation of medicine and his certainty that in its scientific practice lay the solution of many of the social problems of the day.

Dr. T. DIXON SAVILL died at Algiers on Jan. 10th as a result of a fall from his horse and a fracture of the skull at the age of 53 He was physician to the West-End Hospital for Diseases of the Nervous System, and his various contributions to medicine proved him to be a man of great originality and knowledge. He was for many years a regular correspondent of THE LANCET, summarising for us the scientific debates at the more important medical societies. Dr. JOHN HOLMES JOY, who died on Jan. 4th, was a prominent practitioner of the Midlands. He was born in Dublin in 1842. He seems to have had an hereditary or intuitive knowledge of law, which made his work as a Commissioner of the Peace very valuable. Dr. GEORGE MORTON WILSON, who died on Jan. 6th, was a pioneer of the open-air treatment of tuberculosis. His sanatorium, opened about ten years ago, was one of the first three sanatoriums for Nordrach treatment in England. Dr. GEORGE SKENE KEITH died at the great age of 90, the attainment of which he himself attributed to his adoption of the simple regimen laid down both in his two essays entitled, "Fads of an Old Physician" and "A Plea for a Simpler Life," and in his "Papers on Sanitary and Other Matters," which made a considerable stir some 15 years ago. Dr. WILLIAM PAGE MAY, who died on Jan. 19th, was a Fellow of University College, London, and lecturer on the physiology of the nervous system at the College. In addition to his high scientific attainments, he was known as one of the kindest and most delightful of men, and his loss is keenly felt by a wide circle of friends. Dr. STANLEY BEAN ATKINSON was born in 1873. Besides his medical qualifications he held the degree of LL.M. Cantab., and was a member of the Inner Temple. He devoted his life to public service and settled himself at Mile-End, where he interested himself in the social progress of its inhabitants. Mr. CONNELL WHIPPLE died on Jan. 21st in his sixty-eighth year. He was consulting surgeon to the South Devon and East Cornwall Hospital, having been an acting member of the honorary staff for about 35 years. Mr. WILLIAM WARWICK WAGSTAFFE, who died on Jan. 22nd, was born in 1843. He was educated at Epsom College and subsequently at St. Thomas's Hospital, where, after holding the post of resident surgeon, he was appointed lecturer on anatomy in the medical school. In 1878 a sudden breakdown in health necessitated a period of rest abroad, and he was never able to return to active work. Mr. WILLIAM ILBERT HANCOCK, whose untimely and sudden death occurred on Jan. 26th, was born in 1873. He was assistant surgeon to the Royal London Ophthalmic Hospital. He possessed a charming personality and had been a fine athlete. Dr. HAROLD JAMES CROMPTON, one of the medical officers of the County Asylum, Prestwich, Manchester, died on Jan. 28th at the age of 37.

Sir CHARLES HAYES MARRIOTT, consulting surgeon to the Leicester Infirmary, died on Feb. 14th, aged 75. Mr. THOMAS KILNER CLARKE died at the age of 66. He was a leading consultant in Huddersfield and a wide area round it. Dr. JOHN W. TAYLOR, who died on Feb. 27th, was born in 1851. He was professor of gynæcology in the University of Birmingham. He was president of the British Gynæcological Society in 1904, and in 1898 delivered the Ingleby lectures on Extra-uterine Pregnancy. Dr. JAMES HENRY RICHARDSON, who died on Jan. 15th, was born in 1823. He was at one time professor of anatomy in the University of Toronto. He was also a member of the first staff of the Toronto General Hospital, which was founded in 1854, and was the last survivor of the original body. Dr. A. W. WHEATLY of South Kensington died on Feb. 13th at the age of 54. Dr. AUGUSTIN LE ROSSIGNOL died on Feb. 18th. He was born in 1842 and was one of the oldest practitioners in Jersey.

Professor EDWARD PERCEVAL WRIGHT, who died on March 2nd, aged 76, was professor of botany at Trinity College, Dublin, and in the advanced years of his life he combined enthusiasm for antiquarian research with unfaltering zeal for vegetable and animal biology. Dr. WALTER

BUTLER CHEADLE, who died on March 25th, was born in 1836. He was consulting physician to St. Mary's Hospital and to the Hospital for Sick Children, Great Ormond-street. His manner with children was particularly charming. In 1888 he delivered the classical Harveian lectures upon Rheumatism in Childhood. Dr. CHARLES ERNEST MACKENZIE KELLY died at Witney, Oxon, on March 28th. Dr. GEORGE CARPENTER, who died on March 27th, was born in 1859. He was physician to the Queen's Hospital for Children. Mr. FREDERIC VICTOR MILWARD died on March 31st, aged 39. He was assistant surgeon to the General Hospital, Birmingham, and surgeon to the Orthopædic Hospital and to the Children's Hospital in that city. Dr. STEWART LOCKIE, who died on April 18th, was born in 1836. He was consulting physician to Cumberland Infirmary. Mr. HERBERT NELSON CAPPE died on April 22nd, aged 44. He was one of the medical officers at Netherne. Dr. EDWARD CRESSWELL BABER died on May 14th, aged 59. He was well known in Brighton and Hove, where he was senior surgeon to the Brighton and Sussex Throat and Ear Hospital. Dr. HEINRICH CURSCHMANN, who died in May, was professor of medicine and director of the Medical Clinic in the University of Leipsic.

Professor ROBERT KOCH, one of a small group of pre-eminent men of science, also being members of the medical profession, died on May 27th, having been born in 1843. He was honorary professor of the Institute of Infectious Diseases, Berlin, and a Privy Councillor of the German Empire. In 1882 he took the medical world by storm, for he read a paper on the Etiology of Tuberculosis, wherein he stated that the disease was an infectious one and was caused by a bacillus, thus dominating the whole field of research in regard to tuberculous disease. The criteria or postulates which he enunciated as to the specificity of a micro-organism in relation to disease have become classical. Mr. RUSSELL STEELE, who died on May 18th, was consulting surgeon to the West Herts County Hospital. He was born in 1847, and practised at Hemel Hempstead. Mr. WILLIAM HOWELLS RIX, who died on May 24th, at the age of 74, was consulting surgeon to the Tunbridge Wells General Hospital. Mr. FREDERICK CHARLES HITCHINS, who died on May 8th, aged 38, was well known at St. Austell, Cornwall.

Sir FRANCIS SEYMOUR HADEN, who died on June 1st, was born in 1818. At the age of 33 he was appointed to be honorary surgeon to the then Government Department of Science and Art. His report in connexion with that department upon the progress of modern surgery brought him first into prominence. This report was issued for the International Exhibition of 1862, and gave an exhaustive history of operative surgery of the decade 1852–62. In 1867 he devoted himself to etching, and he was recognised by connoisseurs and artists to be a remarkable executant, and many of his compositions had a beauty which demands for its appreciation neither technical knowledge nor critical faculty. Mr. WILLIAM ROSE, who died in the early part of June, was born in 1847. He was emeritus professor of surgery in King's College and consulting surgeon to King's College Hospital. He was part author of one of the most popular text-books on surgery. His various contributions to surgical literature displayed him as a careful, skilful, practical surgeon. Dr. ELIZABETH BLACKWELL, who died on May 31st in her ninetieth year, was the first woman to obtain a place upon the English Medical Register. During the civil war in America she took a leading part in arranging for the nursing of the wounded. When a medical school was founded in New York she was invited to occupy a chair, and became professor of hygiene. On returning to England she joined the staff of the New Hospital for Women, and held the chair of gynæcology in the London School of Medicine for Women. Dr. W. H. SPENCER died on May 27th, aged 72. At one time he was consulting physician to the Bristol Royal Infirmary. Dr. ARTHUR JOHN SHARP, who died on June 6th, was born in 1867. He practised at Whitby for eight years. He subsequently moved to Nottingham, and also held the appointment of assistant medical officer to the Sheffield education authorities. Mr. FRANCIS EDWARD CANE died in May at the age of 55. He was divisional surgeon of the metropolitan police for the Edmonton district. Dr. SAMUEL BUCKLEY died on May 30th at the age of 64. He was consulting physician to the Manchester Northern Hospital for Diseases of Women and Children. He was also an ex-president of most of the medical societies of Manchester and of the North of England Obstetrical and Gynæcological Society. Dr. THOMAS EDWARD SMYTH, honorary surgeon to the Tavistock Cottage Hospital, died on June 28th at the age of 46. Mr. JAMES STARTIN died on June 2nd at the age of 58. He was senior surgeon and lecturer at the London Skin Hospital, Fitzroy-square. Dr. CLAUD MUIRHEAD, who died suddenly on June 22nd, was in his seventy-fifth year. He was consulting physician to the Royal Infirmary, Edinburgh, and one of the senior members of the medical profession in Edinburgh. HERBERT ROTHWELL GREENE PASHA, who died on June 4th, had a distinguished military and official career. He had acted as Director of the Egyptian Sanitary Department.

Dr. JOHN BART ROUS, who died in July, was born in 1878. After serving as house physician at St. Mary's Hospital, he forsook the paths of clinical medicine and became a member of the editorial staff of THE LANCET, who will long continue to deplore his untimely death. Our pages, during the past two years in particular, contain many examples of his wide range of general and scientific knowledge and of his literary charm and dexterity. Dr. GEORGE DANFORD THOMAS died on August 5th at the age of 63. As coroner for Central London he obtained the sincere regard of all who met him in the discharge of his important office. Numerous practitioners could testify to his excellent qualities in the examination of witnesses, the instruction of the jury, and to his unfailing courtesy to the medical profession, whose services he was most punctilious in requiting. Mr. J. E. PLATT, who died in the early part of August, was born in 1866. He was surgeon to the Royal Infirmary, Manchester, and lecturer on practical surgery at the Victoria University. He was regarded as one of the most brilliant students of the school and won many academic distinctions. As a surgeon, his work was characterised by extreme carefulness and attention to detail, qualities which, above all others, ensured the excellence of his results. Mr. WILLIAM BERRY, who died on July 29th, was born in 1874. He was medical officer of health of Wigan. He was surgeon to the infirmary in that town, and acquired a high reputation for his dexterity in abdominal surgery. Mr. FREDERICK WEATHERLY, who died on August 11th, aged 90, was a well-known practitioner at Portishead in Somerset. Dr. MARY ADAMSON MARSHALL died on August 8th at the age of 74. She was at one time senior physician to the New Hospital for Women, Marylebone.

Sir CONSTANTINE HOLMAN died on August 18th in his eighty-first year. He practised for many years at Reigate, and then came to London and became treasurer to Epsom College and to the Royal Medical Foundation attached to it. It is impossible to speak in too high terms of his services to these institutions and to the British Medical Association. Dr. JOSEPH NELSON, who died on August 31st in his seventieth year, was a well-known ophthalmic surgeon in

Belfast. He was one of the well-known ten of our countrymen associated with the movement for the liberation of Italy in 1860. Mr. JOHN LANGTON died on Sept. 11th, aged 70. He was consulting surgeon to St. Bartholomew's Hospital, to the City of London Lying-in Hospital, the Tottenham Hospital, the Friedenheim Home for the Dying, and the Mildmay Memorial Hospital. For nearly 40 years he was surgeon to the City of London Truss Society. For many years he was treasurer of the Medical Society, and subsequently president. He took a leading part in the formation and welfare of the Royal British Nurses' Association. Dr. LOMBE ATTHILL, who died suddenly at Strood Station, Rochester, on Sept. 14th at the age of 83, was senior Fellow and a past President of the Royal College of Physicians of Ireland and a past Master of the Rotunda Hospital. He was also President of the Royal Academy of Medicine in Ireland. He accomplished radical changes at the Rotunda Hospital, helping to bring the institution into its present state of excellence. Deputy-Surgeon-General JOHN LISTON PAUL, who died on August 25th, was born in 1827. In 1851 he entered the medical service of the Madras Army, and subsequently held the position of professor of surgery in the Madras Medical College. He was also surgeon to the Madras General Hospital. Dr. EMILY BLACKWELL, who died on Sept. 8th, was born in 1826. She received her professional education in the hospitals of New York, Edinburgh, Paris, and London. After the Civil War in America she became dean of the Women's Medical College in New York, and coöperated with her sister, Dr. ELIZABETH BLACKWELL, in founding and carrying on the New York Hospital for Women and Children.

Mr. CECIL HUNTINGTON LEAF died on Oct. 5th at the age of 46. He was surgeon to the Cancer Hospital, Brompton, and to the Gordon Hospital for Diseases of the Rectum. He wrote a valuable work on the Surgical Anatomy of the Lymphatic Glands. Dr. JOHN ANDERSON, who died on Oct. 10th, was born in 1840. Entering the Army Medical Service in 1864, he served for many years in India. On his return home he served in Edinburgh and at Camberley in connexion with the Royal Military College. He went back to India in a dignified and responsible capacity, for he was specially selected by the late Marquis of Ripon for his personal staff. He was subsequently made a Companion of the Indian Empire. Professor ERNST VON LEYDEN, who died in October, was born in 1832. He was formerly professor of clinical medicine and director of the First Medical Clinic of the University of Berlin. His earlier studies were devoted to diseases of the nervous system, but his work extended to many other departments of medicine. He took a prominent part in schemes for the prevention of tuberculosis, and was one of the presidents of the Central Committee on Tuberculosis. Mr. CHARLES HANLEN GAMBLE, who died in October, was born in 1825. He was consulting surgeon to the North Devon Infirmary. He practised in Barnstaple for about 60 years. Dr. DAVID HALKET STIRLING died on Oct. 14th. He served on the staff of the Royal Infirmary, Perth.

Dr. SIDNEY RINGER died on Oct. 14th at the age of 75. His professional career was closely associated with University College Hospital, at which institution he held every medical post, and where he was at the time of his death emeritus professor of medicine. In 1869 appeared his well-known "Handbook of Therapeutics," which in many directions revolutionised the sciences of which it treated. Dr. M. KRÖNLEIN, who died on Oct. 25th, was born in 1846. For 29 years he occupied the position of teacher of clinical surgery at the University of Zürich. Dr. LANCEREAUX, who died in November, was 80 years of age. He published a considerable number of works, including an "Atlas of Pathological Anatomy," an "Historical and Practical Treatise on Syphilis," and "A Treatise on Pathological Anatomy." One of his most important discoveries was the relationship between diabetes and disease of the pancreas. Dr. VIOLET ACKROYD TURKHUD died on Oct. 18th. She practised in Bombay and had made a thorough study of diseases of the tropics. Dr. JOSEPH FRANK PAYNE died on Nov. 16th in the seventieth year of his age. He was consulting physician to St. Thomas's Hospital. In 1874 he was Goulstonian lecturer at the Royal College of Physicians of London. This was the beginning of a very close connexion with the College, where he was Lumleian lecturer in 1891, Harveian orator in 1896, and Fitz Patrick lecturer in 1903 and 1904, and was appointed Harveian librarian in 1899. Senator ANGELO MOSSO died on Nov. 24th in Turin at the age of 64. He played many parts in the domain of biology, and amongst other investigations carried out some researches on the phenomena of respiration at altitudes above the snow-line. Dr. THOMAS FRANCIS SPITTAL CAVERHILL died on Nov. 4th. For many years he was medical officer of health of the county of Haddington. Dr. THOMAS NADAULD BRUSHFIELD died on Nov. 28th at the age of 81. He was for many years superintendent of the Surrey County Asylum at Brookwood and was a well-known antiquarian. Dr. EDWARD HENRY BRIEN died on Nov. 24th at the age of 52. He was a prominent practitioner at Birkenhead.

Mr. WILLIAM HENRY HORROCKS, who died this month at the age of 53, was senior honorary surgeon to the Bradford Royal Infirmary. He was chairman of the Bradford division of the British Medical Association. Among other deaths claimed by December may be mentioned those of the venerable Dr. JAMES E. POLLOCK, consulting physician to the Brompton Hospital for Consumption; of Mr. WILLIAM H. C. STAVELEY, a well-known London practitioner; and of Dr. H. HUCHARD, of Paris, a high authority on cardiac disease; and of Professor FRANZ KÖNIG, an ex-professor of surgery at the University of Berlin and the author of a well known treatise on surgery.

LITERARY INTELLIGENCE.—*Knowledge* for December contains an article by Dr. Reginald Morton on the X rays, which gives a lucid statement, tracing the evolution of our present knowledge concerning these rays, and rendering the general purpose and mode of their application understandable by the untechnical reader. The article is freely illustrated, but the illustrations of the tubes used, especially of the modern X ray tube, would have been more useful had an explanatory note been appended. As these figures are not specifically referred to in the text, their comprehension necessitates some practical acquaintance with the very subject of which it is the purpose of the article to expound the principia. In the same journal appears an article by Mr. John Gray on the measurement of perseveration and its value as an index of mental character. The same commendations for lucidity must be accorded to this article also. The phenomena and nature of the persistence of sensation after cessation of the stimulus are described, and the relation between such persistence and mental characteristics is explained in terms that must be clear to any intelligent reader. The apparatus devised by the author for measuring the persistence of sensation is figured and described. There is to be noted, however, an instance of what we consider a prevailing vice among scientific investigators. On the basis of the examination of 82 men and 26 women an attempt is made to determine whether there exists any coefficient of difference between the average perseveration of the two sexes, by comparing their respective means as deduced from the two before-mentioned groups. Any mean drawn from any number of observations is good only *pro tanto*, increasing or decreasing in value in direct ratio with the number of instances from which the mean is deduced. To compare two means, therefore, deduced respectively from three times as many members of one group as of the other is to ignore the law of the *écart* and to lay oneself open to unexpected failure. Yet this practice is very commonly followed.

Annotations.

"Ne quid nimis."

THE INFLUENCE OF TOBACCO ON DIGESTION.

A MEDICAL correspondent, who is also a discreet smoker, sends us the following interesting communication: "The act of smoking, comprising as it does the introduction into the mouth of pungent products of combustion, excites the flow of saliva, and as salivation is only the first of a series of digestive reflexes, once the process is started the apparatus as a whole follows suit. Pawlow has shown that the sight of food or the introduction of bitters into the mouth not only stimulates the salivary glands but causes the secretion of very active gastric juice. This is particularly noticeable in the subjects of hyperacidity, in whom smoking will determine heartburn and stomach cramp. It follows that smoking immediately after a meal, which is usually condemned and consistently practised, is not necessarily injurious; indeed, in hypopeptic subjects it may prove beneficial by virtue of its excito-secretory action. In acid dyspepsia, on the contrary, it is unquestionably injurious since its influence tends to aggravate any pre-existing acidity. Moreover, great acidity of the stomach contents may delay the evacuation of that organ *vié* the pylorus, and in sensitive subjects may cause a feeling of distressing distension. Such subjects ought, therefore, to postpone indulgence in tobacco until gastric digestion is well advanced, and if they suffer from the 'delayed' pain indicative of hyperacidity they should discontinue smoking altogether. Of course, the more copious the meal the less is the resulting inconvenience, because the excess of acid is neutralised by the excess of food. The desire for tobacco that is felt by many after a hearty meal is no doubt due to its stimulating influence on gastric secretion, and the comfort that follows indulgence is, in part at any rate, attributable to the extra fillip given to digestion. From this point of view the action of tobacco is preferable to that of a liqueur, which is a direct irritant. Smoking just before meals is to be deprecated, because the pungency of the pyroligneous products contained in tobacco-smoke renders the buccal mucosa insensitive to alimentary stimulation—in fact, their effect is to dull or abolish the olfacto-gustatory reflex, thus depriving us of what Pawlow calls 'appetite juice.' Moreover, by exhausting the salivary secretion, smoking before meals prevents the physiological action of the saliva on starchy foods." Our correspondent adds that smoking just before going to bed is often followed by insomnia, because the stomach contains a quantity of unneutralised juice, which irritates the mucosa and gives rise to a sensation of hunger. This distressing consequence may be averted by taking either some light food or a little bicarbonate of soda before retiring to rest in order to neutralise the secretion; but our suggestion here is that a habit, however pleasant, which leads to a distinct pathological condition requiring therapeutic treatment, ought to be censured by a medical man.

THE PUBLIC DRINKING CUP.

IN the United States of America public opinion is ripening for a campaign against the public drinking cup. These cups, attached by chains to the fountains in the streets, are sources of considerable peril, especially to children. The probabilities are that the majority of adults rinse out the metallic cups before drinking out of them, but children, whether using similar cups placed in their playgrounds or drinking from the street fountains, seldom take this precaution. Hot from a run or a game, they snatch up the cup and take a hasty drink without any preliminary rinsing out, and thus pathological conditions may be communicated from one to the other which, even in the intimacy of school life, had hitherto escaped dissemination. So obvious is this fact that several of the American States have passed laws abolishing such cups. In railway cars or at stations there are no cups; the railway servants have been supplied with cups to carry about with them, and every traveller in these States must make similar provison for his needs, inconvenient though it may be. To escape the difficulty some persons provide themselves with paper cups, which can be thrown away when they have been used, while there is also a device by which chained cups can still be employed, but without danger, called the "bubbling cup." Here a cup is attached to the fountain, but it has to be placed in such a position that the water perpetually flows into the cup and over the rim, so that all the time the cup is not being used it is being washed. The objection is the waste of water, but in many of the existing fountains the water runs perpetually, and the cups might only be attached to such fountains. The question of chained drinking cups in schools has been investigated, and it has been found that in many cases cups have not been cleaned for several months. In some cases there were dents in the bottom of the cup where a sufficiently large quantity of dirt was deposited for it to be possible to pick out and examine the accumulations. The microscope revealed that they consisted of mud, epithelium, and bacteria. With compulsory education it has become the bare duty of all concerned in school management to see that the children do not infect each other, and however trivial a precaution may seem it should be taken. To provide a system of common drinking cups in schools that shall be safe may not be easy, but to ensure the cups being regularly boiled ought to be no real trouble to anyone.

THE annual general meeting and conversazione of the Harveian Society will be held at the society's rooms in Tichborne-street on Thursday next, Jan. 5th. The retiring President, Dr. Montagu Handfield-Jones, will deliver an address on Science and Practice. A smoking concert will follow.

THE supplement to the thirty-ninth annual report of the Local Government Board, 1909–10, containing the report of the principal medical officer of the Board, has just been issued, and may be obtained at the price of 3*s*. 7*d*. from Messrs. Wyman and Sons, London; Messrs. Oliver and Boyd, Edinburgh; and Messrs. E. Ponsonby, Dublin.

THE Governor of Mauritius has reported to the Secretary of State for the Colonies, under date Dec. 23rd, 1910, that 27 cases of plague occurred during the week ended Dec. 22nd.

THE PUBLIC HEALTH IN NATAL.[1]

THE vital statistics of Natal for the year 1909 show a diminution in the European population as compared with the previous year; this was not due to any excessive mortality, but to the fact that there is a continual loss by emigration, which amounted in the year under review to 12,770. Dr. Ernest Hill, the health officer, gives no explanation for this, on the face of it, unsatisfactory feature in the polity of the colony, or—as it now is—province. He draws some consolation from the fact that the loss of population has fallen entirely on the towns (Durban and Maritzburg), the number of those engaged in utilising the resources of nature on the land having considerably increased. In 1904 a census was taken, and the population was 101,183; the estimated population, as at June 30th, 1909, was 98,934. It is pointed out that 30 days are allowed by law for the registration of death

[1] Report of the Health Officer for the Colony of Natal, 1909.

and that therefore deaths by violence, poison, &c., may occur, and burial take place, without any opportunity of inquiry. In some towns by-laws are in force requiring the production of a medical certificate before burial, and a draft Bill to secure proper registration of births, deaths, and marriages has been considered by the Government, but has not yet been brought before Parliament. It is to be hoped that, now the Union has been accomplished, there will be no further delay in passing this necessary enactment.

Another unsatisfactory feature is the steadily diminishing European birth-rate: in 1904 this stood at 31·1 per 1000; in 1909 it was 27·2. It is true that this is a higher figure than is registered in some other of our oversea dominions, but Dr. Hill points out that in Natal the sex distribution of the population is more favourable to a high birth-rate than it was six years ago. The death-rate for Europeans continues to decrease, and in 1909 was only 8·14 per 1000, the lowest on record. Maritzburg had a high rate of mortality (9·81) compared with Durban (7·44); this latter figure was also not only lower than the rate for the Colony generally, but lower even than the rate for rural populations (7·95).

Diarrhœal diseases were the most frequent cause of death, the ratio per 1000 inhabitants having been 0·75; this, however, was lower than in any year since 1904, when it was as high as 1·62. Tuberculosis of the lungs, meninges, &c., caused 0·6 death per 1000, and cancer 0·64. Small-pox is happily non-existent in Natal among Europeans, no death having occurred since 1904. Enteric fever also has materially diminished in recent years, the mortality having fallen to 0·19 in 1909.

The infantile mortality under one year shows a very welcome improvement, both as regards deaths from all causes (56·79 per 1000 births) and deaths from diarrhœal diseases (15·96), these ratios being lower than any previously recorded. Dr. Hill draws attention to the difference between Maritzburg and Durban, as shown by seven years' statistics; in the former town over 80 per cent. of the infantile diarrhœal deaths occurred in the five months of hot weather, and less than 4 per cent. in the four months of lowest incidence, whereas at Durban the deaths from this cause are distributed throughout the year. The minimum at Maritzburg occurs in midwinter; the maximum (in October) does not correspond to the period of maximum temperature (which comes in January), but to a time of moderate warmth, fair amount of rain, and great prevalence of flies. As the weather gets hotter there are more rain, less wind, and fewer flies. Durban, being on the coast, has a moist as well as warm climate nearly all the year round; there is no period of immunity from conditions favourable to diarrhœal disease. The diarrhœal death-rate ought to be lower in Maritzburg than in Durban, but on an average it has been 35 per cent. higher. Dr. Hill considers this to be a well-marked instance of the effects of good and bad sanitary administration respectively. Durban has had a water-carriage system of sewage removal for many years in most parts of the town, and is now completely served in that way; in Maritzburg pail closets only are in use, and these are emptied twice, or in some districts once only, in each week.

Enteric fever in Natal has diminished very markedly in recent years, the number of cases notified, which were 726 and 919 in 1902 and 1903, having fallen to 161 and 160 in 1908 and 1909. The deaths, which were 72 and 84 in 1902 and 1903, have dropped to 20 and 19 in 1908 and 1909. There was a small outbreak of ten cases at the Agricultural College, Cedara (apparently due to carrier infection); and at the South African Whaling Station, on the Bluff, there were five cases; otherwise there was nothing in the shape of an epidemic.

The diarrhœal death-rate for the general European population has improved greatly in recent years, the death-rate per 1000 having fallen steadily from 2·46 in 1902 to 0·75 in 1909; this has been largely due to improvement in sanitary conditions, resulting from better supervision and administration. The mortality from phthisis is lessening, though not rapidly; in 1905 very nearly half the deaths, as to which information was obtained, were of persons resident in the colony less than three years; in 1909 only two out of 31 who died had been less than three years in the colony. "This indicates that far fewer persons suffering from advanced consumption come to this country as a last hope; but, on the other hand, it also indicates a greater incidence of phthisis on the normal population, which will require very close attention in the future." Vaccination is in a very unsatisfactory condition: the "conscientious objector" flourishes.

In Natal there is a population of Indian immigrants slightly exceeding in numbers the Europeans, and amounting on June 30th, 1909, to 103,906. Their death-rate has been decreasing slowly, but in 1909 was 16·09 per 1000, or nearly double that of the Europeans. The chief causes of death have been pneumonia (2·12 per 1000), diarrhœal diseases (1·8), and tuberculosis of lungs (1·53). Ankylostomiasis caused 16 deaths, as compared with 29 in 1908; at the beginning of the year the number of indentured Indians discharging ova was found to be 60 per cent. of those examined, while in November and December it did not reach 15 per cent. Restriction was enforced on the allotment of new arrivals; microscopic examination of fæces was carried out, and remedies given where required. Owing to representations that the restrictions on landing were seriously interfering with the recruiting for labour the Board of Health advised that they might be relaxed, provided the Immigration Trust Board undertook that the infected persons should receive treatment, and the sanitary conditions of the Indian barracks be improved. The results were satisfactory.

The Native population is estimated at 996,445, of whom 767,336 live in Natal proper and 229,109 in Zululand. Tuberculosis and syphilis are prevalent. Leprosy exists to a limited extent; Dr. Hill estimates the total number of persons affected to be about 450, of whom 66 are segregated in a "location" at Amatikulu.

CENTRAL MIDWIVES BOARD.

THE report on the work of the Board for the year ending March 31st, 1910, states that the names on the Midwives Roll at that date amounted to 29,209, an increase for the year of 1928. Of the total, 8147 had passed the Board's examination and 9643 were admitted to the Roll in virtue of prior certification under Section 2 of the Midwives Act. The total number of trained midwives was therefore 17,790, as against 11,419 untrained, the percentages being 61 and 39. Owing to the incompleteness of the returns made by the local supervising authorities it was impossible to estimate with accuracy the respective proportions in the case of practising midwives. A large percentage of the trained women obtained their certificate without any intention of ever practising, many others had ceased to do so, and a considerable number practised in the colonies or in foreign countries. There was no doubt that at the present time the untrained practising midwives were largely in excess of the trained.

The Board's memorandum on the meaning of the words "personally delivering," occurring in Rule C, 1 (1), sent to all the recognised training schools in January, 1909, has had a good effect in securing more careful observance of the requirements of the rule. An instance having occurred in which a training school was found to have neglected to pay due attention to the terms of the Board's circular, the training school was in consequence removed from the list of institutions in which midwives may be trained. At a subsequent date, the Board being satisfied that the rule was being strictly complied with, the institution was restored to the list.

The penal procedure of the Board as laid down in Rule D had been under consideration during the year. The rule provides that "the secretary, or other person appointed by the Board for the purpose," shall conduct the case on the hearing by the Board of a charge of malpractice, negligence, or misconduct against a midwife in respect of which a local supervising authority has found a *primâ facie* case to be established. In some cases the local supervising authority has claimed to have the conduct of the case, and, as in the opinion of the Board this would introduce confusion into the proceedings, the following resolution was passed:—

Resolved, that local supervising authorities be not allowed a hearing in penal proceedings before the Board, except by special leave of the Board, which may be given when in the course of such proceedings charges are made against an authority, or its officers, to which an answer may be reasonably expected.

The local supervising authority of Hertfordshire was desirous

that the collection of evidence, the formulation of the charges to be met, and the conduct of the case at the hearing should be left entirely to the authority, and that the Board should act in the matter in a purely judicial capacity. On receipt of this suggestion the Board decided to communicate with the local supervising authorities of England and Wales, stating the proposals made, and inquiring whether the authorities were in favour of amending Rule D accordingly. The replies received showed that 21 authorities were in favour of the alteration of procedure, and 66 against it, while 5 favoured the establishment of a circuit system whereby provincial courts for groups of counties might be held at certain appointed centres.

The number of cases of ophthalmia neonatorum coming to the notice of the Board in the course of its penal administration made it apparent that strong efforts should be made to combat the ignorance and carelessness which so frequently lead to the total destruction of the infant's eyesight. The rules had accordingly been strengthened by substituting "must" for "should" in the rule dealing with the cleansing of the child's eyelids, and by placing on the midwife the obligation of advising medical help in case of a purulent discharge in a woman who is pregnant or in labour.

It is satisfactory to observe that the reports of the medical officers of health show in many cases a continued improvement in the old type of midwife still practising under their supervision, in respect of cleanliness, carefulness, and observance of the rules.

THE OUTBREAK OF CHOLERA IN MADEIRA.

WE have received from our special correspondent, since our previous communication from him,[1] two interesting accounts of the cholera at Madeira, and the story as told does not redound to the credit of the central authorities at Lisbon, although it shows that the way in which the epidemic was tackled by the local authorities has been, as far as their means lay, practical and efficacious, while proving great resolution to meet the difficulties of the situation. The English population, it may be added, has escaped the attack. It will be remembered that the last note from our special correspondent on the matter indicated that the original infection took place about the middle of October. The cases which then occurred were in the lowest strata of the population and escaped notice for some time, while the epidemic progressed slowly, so that in the first five or six weeks only some 60 cases occurred, with 20 deaths.

With regard to the origin of the epidemic and its spread during the past month, our special correspondent writes as follows:—"Cholera seems to have been introduced into Madeira by emigrants from a passing steamer, probably Russians or Italians, on their voyage to South America. These people, unless epidemic sickness is recognised on board, roam about the least-frequented parts of Funchal whilst their steamer is coaling, and exchange their clothing and whatever else is marketable for drink and local produce. On the present occasion some time elapsed before the disease was identified, cases having occurred far and wide before the authorities realised what was happening, but as soon as the true nature of the invasion was demonstrated nothing could exceed the energy displayed by His Excellency the Civil Governor and all serving with him in measures of disinfection, isolation, water-supply, and house-to-house inspection. The protection of the people and the restraint of the epidemic were enthusiastically undertaken. A lazaretto has been opened east of Funchal for the reception of patients, and isolation hospitals are established in outlying districts. The direction of the principal hospital has been entrusted to Dr. João Lomelino, who has gained experience at Lourenço Marques, and who, with the official Lisbon delegate, Dr. Carlos Monteiro, has rendered excellent service. The statistics issued early in December showed that 542 persons had been attacked, and that 183 of them had died—a death percentage of about 33. But we knew that it would be necessary to add to these numbers a great many unreported cases, and if the issue here was favourable the percentage of deaths would be reduced. By Dec. 12th the attack had been well got under in Funchal, and most of the cases since reported have come from squalid and distant settlements. The Government at Lisbon have sent out to us a distinguished bacteriologist who has worked zealously and efficiently, but they have otherwise done little in the present calamity to earn the gratitude of their fellow citizens of Funchal or create confidence in the authority of the new *régime* in Portugal."

On Dec. 23rd we received a letter from our special correspondent which had been delayed in transit and did not reach this office until we had gone to press last week. In this letter he complains of the difficulties of communication making it impossible for regular correspondence, save by cablegram, to be transmitted. He adds: "Five or six cases are reported daily in Funchal and its suburbs, where the disease is well under control and fast subsiding; but the villages on the south side still contribute on a larger scale. In these localities the authorities have been thwarted by the ignorance and impatience of the people, who resent all restrictions and precautions, and who attribute the immunity of their social superiors to some sinister influence exerted by the Government. About 900 people have been attacked, and the deaths have been 280. The epidemic is still limited to the lower strata of the population. We are practically isolated, and we are bewildered to think why the Cape outward-bound boats refuse to drop our weekly mail."

From these communications the magnitude of the disaster which has fallen upon Madeira can be estimated. The epidemic, which appears to be now coming under complete control, was a moderately severe one, the spread of the disease during the end of November being rapid, so that from 900 to 1000 persons have suffered in a population of under 150,000. No English person has been attacked, and the cases amongst the Portuguese have been absolutely confined to the least sanitary, poorest, and most ignorant sections of the population. We must all of us sympathise deeply with the island, particularly with those to whom a good season in Madeira is of the first importance. It would seem that the Central Government at Lisbon has hardly realised the responsibilities attaching to office.

[1] See THE LANCET, Dec. 10th, p. 1716.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 77 of the largest English towns 7619 births and 4946 deaths were registered during the week ending Dec. 17th. The annual rate of mortality in these towns, which had been equal to 18·1 and 16·8 per 1000 in the two preceding weeks, further declined to 15·2 in the week under notice. During the first 11 weeks of the current quarter the death-rate in these towns averaged 14·8 per 1000. In London during the same period the death-rate, calculated on a probably over-estimated population, was equal to 15·5 per 1000. The annual death-rates in the 77 towns in the week under notice ranged from 5·7 in East Ham, 6·5 in Handsworth, 7·2 in Smethwick, and 7·4 in Hornsey, all being suburban districts, to 21·1 in Swansea, 21·2 in Newcastle-upon-Tyne, 21·3 in Warrington, 22·2 in Tynemouth, and 23·3 in Burnley. The 4946 deaths from all causes in the 77 towns in the week under notice showed a further decline of 499 from the high numbers in the two preceding weeks, and included 397 which were referred to the principal epidemic diseases, against 420, 416, and 332 in the three preceding weeks; of these 397 deaths, 169 resulted from measles, 61 from whooping-cough, 61 from diarrhœa, 52 from diphtheria, 28 from scarlet fever, and 26 from enteric fever, but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the 77 towns was equal to 1·2 per 1000, against 1·3 and 1·0 in the two previous weeks. No death from any of these epidemic diseases was registered in the week under notice in East Ham, Halifax, Stockport, Hornsey, St. Helens, Huddersfield, or in 10 other smaller towns; the annual death-rates therefrom ranged upwards, however, to 3·7 in Devonport and in Tynemouth, 3·9 in Rotherham, and 4·2 in Grimsby. The fatal cases of measles in the 77 towns, which had been 231 and 143 in the two previous weeks, rose again to 169 in the week under notice; the highest annual rates from this disease in the week were 1·6 in Rotherham, 1·8 in Oldham, 2·1 in Grimsby, and 2·8 in Tynemouth. The 61 deaths from whooping-cough were within one of the

number in the previous week, and caused annual rates equal to 1·2 in Norwich, 1·3 in Hartlepool, and 2·4 in Rotherham. The deaths attributed to diarrhœa which had steadily declined in the 15 preceding weeks from 527 to 39, rose again in the week under notice to 61, and showed a proportional excess in Burnley, Devonport, and Rochdale. The 52 deaths referred to diphtheria exceeded by 16 the number in the previous week, and included 19 in London and its suburban districts, 5 in Liverpool, 3 in Manchester, and 2 both in Devonport and in Blackburn. The 28 fatal cases of scarlet fever were fewer by 2 than those in the previous week; 6 occurred in London and its suburban districts, 4 in Birmingham, 4 in Liverpool, and 2 both in Sheffield and in Swansea. The 26 deaths referred to enteric fever also showed a slight increase, and included 6 in London, and 2 each in Grimsby, Manchester, and Hull. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had declined in the five preceding weeks from 1832 to 1719, had further fallen to 1680 on Saturday, Dec. 17th; 156 new cases of this disease were admitted to these hospitals during the week, against 170 and 169 in the two previous weeks. The 1448 deaths from all causes in London in the week under notice included 355 which were referred to pneumonia and other diseases of the respiratory system, against 669 and 506 in the two preceding weeks; and were 26 below the corrected average number in the corresponding week of the five years 1905–09. The causes of 41, or 0·8 per cent., of the deaths registered during the week in the 77 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-upon-Tyne, Leicester, Portsmouth, Salford, and in 51 smaller towns; the 41 uncertified causes of death in the 77 towns in the week under notice included 6 in Liverpool, 5 in Birmingham and in Stoke-on-Trent, and 3 each in Manchester, Blackburn, Hull, and Gateshead.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns 850 births and 598 deaths were registered during the week ending Dec. 17th. The annual rate of mortality in these towns, which had been equal to 17·5 and 17·2 in the two preceding weeks, further declined to 16·5 in the week under notice. During the first 11 weeks of the current quarter the death-rate in these eight towns averaged 14·9 per 1000, and slightly exceeded the mean rate during the same period in the 77 largest English towns. The annual death-rates in the eight Scotch towns in the week under notice ranged from 11·3 and 14·0 in Greenock and Perth, to 17·2 in Glasgow and 17·8 in Dundee and in Paisley. The 598 deaths from all causes in the eight towns during the week showed a further decline of 24 from the number in the previous week, and included 50 which were referred to the principal epidemic diseases, against 55, 47, and 40 in the three preceding weeks; of these 50 deaths, 18 resulted from diphtheria, 13 from whooping-cough, 9 from diarrhœa, 7 from scarlet fever, 2 rom measles, and 1 from "fever," but not one from small-pox. The mean annual rate of mortality from these epidemic diseases in the eight towns in the week under notice was equal to 1·4 per 1000, and exceeded by 0·2 the rate from the same diseases in the 77 English towns. The deaths referred to diphtheria in the eight Scotch towns, which had been 11 and 13 in the two previous weeks, further rose to 18 during the week, of which 8 occurred in Edinburgh, 4 in Glasgow, and 2 each in Leith and Perth. The 13 fatal cases of whooping-cough also showed an increase of five upon the number in the previous week, and included 7 in Glasgow, 3 in Dundee, and 2 in Leith. Of the 9 deaths attributed to diarrhœa, corresponding with the number in the previous week, 3 were returned in Glasgow, and 2 both in Dundee and Aberdeen. The 7 fatal cases of scarlet fever exceeded those in the previous week by 3, and included 2 each in Glasgow, Edinburgh, and Paisley. The death referred to "fever" occurred in Glasgow and was certified as cerebro-spinal meningitis. The deaths referred to diseases of the respiratory system in the eight towns, which had been 157 and 151 in the two preceding weeks, further declined to 122 in the week under notice, and were 93 below the number in the corresponding week of last year. The causes of 19, or 3·2 per cent., of the deaths in the eight towns during the week were not certified or not stated; in the 77 English towns the proportion of uncertified causes of death did not exceed 0·8 per cent.

HEALTH OF IRISH TOWNS.

In 22 town districts of Ireland, having an estimated population of 1,151,790 persons, 552 births and 432 deaths were registered during the week ending Dec. 17th. The mean annual rate of mortality in these towns, which had been equal to 18·1 and 19·6 per 1000 in the two preceding weeks, was again 19·6 in the week under notice. During the first eleven weeks of the current quarter the annual death-rate in these Irish towns averaged 17·6 per 1000; the mean rate during the same period did not exceed 14·8 in the 77 largest English towns and 14·9 in the eight Scotch towns. The annual death-rate during the week was equal to 19·8 in Dublin, 17·7 in Belfast, 20·5 in Cork, 20·4 in Londonderry, 21·9 in Limerick, and 35·1 in Waterford; the mean annual death-rate for the week in the 16 smallest of these Irish towns was equal to 20·4 per 1000. The 432 deaths from all causes in the 22 town districts during the week corresponded with the number in the previous week, and included 23 which were referred to the principal epidemic diseases, against 36 and 33 in the two previous weeks; these 23 deaths were equal to an annual rate of 1·0 per 1000; in the 77 English towns the mean rate from the same diseases for the week under notice was equal to 1·2, and in the eight Scotch towns to 1·4 per 1000. The 23 deaths from these epidemic diseases in the Irish towns included 10 from measles, 5 from diarrhœa, 3 from scarlet fever, 2 both from whooping-cough and enteric fever, and 1 from diphtheria, but not one from small-pox. The 10 fatal cases of measles showed an increase of 5 upon those returned in the previous week, and included 6 in Lurgan and 3 in Belfast. Three of the 5 deaths from diarrhœa, and 2 of the 3 from scarlet fever occurred in Belfast. The 2 deaths referred to enteric fever were returned in Dublin and Galway. The 2 deaths from whooping-cough showed a decline of 13 from the number in the previous week; and the fatal case of diphtheria occurred in Dublin. The deaths in the 22 towns during the week included 130 which were referred to pneumonia and other diseases of the respiratory system, against numbers increasing from 80 to 116 in the four preceding weeks. The causes of 12, or 2·8 per cent., of the deaths registered in the Irish towns in the week under notice were not certified; in the 77 English towns the proportion of uncertified deaths did not exceed 0·8 per cent., but was equal to 3·2 per cent. in the eight Scotch towns.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

Lieutenant Bernard G. Goodwin resigns his commission (dated Dec. 21st, 1910).

Lieutenant-Colonel C. W. Johnson, on arrival from Gibraltar, has been posted to the Eastern Command. Lieutenant-Colonel C. Birt, from the London District, has taken over medical charge of the Royal Infirmary, Dublin. Lieutenant-Colonel G. G. Adams has been transferred from Hyderabad to Colaba. Lieutenant-Colonel F. W. Gordon-Hall has been granted leave from Jan. 17th to Feb. 10th with permission to travel in France. Major S. J. C. P. Perry and Major G. E. F. Stammers have embarked for a tour of service in India. Major J. F. Burke has been transferred from the Western to the Southern Command. Major H. V. Prynne has been appointed to the Eastern Command. Major A. H. Morris has been granted leave of absence from Dec. 27th to Feb. 24th. Major F. Wade-Brown, from Kilworth Camp, has taken up duty at Cork. Major A. W. N. Bowen has been transferred from Poona to Kirkee. Captain R. J. Cahill, Captain E. J. H. Luxmoore, Captain K. A. C. Doig, Captain G. A. Kempthorne, and Captain S. C. Bowle have arrived home from India. Captain P. Dwyer has been transferred to the home establishment from India, tour-expired. Captain H. Ensor, D.S O., who has been serving with the medical branch of the Egyptian Army since May, 1902, has received his Majesty's permission to wear the Order of the Osmanieh (Fourth Class) which was recently conferred by H.H. the Khedive in recognition of valuable

services. Captain A. T. Frost has been appointed Specialist in Dermatology and Venereal Diseases to the Dublin District. Captain T. S. Coates, from Haulbowline, has taken up duty at the Royal Arsenal, Woolwich. Captain S. Field has embarked for a tour of service in Jamaica. Captain T. C. Potter, pathologist to Queen Alexandra's Military Hospital at Grosvenor-road, has left for Jamaica to take up special duty under the Colonial Office. Captain Edward Gibson has taken up service with the Egyptian army. Captain J. M. H. Conway has been transferred from Dublin to Kilbride. Lieutenant S. S. Dykes has been granted leave of absence from Dec. 28th to Jan. 31st, with permission to travel in France and Switzerland. Lieutenant F. H. Somers-Gardner has been transferred from Cosham to Hilsea. Lieutenant H. V. Stanley, from Kilworth Camp, has joined at Dublin.

INDIAN MEDICAL SERVICE.

Brevet-Colonel J. Shearer, C.B., D.S.O., has arrived home from India. Lieutenant-Colonel A. O. Evans, on return from leave, has been appointed Civil Surgeon at Maymyo. Lieutenant-Colonel A. Buchanan has been appointed Civil Surgeon of Amraoti and to the Executive and Medical Charge of the Amraoti District Jail. Lieutenant-Colonel R. C. MacWatt, Bengal, has been granted one year's leave home from India. Lieutenant-Colonel H. B. Melville and Major C. Duer have been confirmed by the Government of India in their appointments as Joint Civil Surgeons at Simla. Major A. Leventon has taken over charge of the Dibrugarh Jail from Lieutenant-Colonel E. R. W. C. Carroll. Major F. A. Smith (Bombay Presidency) and Major R. Bryson (Madras Presidency) have arrived home on leave from India. Major J. Woolley has rejoined his former appointment as Superintendent of the Central Jail at Bhagalpur. Major P. C. Gabbett, professor of surgery at the General Hospital, Madras, has been granted two years' combined leave. Major W. Lethbridge has taken up duty as Agency Surgeon at Wano. Major E. G. R. Whitcombe has received an extension of his leave up to Jan. 5th. Captain A. S. M. Peebles has been appointed Specialist in Mental Science to the Northern Army. Captain A. E. Grisewood, assistant plague medical officer at Hoshiarpur, has been appointed District Plague Medical Officer, Hoshiarpur, in succession to Captain H. Watts, proceeding on leave. Captain A. C. MacGilchrist has taken over the duties of Civil Surgeon at Jessore. Captain H. C. Brown has been posted to the charge of the Brigade Laboratory at Jullundur. Captain E. J. C. Macdonald, district plague medical officer at Sialkot, has been posted to Jhelum, relieving Captain S. B. Mehta, transferred. Captain H. B. Drake has received an extension of his leave. Lieutenant K. S. Thakur has been appointed to the officiating medical charge of the 31st Punjabis. Lieutenant H. Semon has arrived home on leave. Lieutenant A. C. Munro has been appointed Specialist in Ophthalmology to the 7th (Meerut) Division.

TERRITORIAL FORCE.

Infantry.

5th (Prince of Wales's) Battalion, The Devonshire Regiment: Surgeon-Major Ernest P. A. Mariette resigns his commission (dated Dec. 21st, 1910).

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on Dec. 16th. There were present: Dr. F. de Havilland Hall, in the chair; Dr. J. Pickett, Dr. M. G. Biggs, Dr. M. Greenwood, Dr. F. J. Allan, Dr. F. C. Martley, Mr. J. Brindley James, Dr. J. W. Hunt, Mr. F. S. Edwards, Mr. F. J. Colyer, Dr. W. Knowsley Sibley, Dr. F. S. Palmer, Dr. St. Clair B. Shadwell, and Dr. J. B. Ball. The records of the society show that the business is very successful. The number of sickness claims received during the autumn is less than usual, and the claims have been for the most part of very short duration, so that the total amount of sick pay disbursed is considerably under the amount expected and provided for by the rates of contribution. The funds are rapidly growing and now amount to over £240,000. Prospectuses and all further information on application to Mr. F. Addiscott, secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

Correspondence.

"Audi alteram partem."

THE MOTOR FUNCTIONS OF THE STOMACH.

To the Editor of THE LANCET.

SIR,—Apart from powerful peristaltic waves there is no physiological division of the gastric cavity, and most certainly no middle sphincter such as Mr. Gray describes, and this I state on the experience of about 1500 observations conducted on something well over 500 cases, so that although I do not claim to be an authority yet such experience is surely sufficient to refute Mr. Gray's contention. To those who know the work involved in these cases, not only in the examinations themselves but also in following them up, it is obvious that a busy surgeon with a large private and hospital practice could not give the time necessary for more than a very limited number of examinations. I presume I am one of those "radiographers and others" to whom Mr. Gray refers. May I suggest that it is just "radiographers and others," whose business it is, who are most likely to know the interpretation of radiographic shadows which are notoriously deceptive to those who are not experienced in their interpretation.

"The interpretations of radiographers require criticism," certainly, but that criticism should be well-informed, fair-minded, and intelligent. For instance, "One cannot allow that Dr. Barclay's observations (on the rate at which food leaves the stomach) confirm Dr. Hertz's when they differ on so important a point as the position of the pylorus," which is hardly a fair method of throwing doubt on Dr. Hertz in any case. Moreover, it is not a fact that I disagree with Dr. Hertz, as Mr. Gray will see if he looks up the *British Medical Journal* for August 27th, where I stated that "the stomach is placed almost entirely to the left of the middle line, and it is tubular, roughly J-shaped. The pylorus is about half an inch above the lowest point, which is slightly above the level of the umbilicus, and half an inch *to the right of the middle line.*" And yet Mr. Gray states and re-states, and yet again sets it down that I place the pylorus to the *left* of the mid-line and endeavours to throw doubt not only on my own findings but also on those of Dr. Hertz and others by reiterating as a fact a statement that I have never made. He has read into the words of a paper written two years ago a meaning they never had for anyone, except himself, and has used them in a way that is very reminiscent of recent electioneering tactics. At that time one could not get so good a screen examination as nowadays, and I remember well debating whether I was sufficiently convinced of the position of the pylorus to put it down on paper as I did later on. I am convinced of the folly of regarding the stomach as a cast-iron vessel and attempting to give exact shapes and positions for its various parts. The normal shape is neither here nor there, for it is altered at once if the stomach loses even a little of its tone—i.e., the greater curvature elongates and allows the lowest part to drop a little, the pylorus remaining in the same position presumably. This entirely accounts for the discrepancies in the descriptions of the normal shape. Maybe, if I examined the stomachs of savage tribes instead of civilised town dwellers, I would find tonic action more perfect in every normal subject and would find the pylorus the lowest point instead of some part of the pyloric portion of the greater curvature. I doubt if Mr. Gray knows these elementary facts, or that Pfahler and Holzknecht described the ideal rather than the usual stomach as having the pylorus as the lowest point. I am certain that they also place the pylorus in the same place as do "recent radiographers and others"—i.e., just to the right of the middle line, and therefore agreeing with Dr. Hertz and others. I also am certainly one of those who maintain that there is no peristalsis in the cardiac end, as Mr. Gray will see even in that old paper of mine which he quotes. He asks: "Why should peristalsis affect only a small part of the tonically contracted tube?" I cannot tell him why—I simply state facts and attempt to explain them if I can, whereas Mr. Gray has apparently started off with the idea that the stomach is bilocular and has adduced cases to prove it from a limited experience.

On the practical bearing of Mr. Gray's contention there is little to be said. The stoma of a gastro-jejunostomy appears to act quite as efficiently when placed 4 inches from the pylorus as when it is placed nearer. I have examined many cases after this operation has been successful and have invariably found the stoma patent and acting perfectly, even though the stoma was not close to the pylorus. In the operative failures I have only come across one instance of vicious circle vomiting, and in that case the stoma was as near to the pylorus as 2½ inches. The other cases of operative failures were due to different causes, some of which are detailed in a paper on Gastric Radioscopy in the *Archives of the Roentgen Ray* for October, 1910.

It is entirely against my wish that I am dragged into this controversy on so intricate a subject, and without trespassing on the hospitality of your columns to an unwarrantable extent I cannot answer more than the main thesis of Mr. Gray's papers which teem with assertions that urgently call for criticism, if not for refutation.

I am, Sir, yours faithfully,

Manchester, Dec. 20th, 1910. A. E. BARCLAY.

To the Editor of THE LANCET.

SIR,—I am afraid that little good—other than amusement to some of the readers of THE LANCET—will result from the discussion on this subject.

Dr. Hertz's remarks at first were chiefly confined to the functions of a healthy stomach—it is dangerous to use the word normal—but now he draws more deeply from pathological phenomena. The fact that the stomach evacuates its contents through the pylorus at once or in the absence of hydrochloric acid in pathological cases is no proof that the same occurs in health. One might as well say that the stomach is of no use in the normal human economy because a man can live an apparently healthy life after the whole or greater part of the stomach has been removed.

Dr. Hertz's letter confirms my conviction that the ideas of what occurs in normal gastric digestion are in a tangled condition, at least, so far as the motor conditions of the stomach are concerned, and that the subject from a radiographer's point of view requires elucidation and agreement. The consensus of a small committee which had collectively investigated the subject would be valuable!

I am, Sir, yours faithfully,

Aberdeen, Dec. 24th, 1910. H. M. W. GRAY.

POLYDACTYLISM AND HEREDITY.

To the Editor of THE LANCET.

SIR,—Dr. Banks Raffle's letter in THE LANCET of Dec. 10th reminded me of a recent case here. The patient was affected by deformity of the hands, and one of her brothers showed a similar malformation; but so far as could be discovered no other members of the family manifested the same peculiarity. The patient was admitted as an ordinary case of puerperal mania and made a good recovery. She apparently had the full use of her hands, and busied herself with knitting, &c., and when at home performed all her duties in connexion with agricultural work and life without apparent difficulty. Although the patient was undoubtedly of a degenerative type, the heredity remains obscure.

Professor R. W. Reid of Aberdeen having examined the radiograms in this case reports that the middle phalanges of the index, middle and little fingers of the right hand are imperfectly formed and ankylosed to the distal ends of the proximal phalanges, but seem to articulate with the distal phalanges in the ordinary way. In the left hand the middle phalanges of the index and middle fingers are much shortened, but articulate normally at both distal and proximal ends. I am, Sir, yours faithfully,

Perth, Dec. 20th, 1910. A. R. URQUHART.

TREATMENT OF ULCERS OF THE LEG BY PASTE.

To the Editor of THE LANCET.

SIR,—I notice in your issue of Dec. 10th an abstract from the *University of Pennsylvania Hospital Bulletin* describing the treatment of ulcers of the leg by the use of Unna's paste. I do not know how long it may have been the practice in America, but your readers may be interested to know that this method of treatment has been in vogue at St. Bartholomew's Hospital for at least the last seven years with, on the whole, excellent results. In fact, it is perhaps the method of dealing with these troublesome ulcers most frequently used at that hospital. It is not used for the largest ulcers, because these discharge so much that the bandages, which are somewhat laborious to apply, would have to be frequently changed, but after a course of boroglyceride fomentations and antiseptic treatment most cases become reduced to manageable proportions, and are almost always cured by the use of the Unna's paste bandages. At first they are changed about twice a week, and subsequently at longer intervals up to a month. They are extremely comfortable, and give valuable support to the limb. Varicose veins, the usual cause of these ulcers, are, of course, also frequently associated with eczema of the leg, and this condition, too, can often be advantageously dealt with in the same way. The bandages are only contra-indicated if the discharge be too profuse. One point in applying them must particularly be emphasised, and that is that the limb must be kept raised for at least a quarter of an hour before application. If this be not done the bandage does not fit properly and soon becomes loose and uncomfortable, and has to be removed. I am, Sir, yours faithfully,

HALDIN. DAVIS, F.R.C.S. Eng.

Portman-street, W., Dec. 21st, 1910.

ERRORS OF REFRACTION IN THEIR REFLEX AND DISTANT MANIFESTATIONS.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Dec. 17th, p. 1743, there appears a masterly and interesting lecture on "The Aftermath of Eye-strain," by Mr. Sydney Stephenson. This brought to my mind the case of a girl who was sent into St. George's-in-the-East Infirmary with a view to being sent to an idiot asylum, and who had been attending a special school for weak-minded children and found incapable of receiving instruction, whereas mentally the child was quite bright and was the victim of undetected compound hypermetropic astigmatism. The hypermetropia being greater than her power of accommodation, the child was not even "long-sighted"—she had no clear vision at all. The following are the brief notes of the case.

The patient was a girl aged 8 years. She was admitted to hospital on June 10th, 1899, as "mental hebetude." The mother informed me that the girl had been refused at school as she was an idiot. She was said to have had a "fit" a year ago. On June 10th she looked rather vacant and shy. On the 22nd the sister of the ward reported that the child played with the other children, and appeared to have a fair amount of intelligence. The child could count, but did not appear to have learnt to read. Was her sight defective? Yes. For she could neither see the position of the distant clock hands nor count small dots close to. Under homatropine it was found that with + 5 D. sph. and + 1 D. cyl. axis vert. she could, with each eye, count ⅛ inch dots at 20 feet. This state of refraction was confirmed by retinoscopy. She was supplied with spectacles and sent home, and *not* to an idiot asylum!

I am, Sir, yours faithfully,

Dec. 19th, 1910. MARCUS M. BOWLAN.

THE DETERMINING CAUSE OF CANCER IN MAN.

To the Editor of THE LANCET.

SIR,—May I beg space to point out some errors which have crept into the adaptation in black-and-white of my coloured schema—illustrating a new theory upon the above subject—and the letterpress accompanying it, in your issue of Dec. 24th, p. 1831? 1. On the schema as printed for "venous" read "arterial," and for "arterial" read "venous" (red and blue in the original). 2. For "pancreas" read "pancreatic duct" (green in the original). 3. The channel joining the liver with the gall-bladder and intestine (yellow in the original) are the "bile ducts," and not the "portal vein" as indicated by shading and description. 4. The areas indicated by decussating lines at the junction of the venous

and the arterial systems represent the "pulmonary" and the "systemic" capillaries," and not "lymphatics" as described.

I am, Sir, yours faithfully,

London, Dec. 24th, 1910. ROBT. HY. SCANES SPICER.

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—In a volume just published by Messrs. John Murray and Sons, entitled "Induced Cell Division and Cancer," by Mr. H. C. Ross and Dr. J. W. Cropper, our names are quoted either in the preface or in the body of the work. We desire to say that, having had no opportunity of seeing the work previous to publication, either in manuscript or in proof, we think it only fair to disclaim any responsibility for the statements made and the conclusions arrived at by the authors. We are, Sir, yours faithfully,

R. J. HARVEY-GIBSON,
W. A. HERDMAN,
B. MOORE,
J. REYNOLDS GREEN,
C. S. SHERRINGTON.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Medical Units.

AT the headquarters, in Upper Chorlton-road, the annual parade took place recently for the prize presentations in connexion with the Royal Army Medical Corps (Territorial Force), East Lancashire Division. The great drill hall, gay with flags, was filled with a strong muster of men, officers, and guests. Colonel W. Coates, C.B., principal medical officer, East Lancashire Territorial Division, who deserves all praise for his devotion to the corps, presided. He was supported by Lieutenant-Colonel Sir Henry Mackinnon, K.C.B., C.V.O., general officer commanding in chief, Western Command; Colonel Lord Brackley and Lady Brackley; Colonel J. C. Culling, principal medical officer, Western Command; Colonel Damer Harrisson, R.A.M.C., T.F., Major Scott, R.A.M.C., and many others. In introducing Sir Henry Mackinnon, Colonel Coates said that the principal work of the year had been the formation of No. 18 Special Reserve Field Ambulance R.A.M.C., which was now ready for service at home and abroad. A division of the British Red Cross was now being formed in East Lancashire, and he thought that through their corps they could help the movement. There were hundreds of men who had passed through the ranks of the Royal Army Medical Corps who could go into these voluntary aid detachments without any further examination. Those wishing to join should communicate with headquarters. Those who joined would only undertake the obligation of possibly rendering aid to the wounded in the locality in which they lived. Colonel Bentley Mann gave an encouraging account of the present position of the East Lancashire Field Ambulance. Sir Henry Mackinnon said that he looked upon the medical units as an efficient and useful body of the Territorial Force. Their position was vastly improved since he last addressed them six years ago, and they had now got the medical service of the Territorial Force on a sound working basis.

National Minimum of Health.

Dr. James Niven's recent lecture to the Manchester Fabian Society was full of interest. He stated that, as shown by the Registrar-General's return, the death-rate of the country had been reduced by almost one-third since the quinquennial period of 1871–75. For those years the uncorrected death-rates were 22 per 1000. Thirty years later the death-rate was 16 per 1000, and in 1908 it was 14·7 per 1000. This was calculated to represent a value of over £12,000,000 a year. There are, however, obstacles to further progress. Boys and girls in our large towns are hurried off to work at the earliest possible moment, and their energies engrossed in acquiring technical skill and in earning wages. Little or no interest is taken in domestic matters. The girls know very little but what they have learned at school; hence they are very ignorant of how to make a comfortable home for their husbands, or how to rear healthy children. "They lose their babes, but pass through a painful apprenticeship in motherhood." Then come trade depressions, unemployment, crowding together of families, disease, and idleness, and probably one-tenth of the industrial population is subjected to deterioration, both physical and moral. Dr. Niven believed that ordinary punishment for neglect of children is useless and may be harmful. He would have power of detention, with enforced labour for the support of the wife and children. If girls are to be good mothers they must know how to take care of infants, and he remarked that excellent, though all too short, education is provided by the Manchester Education Authority for the senior girls in elementary schools. Dr. Niven desires a more extended and systematic course, to include cooking, cleaning, washing, sewing, mending, and so on; that the girl should be able to choose a house, know how to use it to the best advantage, and know also what goods to get, their prices, and how to combine them—in fact, all the things which make the difference between a well-kept and a badly-kept house. It will, however, be some time before Manchester girls become miniature Mrs. Beetons.

Typhoid Fever at Knutsford.

An inquest was held recently on a seven-year-old child in suggestive circumstances. Six weeks before the death the mother was taken to the hospital with typhoid fever. When she got back home on Nov. 2nd she found the child, whom she had left in the care of another woman, very ill, but she did not send for a medical man till the evening of the child's death. The medical evidence was that "death was caused by septic poisoning, due to the perforation of a typhoidal ulcer." The condition of the house was said to be such that it was perfectly impossible "for the child to get better." The coroner expressed surprise that the sanitary authorities did not visit the house after the mother's removal to the hospital. Evidently the Knutsford slums require looking after. From its position the town is not a very easy one to drain satisfactorily.

Dec. 27th.

WALES.

(FROM OUR OWN CORRESPONDENT.)

The Training of Midwives.

AN effort is being made in Cardiganshire to raise funds voluntarily for the purpose of providing for the efficient training of midwives in the county. The proposal is not meeting altogether with the approval of some of the local sanitary authorities, who consider that the county council should provide the necessary funds so that each district will have to contribute its proper and fair proportion. The Merionethshire county council has for several years granted yearly three scholarships of £25 each for the training of midwives.

Cardiff Infirmary: Suggested Fees from Patients.

At a recent meeting of the board of management of the Cardiff Infirmary a recommendation was made by one of the committees that each in-patient should be called upon to pay 6*d.* a day and each out-patient 3*d.* weekly, unless their circumstances were such that they could not afford to make these payments. The proposal was approved by Lord Aberdare, who stated that this method of adding to the funds of the institution had been adopted elsewhere with success. The average weekly cost of each in-patient is £1 2*s.* 4*d.*, and it is estimated that the adoption of the proposal would add about £700 yearly to the income of the infirmary. The scheme did not meet with the approval of all the members of the board and no definite decision was come to on the matter.

An Isolation Hospital for Aberystwith.

The question of providing an isolation hospital for the town of Aberystwith has been under the consideration of the town council for a very long period and the need for such an institution has been felt upon many occasions. There appears to be some chance of this very necessary municipal equipment being provided, a plot of land two acres in extent having been offered to the council as a site. It is situated at the rear of the Aberystwith infirmary, and a suggestion has been made that it might be possible to administer the hospital from that institution. When the question was being discussed at a recent meeting of the town council one member

pointed out that the inhabitants of Aberystwith depended for their livelihood almost entirely upon the revenue derived from visitors and that one serious epidemic might absolutely ruin an industry upon which many were dependent.

Aberystwith Board of Guardians and Poor-law Medical Officer.

At a meeting of the Aberystwith board of guardians held recently a motion was carried by 24 votes to 5 giving notice to Mr. G. R. E. Bonsall to terminate his appointments as district medical officer, medical officer of the workhouse, and public vaccinator. The only definite reason which appears to have been given for the adoption of this course was a purely personal one between Mr. Bonsall and the member of the board who proposed the motion. Fortunately the consent of the Local Government Board is necessary before the medical officer's appointments can be terminated, though this is not the case with respect to the appointment of public vaccinator, and the central authority may be trusted to give an impartial consideration to the question which has been raised. The Poor-law inspector of the Local Government Board has borne testimony to the efficient and painstaking manner in which Mr. Bonsall has carried out his duties, and more than one member of the local authority pointed out that if the motion were passed no official would be safe from dismissal if he happened to have a private quarrel with one of the guardians.

Health of Merionethshire.

The estimated population of the county of Merioneth at the middle of 1909 was 48,800. The birth-rate during 1909 was 19·0 per 1000 of the inhabitants, and the death-rate from all causes 14·5 per 1000. Dr. Richard Jones, who for 17 years has prepared a statistical report for the county council, refers in his last report to the large number of infectious diseases in Merionethshire, a fact which he attributes to the absence of isolation hospital accommodation. He suggests that three combined districts should be formed for the purpose of providing these institutions. The Local Government Board has recently urged upon the council the desirability of making such accommodation, and suggests that a beginning should be made in the Dolgelly union. There does not seem to be any disposition on the part of the county council to give effect to these proposals.

Dec. 27th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

The Epidemic of Cholera.

ONE of the greatest difficulties confronting the sanitary authorities in their energetic attempts to stem the further progress of the scourge is the inability to discover the actual origins of infection. The epidemic is still spreading, and the peculiar feature about it is that a number of isolated cases appear here and there in quarters on the Bosphorus and the Golden Horn which are often very far apart and have no evident connexion with one another. These "cholera nests" seem to baffle all cleansing efforts, and new measures are being adopted, of which the following are the most important: Seven additional sanitary stations are to be constructed in various quarters, which will each have a medical man, two assistants, four porters, and all the necessary furniture, medicines, and instruments. At Ferikeuy, Stamboul, and Scutari three pavilions will be erected for the reception of patients. Sanitary inspectors will be attached to the municipality of Pera. The vigilant inspection of the shops, restaurants, coffee-houses, &c., has already begun. The managers of the theatres have received an injunction to have a special room equipped with necessary means for accommodating persons stricken with cholera during the theatrical performances. Every establishment of amusement will have a medical man in attendance. Strict, regular disinfection of these establishments is to be carried out under skilful supervision. Should a cholera case show itself in a theatre it will at once be closed. The Imperial Medical Society of Constantinople has issued a number of useful recommendations, such as the absolute necessity of increasing the staff of medical men in the municipal service. Attempts are being made to compel the boiling of drinking water in the hotels, schools, and pensions. Talaat Bey, the Minister of the Interior, has made the following interesting communication in Parliament: "As soon as the epidemic of cholera began to spread in Russia, the Superior Sanitary Council of Constantinople sent the necessary instructions to the medical authorities of the adjoining provinces and two lazarets were established at Trebizond. A special commission was sent to that town, as well as two torpedo-boats to survey the coast-line. Yet, in spite of these and other measures, it was impossible to prevent the epidemic spreading to Turkey. It made its first appearance in the province of Erzeroum and then in Trebizond." Talaat Bey has also stated that 50 medical men have been ordered to come to Constantinople to strengthen the sanitary service, and that 35 physicians who had proved incapable were dismissed. The hygienic service has been reinforced by 100 persons and the sum of £T1500 has been expended on disinfectants, but the general unsatisfactory sanitary and hygienic conditions of the metropolis render the task extremely difficult. The streets are dirty. The poverty of the population in many districts is very great, and their ignorance of the most elementary principles of cleanliness and hygiene is astounding. Mahmoud Shevket Pasha, the Minister of War, visits all the military schools, barracks, and hospitals every day to see that the hygienic instructions are strictly carried out.

Dec. 22nd.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

A Medical Man Fined.

A RECENT action before the Ontario courts is of interest to members of the medical profession who patronise the automobile in their calling. The particulars of the case are as follows. Returning from a call, the medical man was descending a hill slowly in his motor car when he espied one of his patients, a farmer, unloading gravel from a wagon to which was attached a pair of spirited young horses. He did not blow his horn as the law requires, fearing that it would alarm the team, but stopped. He was approaching from the rear. The horses became unmanageable and ran away, the farmer being thrown upon his back in the wagon, his feet becoming entangled in the whiffletrees. The bumping of the wagon caused a rupture of the liver, and death occurred from internal hæmorrhage in little more than one hour. The jury found that the accident had arisen through the negligence of the defendant in not sounding his horn to apprise the farmer of his approach, and a fine was ordered.

Western Hospital, Montreal.

The authorities of the Western Hospital, Montreal, are appealing to the public for financial aid to the extent of $100,000. This money is needed for the erection and equipment of new buildings to accommodate the increasing number of patients who daily seek admission. In 1909 the hospital treated 1288 patients, of whom 609 were free patients, 323 paying a small sum, and 356 private cases. The average cost per patient per day was $1.44. The free patients cost the hospital $17,644, while the total public cash subscriptions only amounted to $9686.17.

Montreal Maternity Hospital.

It is stated that the past year has been one of the most satisfactory in the history of this institution. The total number of patients was 743, of whom 697 were discharged in good health, while 646 births took place in the hospital and only 2 maternal deaths occurred. The private patients numbered 150—an increase of 28 over the previous year. The finances were reported in a better condition than formerly, the endowment fund reaching $30,000, but as this only equalled about one-half the sum expended an urgent appeal is being made to the public for increased subscriptions. The needs of the hospital are an extension of the building and a new nurses' home. Reference was made to the great loss the hospital had recently sustained through the death of Dr. Arthur A. Browne.

Complimentary Banquet to Dr. Temple, Toronto.

On the evening of Nov. 26th Dr. J. Algernon Temple, Toronto, was entertained at a complimentary banquet in the York Club and a presentation was made to him by many of his medical friends in Toronto and others. The occasion

was the retirement of Dr. Temple from the chair of gynæcology in the Medical Department of the University of Toronto. For 40 years Dr. Temple was an active teacher, first as professor of obstetrics and gynæcology in Trinity Medical College, and afterwards when amalgamation took place with the University of Toronto as professor of gynæcology. Dr. John Taylor Fotheringham, Toronto, presided, and over 70 of Dr. Temple's friends and admirers in Toronto participated. Dr. Arthur Jukes Johnson presented an illuminated address, signed by all present, which expressed their admiration of Dr. Temple as teacher, friend, and physician. Dr. R. B. Nevitt, one of Dr. Temple's oldest students, presented him with a solid silver tea and coffee service. Dr. J. F. W. Ross proposed the health of Dr. Temple's old students, and Dr. Charles Sheard, late medical health officer of Toronto, responded. Dr. G. Stirling Ryerson proposed the health of lay friends and patients, to which Mr. E. B. Osler, M.P., and Mr. D. R. Wilike replied. Dr. Temple was very much moved by the many manifestations of friendship and goodwill and responded suitably.

Dec. 15th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

Anterior Poliomyelitis in New York State.

IT is stated that the health officers of New York State have endorsed a proposal that the recently-formed State Legislature should be requested to make an appropriation to enable the State Health Department to undertake a thorough investigation of anterior poliomyelitis, with the view to take the steps necessary to stamp out the disease. The State Health Department has pointed out that the importance of such an investigation is obvious. Attention is drawn to the fact that during the past two or three years the disease has occurred in epidemic form over an ever widening territory and with an increasing number of cases. Surgeon-General Wyman, of the Public Health and Marine Hospital Service, has estimated that the records for the year 1910 will show upwards of 3000 cases, while 10 per cent. of those who have been attacked by the disease are left with more or less permanent paralysis.

The Work of the Guild of St. John in New York.

The Guild of St. John is a charitable organisation of New York city which concerns itself with the health of infants during the hot season of the year. The Guild supports a children's hospital on Staten Island and also provides trips and meals on its boats to infants and mothers in the summertime. According to statistics read recently by Professor W. H. Burr, President of the Guild, last summer was less severe on the small children and infants of New York than usual. The seaside hospital at New Dorp, Staten Island, received between June 1st and Sept. 15th 2400 mothers and children, 296 less than in 1909, and the number of days of hospital treatment was 20 per cent. less than in the previous year. Professor Burr recommended that the hospital should be used for convalescents during the months that it is not occupied by sick infants and mothers. In existing circumstances the hospital lies idle during eight months of the year, when it might be used for convalescents, maternity patients, and others.

The New York Milk Committee.

This committee was recently incorporated in New York State to improve the milk-supply of New York city and to educate the public in the proper use of milk for various purposes. Although the law provides for pasteurisation of certain grades of milk, some secret and ingenious process has been used to evade it. Milk submitted to this process will not sour, but it undergoes another sort of decomposition, "rots," as it has been described. This miserable substitute for genuine pasteurisation has confused the mind of the public; and so bitter have been the attacks on what was supposed to be an altogether fraudulent process that a philanthropist, who has been supplying the poor with thoroughly pasteurised milk at a halfpenny a glass to the extent of some 4,000,000 gallons annually, has withdrawn this benefaction.

The Holman Association for the Promotion of Rural Nursing, Hygiene, and Social Service.

This new society has been incorporated by a number of New Yorkers distinguished socially and is to be supervised by well-known practitioners. Its work is to be done chiefly among the mountaineers of North Carolina, Tennessee, and Kentucky. The plans call for the building of hospitals along the course of new railways, the employment of competent physicians and nurses, and the outfitting of social workers and lecturers on hygiene, who are to travel from place to place. These mountaineers present an interesting problem. They are probably the purest-blooded Anglo-Saxons in the United States, being descended from the early English settlers, who betook themselves to the mountains, where they have remained for some 300 years untouched by railways and their blood unmixed with any foreign stream. Physically they are fine-looking people, being tall, blonde, and broad-shouldered, while many of the younger women are goddess-like in their appearance and carriage. They are, however, astonishingly illiterate, superstitious, and suspicious, as well as lawless. Their ideas of medicine and hygiene are about those that their ancestors brought with them from the old country, and an authoritative manner and an ability to carry out mummery in a convincing way are about all the equipment at present demanded of any practitioner amongst them.

Dec. 18th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Plague.

THE plague returns for the week ending Nov. 12th show 5359 deaths for all India. The Bombay Presidency reported 1024; Madras Presidency, 282; Bengal Presidency, 200; the United Provinces, 1022; the Punjab, 856; the Central Provinces, 734; Mysore State, 358; Hyderabad State, 158; Central India, 158; and Rajputana, 503.

Inoculation Against Plague in the Punjab.

Captain C. A. Gill, I.M.S., Chief Plague Medical Officer in the Punjab, has compiled a valuable memorandum that has just been officially issued by the Punjab Government on the subject of the great advantages of inoculation as a prophylactic measure against plague infection.[1] In this a striking instance of the protective value of inoculation is quoted, based on a report made by Lieutenant E. S. Baillie, Civil Surgeon of Muzaffargarh. A *hakim* (native "doctor") was engaged in treating plague cases in the town and its vicinity. He was shrewd enough at the early stages of the epidemic to get himself inoculated, with the result that although he was constantly in the midst of infection he remained in perfect health throughout the epidemic. Unfortunately, however, he failed to get any of his family inoculated, nor did he advise others to follow his good example. It thus came about that infection, probably in the form of infected fleas, attached itself to his clothing whilst visiting his patients. In this manner he conveyed the disease to his own house and shop in an uninfected quarter of the town, with the result that after a few days rats began to die, and after a further interval his wife contracted the disease and died from plague.

Insanitary Bread-making.

The conditions under which the bread consumed by Europeans in India is prepared by native bakers need some close attention from the sanitary authorities. Bakeries are often ill-ventilated and insanitary in many respects, and the natives employed at the work are extremely filthy in their personal habits and clothing, and are quite ignorant of the most elementary rules of hygiene. Tuberculosis is, unfortunately, too prevalent amongst the inhabitants of the bazaars, from which places the bakers obtain their assistants, and this danger to public health should not be lost sight of when a sanitary inspection of a bakery is made. The floors of bakehouses in India are generally of rammed earth, which material does not allow of proper cleaning; the roofs are constructed of *darma* matting with bamboos and tiles. There are no proper chimneys, and smoke, dust, and dirt are liable to contaminate the materials from which the bread is made.

Vaccination in Bombay.

Lieutenant-Colonel T. E. Dyson, I.M.S., Sanitary Commissioner, in his report on Vaccination in the Bombay Presidency for 1909–10, states that during the year 665,602 persons were primarily vaccinated and 48,885 revaccinated,

[1] See THE LANCET, Dec. 17th, p. 1789.

against 672,252 and 52,362 in the previous year, showing a decrease of 6650 in primary and 3477 in revaccination. Out of 665,602 persons primarily vaccinated 609,827, or 91·62 per cent., were successful; 6429 were unsuccessful; while in 49,661 cases the results could not be ascertained. The percentage of success excluding "unknown" was 98·96. Revaccination cases numbered 48,885, the percentage of success being 42·91. In 19,354 instances the result could not be ascertained, and in 8628 the operation failed. The sex percentages in primary vaccination were 51·69 males and 48·31 females. In revaccination the percentages were 78·94 males and 21·06 females, and in the total number of persons vaccinated 53·56 and 46·44. Of the total number of persons primarily vaccinated, 4478 were Christians, 505,877 Hindus, 112,408 Mahomedans, 1562 Parsis, and 41,277 persons of other castes. The age details are compiled for three periods—viz., under 1 year, between 1 and 6 years, and above 6 years. The number under each age period primarily vaccinated was 523,893, 121,197, and 20,512 respectively. The ratio of infantile protection afforded during the year was 73·43 per cent. The total expenditure on account of vaccination as compared with the preceding year was Rs.3,47,974 (£23,198 4*s.*), as against Rs.3,27,369, an increase of Rs.20,604.

The Medical Department of the Army.

All military medical officers below the rank of colonel have been directed to furnish to headquarters at the close of each year a short essay on the improvements they have noticed during the past twelve months in matters connected with the medical services. They are also required to make any suggestions for the improvement thereof in any particular branch. This is a step in the right direction, which might well be followed by the home authorities. It is to be hoped, however, that the "*suggestions*" will not be "committed" to the extensive vaults known to exist at army headquarters, Simla.

Nov. 26th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Lunacy in Victoria.

IN the annual report of the Inspector-General of the Insane for Victoria, Mr. Ernest Jones, it is stated that the authorities had been asked, "Were mental disorders becoming more prevalent during youth and adolescence?" The statistics at Kew were examined for a period of 27 years, and Mr. Jones thinks that the increase shown is more apparent than real. The total number of insane persons known to the department was 5200. The report states that the Lunacy Act requires amendment to permit the voluntary admission into certain State institutions on the application of the patient; to permit, under safeguards, the admission of voluntary applicants to private licensed houses; to legalise the certification of such patients in various directions either of discharge or incurability. Provision should also be made for legalising home treatment of certain cases of mental disorder. Mental hospitals should be provided apart from asylums. A whole-time pathologist was needed. The expenditure for the year was £163,116. The cost per patient averaged 12*s.* 10¼*d.* per week.

Increase of Rats.

Soon after his arrival in Melbourne Dr. B. Burnett Ham, chairman of the Board of Health, expressed the view that Melbourne's freedom from plague was due to the fact that the species of rat prevailing was the grey and not the black rat. The latter type has since shown signs of decided increase, and at one wharf where a few years ago black rats formed only 6 per cent. of all rats caught, the percentage has risen to 21, and has been as high as 46. Dr. Ham proposed to introduce a Bill making every occupant of premises responsible for rat destruction on those premises.

Government Appointments.

The Federal Government recently announced that two women doctors, Dr. Muriel Davies and Dr. J. Cohen, had been appointed to examine female government employees absent on sick leave. This announcement was immediately followed by a protest from the Women's Medical Association in Victoria. The members of this body, accompanied by several leading male practitioners, waited on the Federal Minister for Home Affairs and stated that while they had no personal objection to offer to the two ladies appointed, they were of opinion that no Government appointment should be made without calling for applications from any practitioner eligible to apply. Mr. King O'Malley protested his ignorance of the manner of appointment, but agreed that the deputation's request was reasonable and promised to look into the matter. It has since been found that 64 appointments of a similar kind have been made in Australia.

Federal Invalid Pensions.

The medical certificate entitling anyone to claim a Federal invalid pension must show that the person is suffering "from either one or other of the following disabilities or a disability of equal gravity":—

Accident.—The complete loss of a limb where such loss renders applicant permanently unable to work; the complete loss of vision.
Nervous system.—Locomotor ataxia (advanced), cerebro-spinal sclerosis, idiocy, epilepsy major with frequent fits, complete paralysis of a limb where such renders work impossible permanently, advanced diabetes, complete loss of vision in old age.
Respiratory system.—Advanced tuberculosis or miner's disease.
Circulatory system.—Heart disease with compensation failed; thoracic aneurysm.
Genito-urinary.—Advanced renal disease with dropsy.
Senility.—Advanced age (70) with degenerative arterial change; chronic articular rheumatism rendering person unable to work.
Unspecified.—Cancer or incurable wasting disease of any kind rendering patient unable to work.

Lady Talbot Milk Institute.

The Premier has promised to advance money for the support of this undertaking during the ensuing summer on condition that the management is put on a proper business footing.

Radium.

The Sydney Hospital has decided to buy £4000 worth of radium. Half this sum has been raised by public subscription and the Government has added the remainder. Dr. W. McMurray will proceed to Paris to purchase the radium, and on his return a special department will be established.

Weather Vagaries.

Melbourne has notoriously a capricious climate, but during the last few weeks the weather variations have been extraordinary. On Nov. 5th a record low reading for barometer was followed by a furious gale, with wintry temperatures. Three days later the shade temperature rose to 88°, followed next day by a drop to 60°. Cold weather followed, and a week later the thermometer rose in one day from an early morning reading of 46° to an afternoon shade reading of over 80°, with a record of 72° all night. Next day at noon the shade maximum was 90°; 20 minutes later the wind veered south, and in half an hour the shade temperature fell 22° F. In the evening the drop amounted to 30°. No visible effect in health is produced by these remarkable changes except on individual cases.

Personal.

Lady Dudley underwent a serious surgical operation on Nov. 19th at Federal Government House, Melbourne. Lady Dudley had been in bad health for some time and visited London last year for the purpose of undergoing an operation, which was performed by Mr. Hurry Fenwick. Her ladyship returned to Australia, and, although not strong, has been able to appear at various viceregal functions. Recently another surgical interference became imperative, and Dr. Douglas Shields operated, assisted by Dr. T. P. Dunhill and Dr. H. B. Devine. The operation is stated to have been successful, and at date of writing Lady Dudley's condition was satisfactory.

Nov. 25th.

Obituary.

SYDNEY JAMES RODERICK, M.B., C.M. EDIN.

WE much regret to record the death of Dr. Sydney Roderick, which took place on Dec. 18th at Vaux Hall, Llanelly, in his forty-sixth year.

Dr. Roderick was educated at Marlborough and at the University of Edinburgh, where a successful career was curtailed in order to permit of his carrying on at Llanelly the extensive practice of his uncle, the late Dr. Buckley. From the first he

showed a predilection for investigation, and readiness to bring the refinements of the laboratory to bear upon the problems of general practice, so that he soon was recognised as a valuable addition to the medical fraternity of the town and district. His medical *confrères* over a large area quickly learned to rely on him for assistance and information in X ray work and in the making of bacteriological investigations, blood examinations, and other laboratory procedure, and he willingly placed at their disposal his skill and knowledge. He was a thoroughly sound and good general practitioner and a skilful surgeon, but his bent was towards the scientific side of his profession, and he was one of the pioneers in South Wales in X ray development, radiotherapy, and opsonic work.

He was medical officer of health for the Llanelly area, medical inspector of schools, certifying factory surgeon, and medical officer to several works in the district, and from his public position no less than from his success in private practice was able to bring a powerful influence for good among his neighbours. He possessed those qualities of mind and character which, while they ensure respect, endear a man to all classes of the community, and he gained the affectionate esteem of everyone who knew him. Of a reserved disposition, he was not more in the public gaze than his posts necessitated—in fact, he studiously avoided publicity where possible. But his public knew him for a kind, sympathetic, and able man, always firm as a rock in opposition to wrong, and the display of sorrow at his death showed that his loss was deeply and widely felt.

Dr. Roderick left a widow and two children.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—A. De Luyck (Sections I. and II.), Brussels; J. Ellison (Sections I. and II.), Cambridge and St. George's Hospital; O. Marshall (Sections I. and II.), University College Hospital; G. Meyer (Section II.), Graz; and R. P. Wylde (Sections I. and II.), Manchester.

Medicine.—E. C. Banks (Section I.), Manchester; E. G. Brisco-Owen (Section II.), Cardiff and Royal Free Hospital; O. Marshall (Section I.), University College Hospital; T. F. O'Mahony (Section I.), London Hospital; and W. H. Parkinson (Sections I. and II.), Manchester.

Forensic Medicine.—A. De Luyck, Brussels; W. H. Parkinson, Manchester; and J. E. S. Sheppard Jones, St. Thomas's Hospital.

Midwifery.—E. C. Banks, Manchester; A. De Luyck, Brussels; and M. J. A. Des Ligneris, Berne.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—W. H. Parkinson and R. P. Wylde.

UNIVERSITY OF LEEDS.—At examinations held recently the following candidates were successful:—

DEGREES OF M.B. AND CH.B.

J. P. Brown, W. S. Hart, H. N. Ingham, J. P. Musson,* C. G. K. Sharpe, B. A. Slowcombe,* and G. V. Stockdale.*
* Second-class honours.

M.B., CH.B. SECOND EXAMINATION.

Anatomy and Physiology.—L. H. Butler, W. A. Drake, J. C. Gillies, H. R. Knowles, P. K. Messon, H. Sinson, H. L. Taylor, and C. Ward.

FINAL EXAMINATION, PART I.

Pathology, Forensic Medicine, and Public Health.—F. Wigglesworth and B. W. F. Wood.

DENTAL DIPLOMA.

Mr. Howden.

DIPLOMA IN PUBLIC HEALTH.

P. W. Ashmore, W. M. Hitchins, and J. H. Mason.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations held recently the following candidates were successful:—

THIRD M.B. EXAMINATION.

Pharmacology, Therapeutics, and Hygiene—Walter Barnes, L. S. Daly, R. B. Gorst, C. L. Graham, Harold Harrison, G. B. Horrocks, T. P. Kilner, Frank Oppenheimer, W. J. A. Quine, and Harold Sheldon.

Pharmacology and Therapeutics.—C. T. G. Bird.

FIRST M.B. EXAMINATION.

Organic and Bio-Chemistry.—Gwendolen Birch-Jones and D. R. Garrett.

UNIVERSITY OF EDINBURGH.—At the Graduation Ceremonial on Dec. 21st the following degrees were conferred:—

Degree of Doctor of Medicine.—David Colvin Henry, Ronald Tydd Herdman, and George William Robert Skene.

Degree of Master of Surgery.—Mukhtar Ahmed Ansari, B.A. (*in absentiâ*). Thesis commended.

Degrees of Bachelor of Medicine and Bachelor of Surgery.—Edward Gordon Anderson (*in absentiâ*), Amédée Edwin Charles Beausoleil, Basil John Wilberforce Bennetts, Gilbert Burnet, Lawrence Dougal Callander, Thomas Forrest Craig, William Allison Dunn, Louis Thomas Eden, Arthur Charles England, James Erlank, Thomas Richard Evans, Alexander James Ewing, M.A., Annie Grange Fergus, Alexander Galletly, Frederick Peter Gibson, Matthew Edward Goode, Robert Govan, M.A., Max Greenberg, John Donald Gunn, B.A., Charles Cochrane Iles, Hannah Margaret Irving, B.Sc., Alexander Brown Jamieson, Charles Aloysius Keegan, Thomas Dymock Kennedy, William Douglas Kirkwood, Edward William Lawrence, Sea Foon Lee, Richard Charles Lowther, Duncan John M'Afee, Wilfrid Victor Macaskie, John Dugald M'Ewen, M.A., Marion Macintyre, Donald James M'Laren, Elizabeth Macleod, Arthur Murray Masters, Daniel Beresford Maunsell, Horace Macaulay Mills, Samuel Newman Mokand, Francis Laird Moore, Christoffel Cornelius Murray, Koka Ahobala Rao, Evan Williams Richards, William Robert Ridley, Thomas Robert Sandeman, Charlotte Dorothy Schaeffer, Subrata Chunder Sen, John Watt Senter, John Cormack Simpson, Austin Nimmo Smith, Norman Walter Stevens, John Stevenson, David Edmund Stodart, James Robert Stott, George Sutherland, Bernard Charles Tennent, Dirk Leonardus Theron, Pieter Hendrik du Toit, Chung Yik Wong (passed with Second-class honours), and Norman Campbell Young.

Diploma in Tropical Medicine and Hygiene.—William Henry Forsyth (Captain R.A.M.C.) (*in absentiâ*), Edward Charles Cecil Maunsell (Captain I.M.S.), and Allan Watson.

The Stark Scholarship in Clinical Medicine has been awarded to David Murray Lyon, M.B., Ch.B.

THE Queen has sent a Christmas donation of £10 to the Chelsea Hospital for Women.

THE MEDICAL TREATMENT OF SCHOOL CHILDREN.—At a recent meeting of the Marylebone division of the British Medical Association it was decided to convene a meeting of all the registered medical practitioners resident or practising in Marylebone, for the purpose of ascertaining their views upon the question of the medical treatment of school children found on inspection to be defective; and of considering what action, if any, should be taken to express those views. The meeting will be held on Monday, Jan. 9th, 1911, at the rooms of the Medical Society of London, Chandos-street, Cavendish-square, W., at 5 P.M.

ROYAL COLLEGE OF SURGEONS IN IRELAND AND "GRINDING."—The Council of the Royal College of Surgeons in Ireland has adopted very stringent regulations for the control of the "grinding" or private coaching which is a feature of Irish medical schools. No one is to be allowed to take private pupils in the school of the College who is not a Fellow of the College and approved by the Council on the recommendation of the dean. Moreover, every such "grinder" must pay an annual licence fee of five guineas, and certain capitation fees for his pupils according to scale. These capitation fees are in some cases greater than the fees usually charged to the pupils. The regulations practically crush "grinding" out of the school, and as students are not likely to rely entirely on official teaching, an exodus of students to other schools is not unlikely.

ROUX'S OPERATION FOR OVARIAN CYST.—Dr. Bastian publishes an interesting case of operation on a very large ovarian cyst in the October number of the *Revue Médicale de la Suisse Romande*. The patient, aged 79 (!), was suffering from acute dyspnœa producing deep cyanosis and from prolapse of the uterus and vagina owing to a very large ovarian tumour diagnosed as cyst. As mere puncture often proves inefficacious owing to the gelatinous nature of the contents of the cyst, Dr. Bastian decided to operate "à deux temps," imitating Dr. Roux in the treatment of a similar case. The first day Dr. Bastian made an incision of two inches in the median line under local anæsthesia with novocaine, sutured the cyst to the aperture and punctured it, leaving the contents to ooze out slowly. After 24 hours he broke down part of the remaining walls of the multilocular cyst, thus emptying the greater part of the fluid contents, and then after enlarging the external wound, also only under local anæsthesia, he opened the peritoneum, after suturing the aperture in the tumour, twisted the remnant of it, and pulled it out of the aperture and removed it. The ligature of the pedicle alone caused the patient some pain. Duration of operation 15 minutes. Normal temperature; good recovery.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, London.

On Acute Intestinal Toxæmia in Infants. An Experimental Investigation of the Etiology and Pathology of Epidemic or Summer Diarrhœa. By Ralph Vincent, M.D. An Address delivered before the Glasgow Obstetrical and Gynæcological Society on Nov. 23rd, 1910. Price 3*s*. 6*d*. net.

Radium, its Physics and Therapeutics. By Dawson Turner, B.A., M.D., F.R.C.P. Edin., M.R.C.P. Lond., F.R.S. Edin. Price 5*s*. net.

CHAPMAN AND HALL, LIMITED, London.

The World of Life. A Manifestation of Creative Power, Directive Mind, and Ultimate Purpose. By Alfred Russel Wallace, O.M., D.C.L., F.R.S., &c. Price 12*s*. 6*d*. net.

Principles of the Science of Organisation as applied by the Knowledge Organisation Bureau, Limited, in its Bureau Encyclopædias. By Marshall Bruce-Williams, General Manager of the Knowledge Organisation Bureau, Limited. Colour Scheme worked out by C. R. Wylie. Price 10*s*. 6*d*. net.

CHURCHILL, J. AND A., London.

The Care of the Teeth during School Life. By R. Denison Pedley, F.R.C.S. Edin., L.D.S. Issued by the Medical Officers of Schools Association. Price 1*s*. net.

CONSTABLE AND COMPANY, LIMITED, London.

Insects and Disease. A Popular Account of the Way in which Insects may Spread or Cause some of our Common Diseases. With many illustrations from photographs. By Rennie W. Doane, A.B., Assistant Professor of Entomology, Leland Stanford Junior University. Price 8*s*. net.

DORNAN, WILLIAM J., 701-709, Arch-street, Philadelphia.

The Problem of Race Betterment. By J. Ewing Mears, M.D., LL.D. Price not stated.

FROWDE, HENRY, AND HODDER AND STOUGHTON, London.

Manual of Bacteriology. By Robert Muir, M.A., M.D., F.R.C.P. Ed., and James Ritchie, M.A., M.D., F.R.C.P. Ed. Fifth edition. Price 10*s*. 6*d*. net.

GREENING AND CO., LIMITED, 91, St. Martin's-lane, London, W.C.

Doctor Grey. A Novel. By Stephen Andrew, Author of "The Serpent and the Cross." Price 6*s*.

GREENWOOD, HENRY, AND CO., 24, Wellington-street, Strand, London, W.C.

The British Journal Photographic Almanac and Photographer's Daily Companion, 1911. Edited by George E. Brown, F.I.C. Price 1*s*. net; cloth, 1*s*. 6*d*. net.

GRIFFIN, CHARLES, AND CO., LIMITED, London.

The Year-Book of the Scientific and Learned Societies of Great Britain and Ireland. Compiled from Official Sources. Twenty-seventh Annual Issue. 1910. Price 7*s*. 6*d*.

KEENER, GEORGE, AND CO., 16A, Red Lion-square, London.

Diagnosis and Treatment of Diseases of Women. By Harry Sturgeon Crossen, M.D. Second edition, revised and enlarged. Price 25*s*. net.

LANGLEY AND SONS, LIMITED, Euston Printing Works, George-street, London, N.W.

University College Hospital Medical School (University of London) Calendar. Eighty-third Session. MDCCCCX.-MDCCCCXI. Price 2*s*. 6*d*. (or 3*s*. post free); or to students of the School and Hospital, 1*s*. 6*d*. (or 2*s*. post free).

LEWIS, H. K., London.

Medical Diagnosis. By W. Mitchell Stevens, M.D., M.R.C.P. Price 25*s*. net.

An Epitomised Index of Dermatological Literature. An Epitome of Volumes 1 to 21 inclusive of the British Journal of Dermatology. By A. Winkelried Williams, M.B., C.M. Edin., D.P.H. Lond. Price 12*s*. 6*d*. net.

LIVINGSTONE, E. AND S., Edinburgh.

A Text-book of Public Health. By John Glaister, M.D., D.P.H. Camb., F.R.S.E. Second edition. Price 12*s*. net.

MACMILLAN COMPANY, THE, New York.

A Text-book of General Bacteriology. By William Dodge Frost, Associate Professor of Bacteriology in the University of Wisconsin, and Eugene Franklin McCampbell, Professor of Bacteriology in the Ohio State University. Price 7*s*. net.

MURRAY, JOHN, London.

Shans at Home. By Mrs. Leslie Milne, Member of the Royal Asiatic Society; Member of the Bombay Natural History Society. With two chapters on Shan History and Literature by the Rev. Wilbur Willis Cochrane. Price 15*s*. net.

NISBET, JAMES, AND CO., LIMITED, London.

Forbidden Fruit for Young Men. By Lieutenant-Colonel Seton Churchill. Eighth edition (15,000). Price not stated.

REBMAN, LIMITED, London.

Progressive Medicine. Edited by Hobart Amory Hare, M.D., assisted by Leighton F. Appleman, M.D. Volume III. September, 1910. Price, single volumes, 12*s*. net. Annual subscription £2 net.

SCHACHTEL, EUGEN, Berlin, S.W. 48. KEGAN PAUL, TRENCH, TRÜBNER, AND CO., LIMITED, London.

Medical Guide through the Chief Watering-places and Health-resorts, Sanatoria, and Factories of Therapeutic Articles of Germany and other European Countries. Edited by Harold Morré, M.D., American Physician and Surgeon, Berlin. Price 2*s*. 6*d*. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

CRIDLAND, A. B., F.R.C.S. Edin., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 25, with a view to his being employed in all ophthalmic cases which may arise in the Circuit.

DANIELS, D. W., F.R.C.S. Eng., M.D., B.S. Lond., has been appointed Surgical Registrar at the Prince of Wales's Hospital, N.

DREW, J. H., M.B., B.S. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Poole District of the county of Dorset.

EALES, W. H. FULFORD, B.Ch. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Senior House Surgeon to the Eye Hospital, Birmingham.

FISHER, R. W., M.B., B.S. R.U.I., has been appointed Medical Inspector of Police for the South and East Divisions of Belfast.

HARNETT, WILLIAM GEORGE, M.D. Dub., has been appointed Medical Superintendent of the Barnet Isolation Hospital.

JOHNSTON, T. ARNOLD, M.D. Edin., has been appointed Honorary Pathologist to the Leicester Infirmary.

MACDONALD, D. M., M.B., B.S. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Leven District of the county of Fife.

PARSONS, LEONARD, M.D. Lond., M.R.C.P. Lond., has been appointed Physician to Out-patients at the Birmingham and Midland Free Hospital for Sick Children.

REYNOLDS, LEWIS WILLIAM, M.R.C.S., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for County Court Circuit No. 37, more particularly to High Wycombe, Aylesbury, and Chesham County Courts.

RICHARDSON, J. N., M.D. Durh., M.R.C.S., has been appointed Medical Officer of Health of Ilkley.

SCOTT, H. HAROLD, M.D. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Bacteriologist and Fermentation Chemist to the Government of Jamaica.

WALLACE, D., M.B., M.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ullapool District of the county of Ross and Cromarty.

WYATT, W. L., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Hornsea District of the county of Yorks, East Riding.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BARBADOS GENERAL HOSPITAL.—Senior Resident Surgeon. Salary £300 per annum and unfurnished quarters.

BEDFORD COUNTY HOSPITAL.—House Physician. Salary £80 per annum, with apartments, board, and laundry.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Assistant Physician. Also House Surgeon for six months. Salary at rate of £20 per annum, with board, residence, &c.

BOURNEMOUTH, ROYAL BOSCOMBE AND WEST HANTS HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, lodging, and washing.

BOURNEMOUTH, ROYAL VICTORIA HOSPITAL.—House Surgeon. Salary £100 per annum, with board, rooms, and laundry.

BRISTOL ROYAL INFIRMARY.—Two House Physicians and One House Surgeon. Salary £100 each per annum. Also One Obstetric and Ophthalmic House Surgeon, and One Throat, Nose, and Ear House Surgeon. Salary £75 each per annum. Also Casualty Officer for six montes. Salary £50 per annum. Apartments, board, and laundry are provided. Also Honorary Dental Anæsthetist. Also Honorary Medical Registrar. Also Dental House Surgeon. Salary £100 per annum, with apartments, board, and laundry.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—House Surgeon for six months. Also Second House Surgeon. Salary £80 per annum in each case, with board, residence, and laundry.

CANCER HOSPITAL, Fulham-road, London, S.W.—Surgical Registrar. Salary 50 guineas per annum. Also House Surgeon for six months. Salary £70 per annum.

CARDIGANSHIRE COUNTY COUNCIL.—Medical Officer. Salary £450 per annum.

CHELTENHAM GENERAL HOSPITAL.—Resident Surgeon. Salary £180 per annum, with rooms, coal, and gas.

EARLSWOOD ASYLUM, Redhill.—Junior Assistant Medical Officer, unmarried. Salary £130, with board, lodging, and washing.

GLASGOW MATERNITY AND WOMEN'S HOSPITAL.—Two Outdoor House Surgeons at the Hospital. Outdoor House Surgeon (female) to West-End Branch for three months. Also Two Visiting Gynæcologists, Two Assistant Gynæcologists, Two Supernumerary Assistant Gynæcologists, and House Surgeon, the appointment in last case being for six months.

GLOUCESTER, BARNWOOD HOUSE HOSPITAL FOR MENTAL DISEASES.—Second Assistant Medical Officer. Salary £160 per annum, with board, &c.

GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

HAMPSTEAD GENERAL HOSPITAL.—House Physician for eight months. Salary at rate of £70 per annum, with board and residence.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—Assistant Casualty Medical Officer (and House Physician), unmarried, for six months. Salary £30, with board, residence, &c. Also House Surgeon, unmarried, for six months. Salary £30, with board, residence, &c.

HULL, VICTORIA CHILDREN'S HOSPITAL, Park-street.—Assistant House Surgeon (female). Salary £40 per annum, with board and laundry.

JERUSALEM, BRITISH OPHTHALMIC HOSPITAL.—Chief Surgeon. Salary £500.

LIVERPOOL EYE AND EAR INFIRMARY, Myrtle-street.—Honorary Assistant Surgeon.

LONDON HOSPITAL, WHITECHAPEL, E.—Medical Registrarship. Salary £100 per annum.

LONDON TEMPERANCE HOSPITAL.—Medical Registrar. Salary at rate of 40 guineas per annum.

MANCHESTER GENERAL HOSPITAL, Gartside-street.—Assistant Medical Officer for six months. Salary £100 per annum.

MANCHESTER VICTORIA MEMORIAL JEWISH HOSPITAL, Cheetham.—Resident Medical Officer (female) for six months. Salary at rate of £80 per annum.

NATIONAL HOSPITAL FOR THE RELIEF AND CURE OF THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.—Honorary Anæsthetist.

NEWCASTLE-UPON-TYNE, CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Assistant. Salary £125 per annum, with board, lodging, &c.

NEWCASTLE-UPON-TYNE EDUCATION COMMITTEE.—Second Assistant Medical Officer. Salary £250 per annum.

NORTH SHIELDS, TYNEMOUTH VICTORIA JUBILEE INFIRMARY, Spring Gardens.—House Surgeon. Salary £100 per annum, with rooms, board, &c.

OCHILTREE PARISH COUNCIL, Ayrshire.—Medical Officer. Salary £25 per annum.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Surgeon.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Dental Surgeon. Salary £50 per annum.

READING, BERKSHIRE EDUCATION COMMITTEE.—Assistant Medical Inspector of Schools. Salary £300 per annum.

ROTHERHAM HOSPITAL.—Senior House Surgeon. Salary £110 per annum, with board, lodging, and washing.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Assistant Physician.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—Surgeon.

RYDE, ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House Surgeon. Salary £125 per annum.

ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road.—Resident Medical Officer, unmarried. Salary £105 per annum, with residence and attendance.

ST. PAUL'S HOSPITAL FOR SKIN AND URINARY DISEASES, Red Lion-square, W.C.—Clinical Assistant.

SHEFFIELD ROYAL INFIRMARY.—Seventh Resident Medical Officer. Salary £60 per annum, with board and residence.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

STAFFORD, STAFFORDSHIRE GENERAL INFIRMARY.—Assistant House Surgeon. Salary £82 per annum, with board, residence, and laundry.

STOCKPORT UNION, STEPPING HILL HOSPITAL.—Resident Assistant Medical Officer. Salary £130 per annum, with apartments, rations, &c.

STOKE-ON-TRENT, NORTH STAFFS. INFIRMARY, Hartshill.—House Surgeon. Salary £100 per annum, with apartments, board, and washing.

SUNDERLAND INFIRMARY.—House Physician. Salary £80 per annum, with board, residence, and washing.

WESTERN SKIN HOSPITAL, 179, Great Portland-street, W.—Assistant Physician.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Horbury, in the county of Yorks, West Riding; at Llanelly, in the county of Carmarthen; at North Walsham, in the county of Norfolk; at Spilsby, in the county of Lincoln; at Nuneaton, in the county of Warwick; at Wednesbury, in the county of Stafford; and at Dunoon, in the county of Argyll.

Births, Marriages, and Deaths.

BIRTHS.

DUNN.—On Dec. 15th, at Beaufort East, Bath, to the wife of T. W. Newton Dunn, M.A., M.B., B.C., a son.

MARRIAGES.

HOLT—WADE.—On Dec. 15th, at St. Margaret's Church, Leytonstone, Arthur Knight Holt, M.D. Durh., L.R.C.P. Lond., M.R.C.S. Eng., to Audrey Daisy, daughter of Mr. and Mrs. Charles Aubrey Wade, of Henfield, Sussex.

DEATHS.

COLLENS.—On Dec. 18th, in Vienna, of broncho-pneumonia, Edward Howard Collens, M.B., B.S. Lond., of Pen-y-Bryn, Hafod-road, Hereford, in his thirty-seventh year.

GREATHEAD.—On Oct. 26th, in North-East Rhodesia, John Baldwin Smithson Greathead, M.B., C.M. Edin.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

REFUSAL TO SUBMIT TO AN OPERATION.

A CASE under the Workmen's Compensation Act, 1906, of some medical interest, inasmuch as the question arising was whether the applicant had unreasonably or wrongly refused to submit to an operation, came before his honour Judge Scully, with Dr. J. C. Uhthoff as medical referee, at Haywards Heath county court on Dec. 15th. The applicant was a coachman who, in December of last year, met with an accident while chaff cutting, his ring finger on his left hand being crushed in the cogs of the machine. His employers, the respondents, paid him half wages up to September, but since then he had only been able to do light work and had not in any week earned more than 15*s*. Applicant had refused to have the finger amputated, and medical witnesses on his behalf stated there would be no general advantage in having the operation performed, as the removal of the damaged finger would not strengthen the hand or improve the other fingers or the grip of the hand. For the respondents, on the other hand, medical evidence was given that the removal of the injured finger would be a great improvement, and that while the man was under an anæsthetic the adhesions in the adjoining fingers could be also broken down and partly removed. The county court judge held that the refusal of the coachman to undergo an operation was not unreasonable, and awarded him 4*s*. a week compensation.

THE TREATMENT OF NETTLE-RASH.

To the Editor of THE LANCET.

SIR,—I shall be thankful if any of your readers will kindly give me a hint how to treat a form of nettle-rash which comes out, say, every third, fourth, or fifth day. Ichthyol has proved no good; aspirin, iodide of potassium, and colchicum checks the condition and makes the interval between the attacks longer. The patient is a female, aged 31, dark, small, wiry, and otherwise healthy.

I am, Sir, yours faithfully,

Dec. 24th, 1910. C. A.

ENCEINTE.

THE pronunciation of this polite word is a puzzle to many people, and its etymology we find is also in dispute. In Webster's dictionary (1891) its etymology is given as (F., fr. L. *in* not + *cinctus*, p.p. of *cingere*, to gird about). In the Encyclopædic Dictionary (Cassell, 1903) the etymology is given as Lat. *incinctus*, girt about: *incingo*, to gird about: *in* = in, around, and *cingo* = to gird. Robert Ainsworth, the Latin scholar, who published his dictionary in 1736, stated that *incinctus* meant (1) girded, environed, hemmed in; and (2) ungirded, loose. Here we have both sides at once. But for the word *Incingo* he gives only, "To gird, to gird about, to environ, to compass in," so how he came to give the second meaning for the participle remains obscure. Some students have thought the word *enceinte* to have a possible connexion with "*Inciens*," and Ainsworth quotes *Incientes oves*, ewes near their time of yeaning. To yean, or to ean, means in English to bring forth young as a sheep, or to lamb. *Ædcen* in Anglo-Saxon meant pregnant. Here, again, is a word very similar in appearance to *enceinte*. Dr. William Smith, LL.D., the well-known classical scholar and author of the dictionaries of Greek and Roman antiquities, gave in his Latin-English dictionary published in 1855 the derivation of the French *enceinte* and the Italian *incinta* (pregnant) as from the Latin *inciens*.

DRINK, MANIA, AND CRIME.

AT the Old Bailey Stanley Denniss, a carman, who was indicted for the murder of the youngest of his four children, a girl, aged 6 months, by strangling her, was proved to have been "very strange in his manner" on the morning of the crime, and after committing it to have remarked to a neighbour that she would "have a surprise in about five minutes." He then went into the street, where he met a constable, to whom he accused himself of the murder and gave himself up. He was out of work at the time, but his wife earned a little money as a charwoman, and he had been drinking heavily. The inquiries of a police inspector showed that other members of the prisoner's family had been confined as lunatics and that his father had committed suicide. The evidence of Dr. S. R. Dyer, medical officer at Brixton prison, who had reported on the case to the Director of Public Prosecutions, was to the effect that, taking into consideration the family history of the prisoner, he was of the opinion that alcohol affected him readily and had produced in him a condition of mental derangement at the time when he committed the murder, owing to which he did not know the nature and quality of his act or that it was wrong. Dr. Dyer was questioned by Mr. Justice Coleridge, who tried the case, as to the inference which might be drawn from the prisoner having gone immediately to a

policeman and given himself up, and replied that it was possible that it might have suddenly dawned upon the man that he had done wrong, so that at the time when he surrendered himself to the police he knew the nature and quality of the act he had committed. The jury accepted the view thus presented to them, and found that the prisoner was guilty of murder, but that he was insane when he committed it. The usual order for his detention as a criminal lunatic was made.

THE BONE CALLED "LUZ."

BY inadvertence we omitted to state in our annotation on this subject in our issue of Oct. 1st that the information was derived from an article by Mr. J. H. Garreson, contributed to the *New York Medical Journal* for July 23rd, 1910. In view of the fact that our annotation has been largely copied and commented upon by other journals we desire to place the credit for the facts in the proper quarter.

MOSSMAN FEVER.

UNDER the name of "Mossman fever" Mr. Oliver Smithson describes in the *Journal of Tropical Medicine and Hygiene* for December a peculiar fever common in some parts of North Queensland, occurring chiefly in the Mossman district, a few miles north of Port Douglas. The symptoms are sudden headache, and a feeling of general malaise, accompanied by shivering and a rise of temperature in a few hours to 102°, 103°, 105° F. The pulse-rate is increased, but not in proportion to the temperature. The tongue soon becomes coated with a moist white fur, and the breath is offensive. Vomiting and pains in the epigastrium occur, but are rare. Within a few days after the onset the posterior axillary glands become enlarged and painful to the touch. Occasionally the inguinal glands enlarge. The duration of the fever is from 10 to 14 days, the temperature dropping by crisis. In the few fatal cases the patient sinks into a typhoid state, grows very dull and lethargic, and has a sharp rise of temperature just before death. Blood examination is negative; occasionally the filaria sanguinis hominis has been found. The fever attacks only those engaged in cutting the sugar cane, the farmers and those working in the crushing mills being unaffected. The mosquito does not seem to be responsible for the disease, and apparently it is not infectious. Quinine, salicylate of soda, and salicylate of quinine are without effect on the temperature. The headache is best relieved by phenacetin, and simple saline mixtures seem to be most efficacious in rendering the patient comfortable.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

THE following Congresses, Conferences, and Exhibitions are announced for 1911:—

Feb. 20th–25th (Cairo).—Fifth International Congress for the Blind.
March 2nd–6th (Berlin).—Thirty-second Balneological Congress.
" 23rd (Paris).—First Congress of French Medical Journalists.
April 4th–7th (London).—Fourth Annual Nursing and Midwifery Conference and Exhibition.
" 18th–20th (Paris).—Third Congress of Physiotherapy of French-speaking Physicians.
" 19th–22nd (Wiesbaden).—Twenty-eighth German Congress of Internal Medicine.
" 20th–22nd (Groningen).—Thirteenth Nature and Medical Congress.
May 30th (The Hague).—International Congress on Opium.
May–October (Dresden).—International Hygiene Exhibition.
May–October (London, Crystal Palace).—Festival of Empire Imperial Exhibition. (Profits to King Edward VII. Hospital Fund.)
May–October (?) (London, Shepherd's Bush).—Coronation Exhibition.
June (Paris).—First Congress of the International Medical Association for the Prevention of War.
June 5th–8th (Kolberg, Prussia).—Fifth International Congress of Thalassotherapy.
June and July (Romford).—Town Planning and Modern House and Cottage Exhibition.
July (Birmingham).—British Medical Association.
July 24th–29th (Belfast).—Congress of the Royal Sanitary Institute.
August or September (Berlin).—Third International Laryngo-Rhinological Congress.
September (Brussels).—Exhibition of Fractures.
" (Turin).—International Congress of Pathology.
" (Genoa).—International Exhibition of Marine Hygiene.
Sept. 11th–15th (Berlin).—National Congress for the Study and Prevention of Infantile Mortality (*Gouttes de Lait*).
" 11th–16th (The Hague).—Thirteenth International Congress on Alcoholism.
" 18th–23rd (Sydney).—Australasian Medical Congress.
" 18th–24th (Turin).—Fourth National Congress of Hygiene.
" 24th–30th (Rome).—International Congress on Tuberculosis.
" 25th–29th (Rome) Seventh International Congress of Dermatology and Syphilology.
October (Cologne).—International Congress of Criminal Anthropology.
Oct. 1st–4th (Liége).—Second Congress of Alimentation.
Dec. 4th–9th (Havana, Cuba).—American Public Health Association.
(Date not fixed) (Rome).—International Exhibition of Social Hygiene.
(Date uncertain) (Turin).—International Exhibition of Industry and Labour.

In 1912:—
July (?) (Cologne).—International Congress of Nurses.
September (Prague).—International Congress of Radiology and Medical Electrology.
September (Berlin).—Sixth International Congress of Obstetrics and Gynæcology.
" Visit of German Medical Men to America.
Nov. 22nd–29th (Washington, D.C.).—Fifteenth International Congress of Hygiene and Demography.

In 1913:—
(London).—Seventeenth International Congress of Medicine.
(Dresden (?)).—International Conference on Cancer.
August (Buffalo).—Fourth International Congress of School Hygiene.

In 1914:—
(Vienna).—Third International Congress for Professional Diseases.

In 1915:—
(London).—International Prison Congress.
(London).—Imperial Exhibition (?)

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries G. F. Blacker, J. H. Targett): at 8 P.M.

Specimens:

Dr. Eardley Holland: Sarcoma of the Uterus with Hæmatometra.
Dr. S. Cameron: (1) Rupture of the Uterus through a Cæsarean Scar; (2) Twin Extra-uterine Pregnancy; (3) Osteomalacic Pelvis.
Dr. A. H. N. Lewers: Interstitial Gestation Sac of between Two and Four Months' Development, Removed Unruptured with the Body of the Uterus by Abdominal Hysterectomy.
Dr. Herbert Spencer: Suppurating Ovarian Cyst Perforated into Small Intestine and Omentum, successfully Removed with Affected Bowel, Omentum, and Appendix.

Paper:

Mr. Alban Doran: Subtotal Hysterectomy for Fibromyoma Uteri, Forty Additional Histories.

A DISCUSSION will be held on Wednesday and Thursday, Feb. 2nd and 3rd, to be opened by Dr. Amand Routh, on "The Indications for, and Technique of, Cæsarean Section, and its Alternatives in Women with Contracted Pelves, who have been Long in Labour and exposed to Septic Infection."

The following have signified their intention of taking part in the Discussion:—Dr. Malins, Dr. Briggs, Dr. Maxwell, Dr. Munro Kerr, Dr. Rayner, Dr. Eden, Dr. Herbert Spencer, Dr. Edge, and Dr. Russell.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—L. Hemington Pegler, W. H. Kelson), at 11, Chandos-street, W.: at 5 P.M.

Cases and Specimens.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchberne-street, Edgware-road, W.

THURSDAY.—8.15 P.M., Annual General Meeting and Conversazion Presidential Address:—Science and Practice.

RONTGEN SOCIETY, 20, Hanover-square, W.

THURSDAY.—8.15 P.M., Prof. Rutherford: The Radioactivity Thorium.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales' Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Dr. E. W. Goodall: The Rashes of Some of the Acute Infectious Diseases and the Rashes which Simulate them (illustrated by lantern slides).

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital.

FRIDAY.—8 P.M., Clinical Meeting. Cases will be shown.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (4th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (5th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.), Central London Throat and Ear (Minor. 9 A.M., Major, 2 P.M.).

SATURDAY (7th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.) Hospitals operations are performed daily.

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THE INDEX TO THE LANCET.

The Index and Title-page for the current half year is published in this issue, which completes the second volume of the year 1910.

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VOLUMES for the second half of the year 1910 will be ready shortly. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 28th, 1910.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Dec. 22	30·22	S.W.	0·04	59	46	40	41	41	Foggy
,, 23	30·28	W.	...	57	53	39	39	40	Cloudy
,, 24	29·80	W.	...	55	54	40	52	53	Cloudy
,, 25	29·76	W.	...	67	46	38	40	41	Cloudy
,, 26	29·73	WSW	0·02	48	44	36	37	38	Fine
,, 27	29·70	N.	0·15	53	38	34	34	35	Cloudy
,, 28	30·24	N.	...	36	34	32	32	33	Overcast

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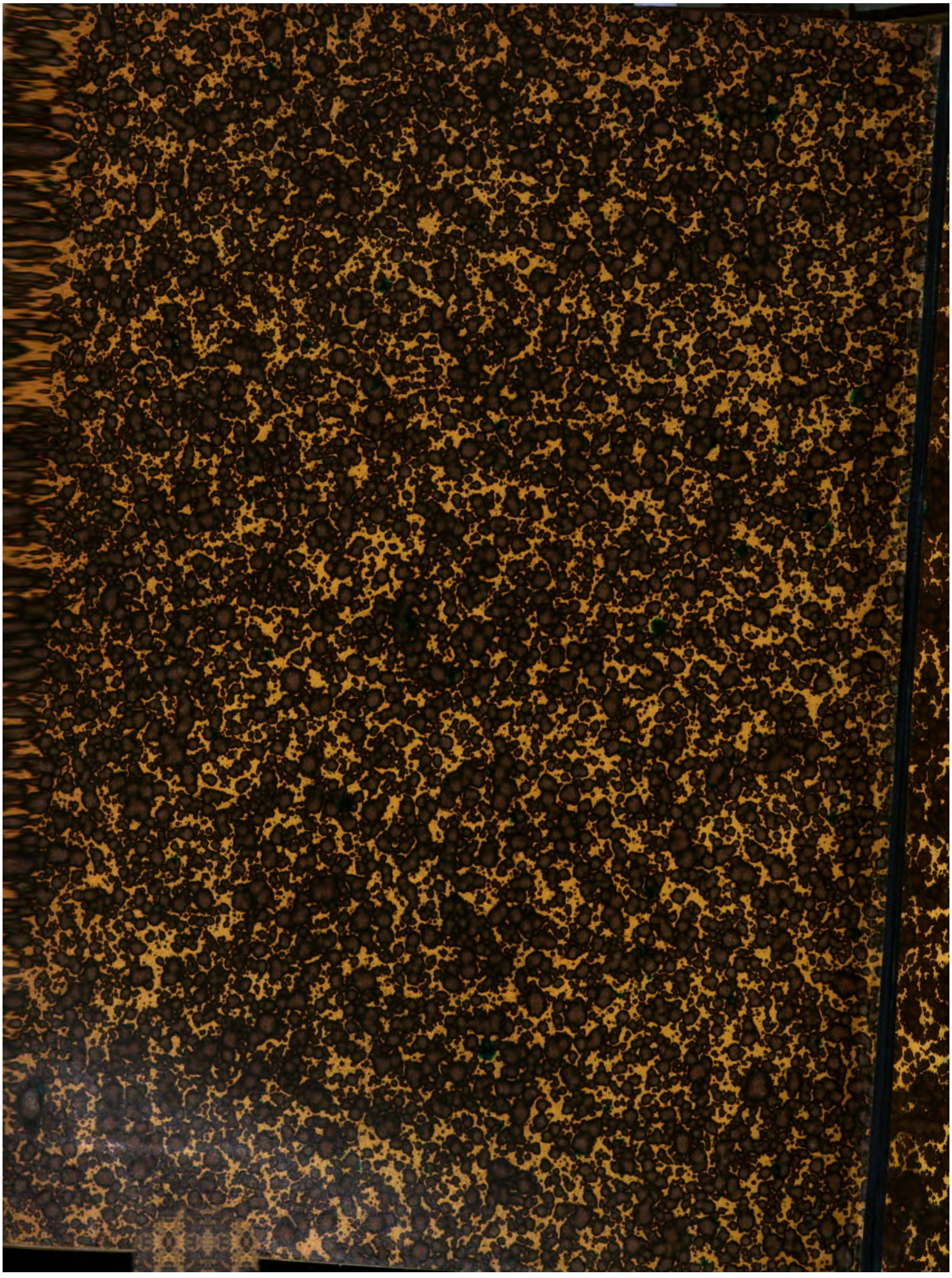

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